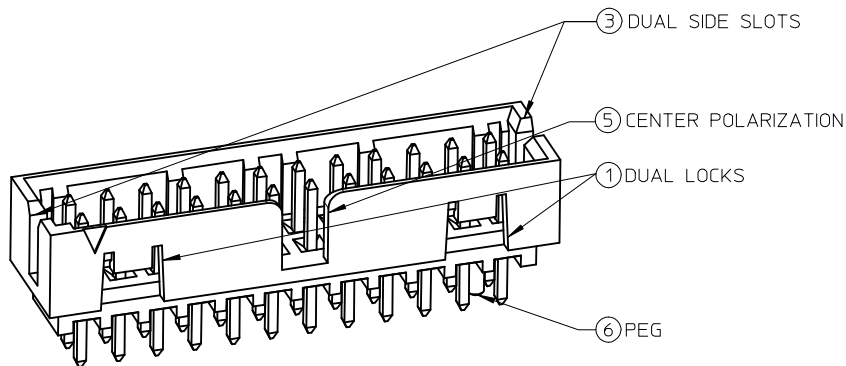
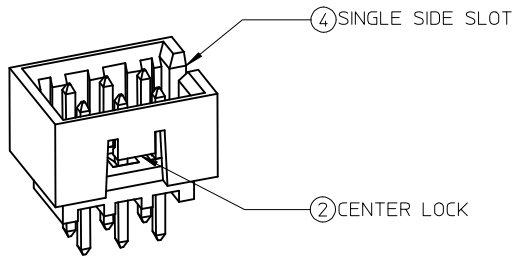


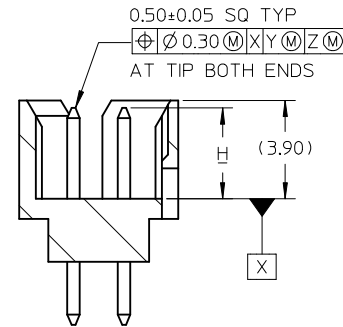
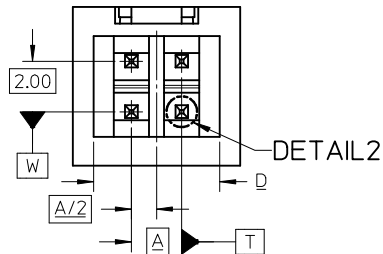
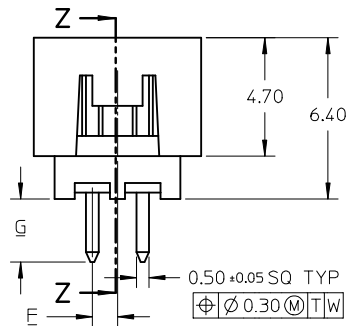
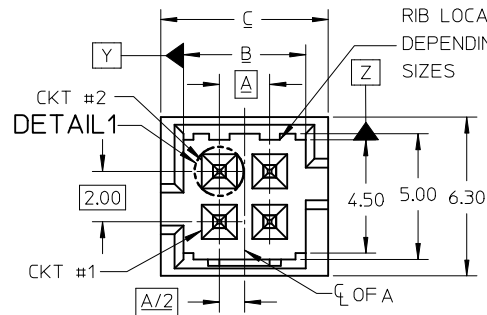
# FEATURES SELECTION GUIDE



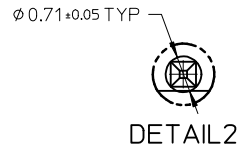
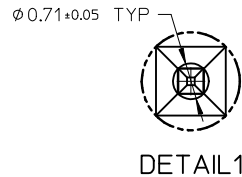
| 5               |                | 4        |            | 3        |                          | 2     |        | 1           |  |
|-----------------|----------------|----------|------------|----------|--------------------------|-------|--------|-------------|--|
| CIRCUIT<br>SIZE | FEATURES       |          |            |          |                          |       |        | SHEET<br>NO |  |
|                 | FRICTION LOCKS |          | SIDE SLOTS |          | ⑤ CENTER<br>POLARIZATION | ⑥ PEG |        |             |  |
|                 | ① DUAL         | ② CENTER | ③ DUAL     | ④ SINGLE |                          |       |        |             |  |
| 4               | N.A            | N.A      | YES        | N.A      | N.A                      | N.A   | 2 - 3  |             |  |
|                 | N.A            | YES      | YES        | N.A      | N.A                      | N.A   |        |             |  |
|                 | N.A            | YES      | N.A        | YES      | N.A                      | N.A   |        |             |  |
| 6               | N.A            | N.A      | YES        | N.A      | N.A                      | N.A   | 4 - 5  |             |  |
|                 | N.A            | N.A      | YES        | N.A      | N.A                      | YES   |        |             |  |
|                 | N.A            | YES      | YES        | N.A      | N.A                      | N.A   |        |             |  |
|                 | N.A            | YES      | YES        | N.A      | N.A                      | YES   |        |             |  |
|                 | N.A            | YES      | N.A        | YES      | N.A                      | N.A   |        |             |  |
|                 | N.A            | YES      | N.A        | YES      | N.A                      | YES   |        |             |  |
|                 | N.A            | N.A      | YES        | N.A      | YES                      | N.A   |        |             |  |
| 8 TO 12         | N.A            | N.A      | YES        | N.A      | YES                      | N.A   | 6 - 8  |             |  |
|                 | N.A            | N.A      | YES        | N.A      | YES                      | YES   |        |             |  |
|                 | N.A            | YES      | YES        | N.A      | N.A                      | N.A   |        |             |  |
|                 | N.A            | YES      | YES        | N.A      | N.A                      | YES   |        |             |  |
|                 | N.A            | YES      | N.A        | YES      | N.A                      | N.A   |        |             |  |
|                 | N.A            | YES      | N.A        | YES      | N.A                      | YES   |        |             |  |
| 14 TO 50        | YES            | N.A      | YES        | N.A      | YES                      | N.A   | 9 - 13 |             |  |
|                 | YES            | N.A      | YES        | N.A      | YES                      | YES   |        |             |  |

|                                                                             |                    |                                                                                |                                                        |                                                            |                            |                      |                    |                                                                           |                           |  |  |  |                                                                                                                                  |  |  |  |  |
|-----------------------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------|----------------------------|----------------------|--------------------|---------------------------------------------------------------------------|---------------------------|--|--|--|----------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| RELEASED<br>EC NO: S2015-1188<br>DRAWN:GMENARLY<br>CHK'D:CGOH<br>APPR:KHLIM | DESCRIPTION<br>REV | QUALITY SYMBOLS<br>F <sub>A</sub> =0<br>F <sub>C</sub> =0<br>F <sub>P</sub> =0 | GENERAL TOLERANCES (UNLESS SPECIFIED)                  |                                                            | DIMENSION STYLE<br>MM ONLY |                      | SCALE<br>NTS       | DESIGN UNITS<br>METRIC                                                    | THIRD ANGLE<br>PROJECTION |  |  |  |                                                                                                                                  |  |  |  |  |
|                                                                             |                    |                                                                                | 4 PLACES<br>3 PLACES<br>2 PLACES<br>1 PLACE<br>0 PLACE | mm                                                         | INCH                       | DRAWN BY<br>GMENARLY | DATE<br>2015/04/15 | TITLE<br>MILLIGRID<br>2MM PITCH, THROUGH HOLE<br>VERTICAL SHROUDED HEADER |                           |  |  |  |                                                                                                                                  |  |  |  |  |
|                                                                             |                    |                                                                                |                                                        |                                                            |                            | CHECKED BY           | DATE               |                                                                           |                           |  |  |  |                                                                                                                                  |  |  |  |  |
|                                                                             |                    |                                                                                |                                                        |                                                            |                            | APPROVED BY<br>KHLIM | DATE<br>2015/06/29 | DOCUMENT NO.<br><b>molex</b><br>SD-87831-0001                             |                           |  |  |  |                                                                                                                                  |  |  |  |  |
|                                                                             |                    |                                                                                |                                                        | ANGULAR ± 3 °                                              |                            | MATERIAL NO.         |                    |                                                                           |                           |  |  |  | SHEET NO.<br>1 OF 13                                                                                                             |  |  |  |  |
|                                                                             |                    |                                                                                |                                                        | DRAFT WHERE APPLICABLE<br>MUST REMAIN<br>WITHIN DIMENSIONS |                            | SEE TABLE            |                    |                                                                           |                           |  |  |  | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX<br>INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |  |  |  |  |
|                                                                             |                    |                                                                                |                                                        |                                                            |                            | SIZE<br>A3           |                    |                                                                           |                           |  |  |  |                                                                                                                                  |  |  |  |  |

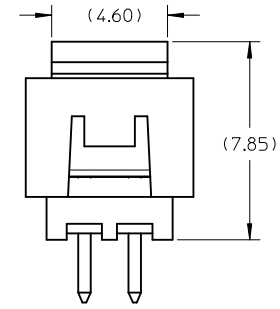
# 4 CIRCUITS



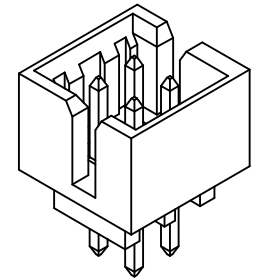
SECTION Z-Z



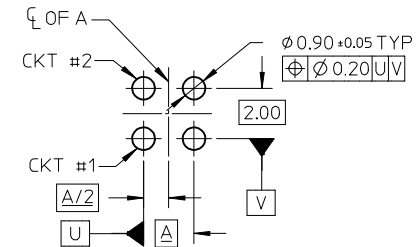
DETAIL2



VIEW FOR  
HEADER WITH CAP



VIEW FOR HEADER  
WITH ONLY DUAL SLOTS



RECOMMENDED PCB LAYOUT

## NOTES:

### 1. MATERIALS:

HOUSING: 30% GF, NYLON, UL94V-0, COLOR: BLACK

PIN: 0.50MM SQ PHOSPHOR BRONZE

### 2. FINISHES: REFER TO PLATING OPTIONS

### 3. PRODUCT SPECIFICATION: PS-87831-027

### 4. PACKAGING SPECIFICATION:

TUBE: PK-87831-001, TAPE AND REEL: PK-87831-300

### 5. MATES WITH: A. MOLEX CRIMP RECEPTACLE HOUSING: 51110 SERIES AND CRIMP TERMINAL: 50394 SERIES

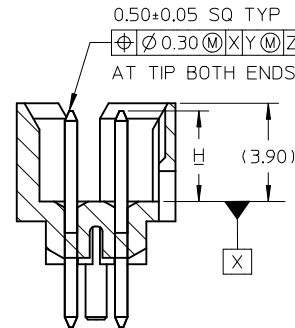
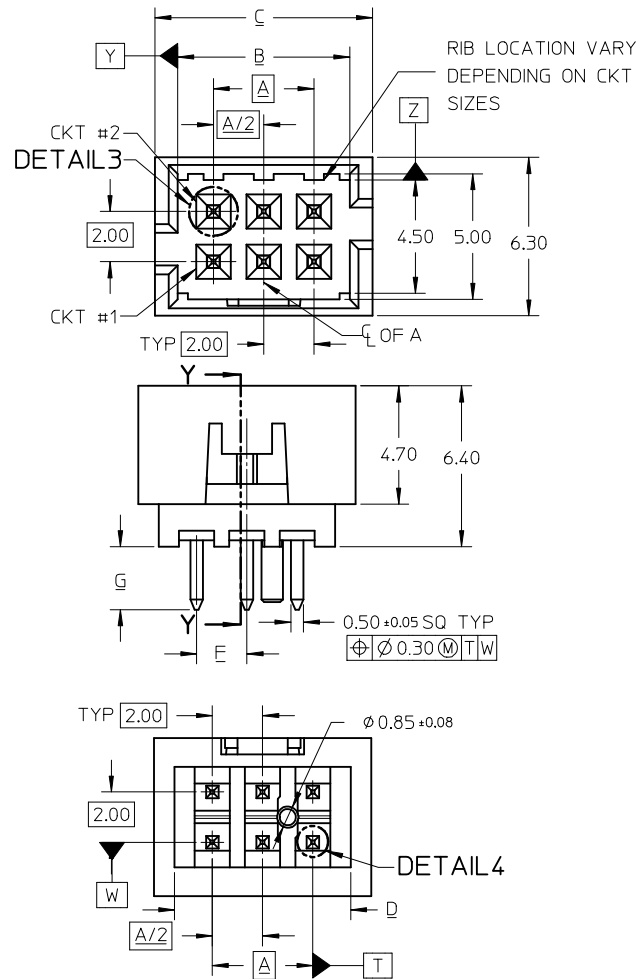
B. MOLEX 2MM MILLIGRID DUAL ROW IDT: 87568 SERIES

C. MOLEX 2MM MILLIGRID DUAL ROW RECEPTACLE:  
79107 (GOLD PLATED), 78787 (TIN PLATED)

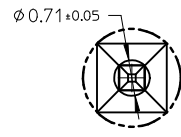
|                                                                                                                                                                                         |             |                                                                                                             |                                       |                                                                                                                               |                     |  |                                                                  |              |                        |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------------------------------------------------------------------------------------------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|---------------------|--|------------------------------------------------------------------|--------------|------------------------|--|--|
| <div>RELEASED</div> <div>EC NO: S2015-1188</div> <div>DRWNG:GMENARLY</div> <div>CHKD:CGOH</div> <div>APPR:KHLIM</div> <div>2015/04/15</div> <div>2015/06/29</div> <div>2015/06/29</div> | DESCRIPTION | <div>QUALITY SYMBOLS</div> <div>F<sub>A</sub>=0</div> <div>F<sub>G</sub>=0</div> <div>F<sub>P</sub>=0</div> | GENERAL TOLERANCES (UNLESS SPECIFIED) |                                                                                                                               | DIMENSION STYLE     |  | SCALE                                                            | DESIGN UNITS | THIRD ANGLE PROJECTION |  |  |
|                                                                                                                                                                                         |             |                                                                                                             |                                       |                                                                                                                               | MM ONLY             |  | NTS                                                              | METRIC       |                        |  |  |
|                                                                                                                                                                                         |             |                                                                                                             |                                       |                                                                                                                               | DRAWN BY DATE       |  | TITLE                                                            |              |                        |  |  |
|                                                                                                                                                                                         |             |                                                                                                             |                                       |                                                                                                                               | GMENARLY 2015/04/15 |  |                                                                  |              |                        |  |  |
|                                                                                                                                                                                         |             |                                                                                                             |                                       |                                                                                                                               | CHECKED BY DATE     |  | MILLIGRID<br>2MM PITCH, THROUGH HOLE<br>VERTICAL SHROUDED HEADER |              |                        |  |  |
|                                                                                                                                                                                         |             |                                                                                                             |                                       |                                                                                                                               | KHLIM 2015/06/29    |  |                                                                  |              |                        |  |  |
|                                                                                                                                                                                         |             |                                                                                                             |                                       |                                                                                                                               | APPROVED BY DATE    |  | molex                                                            |              |                        |  |  |
|                                                                                                                                                                                         |             | KHLIM 2015/06/29                                                                                            |                                       |                                                                                                                               |                     |  |                                                                  |              |                        |  |  |
|                                                                                                                                                                                         |             | MATERIAL NO.                                                                                                |                                       | DOCUMENT NO.                                                                                                                  |                     |  |                                                                  |              | SHEET NO.              |  |  |
|                                                                                                                                                                                         |             | SEE TABLE                                                                                                   |                                       | SD-87831-0001                                                                                                                 |                     |  |                                                                  |              | 2 OF 13                |  |  |
|                                                                                                                                                                                         |             | SIZE                                                                                                        |                                       | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |                     |  |                                                                  |              |                        |  |  |
|                                                                                                                                                                                         |             | A3                                                                                                          |                                       |                                                                                                                               |                     |  |                                                                  |              |                        |  |  |



# 6 CIRCUITS



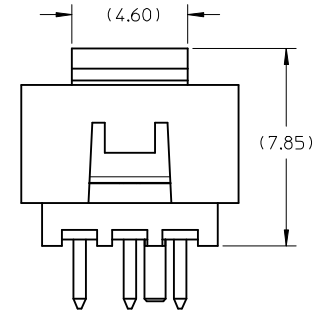
SECTION Y-Y



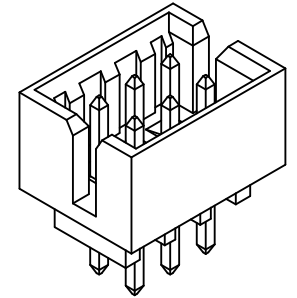
DETAIL3



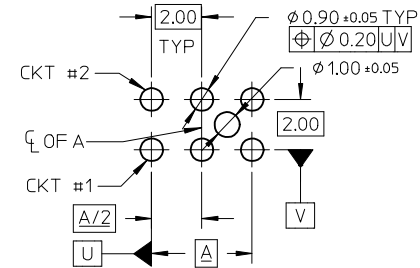
DETAIL4



VIEW FOR  
HEADER WITH CAP



VIEW FOR HEADER WITH  
ONLY DUAL SLOTS



RECOMMENDED PCB LAYOUT

## NOTES:

### 1. MATERIALS:

HOUSING: 30% GF, NYLON, UL94V-0, COLOR: BLACK

PIN: 0.50MM SQ PHOSPHOR BRONZE

### 2. FINISHES: REFER TO PLATING OPTIONS

### 3. PRODUCT SPECIFICATION: PS-87831-027

### 4. PACKAGING SPECIFICATION:

TUBE: PK-87831-001, TAPE AND REEL: PK-87831-300

### 5. MATES WITH: A. MOLEX CRIMP RECEPTACLE HOUSING: 51110 SERIES

AND CRIMP TERMINAL: 50394 SERIES

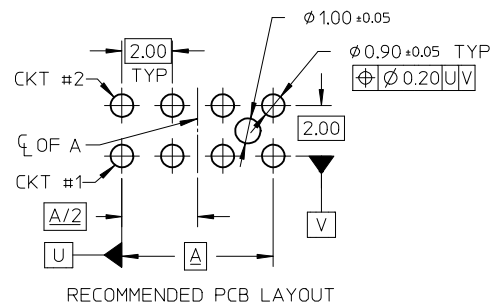
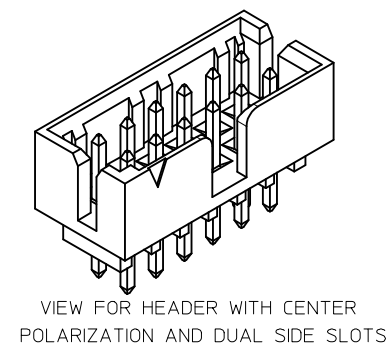
B. MOLEX 2MM MILLIGRID DUAL ROW IDT: 87568 SERIES

C. MOLEX 2MM MILLIGRID DUAL ROW RECEPTACLE:

79107 (GOLD PLATED), 78787 (TIN PLATED)

|                                                                                                                     |             |                                                                                                                           |                                                            |       |                                                                                                                                  |                     |                    |                                                                           |                           |  |  |  |
|---------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|---------------------------------------------------------------------------|---------------------------|--|--|--|
| RELEASED<br>EC NO: S2015-1188<br>DRAWN:GEMARLY<br>CHKD:CGOH<br>APPR:KHLIM<br>2015/04/15<br>2015/06/29<br>2015/06/29 | DESCRIPTION | QUALITY<br>SYMBOLS<br><div><div>F<sub>A</sub></div>=0<br/><div>F<sub>C</sub></div>=0<br/><div>F<sub>P</sub></div>=0</div> | GENERAL TOLERANCES<br>(UNLESS SPECIFIED)                   |       | DIMENSION STYLE<br>MM ONLY                                                                                                       |                     | SCALE<br>NTS       | DESIGN UNITS<br>METRIC                                                    | THIRD ANGLE<br>PROJECTION |  |  |  |
|                                                                                                                     |             |                                                                                                                           |                                                            | mm    | INCH                                                                                                                             | DRAWN BY<br>GEMARLY | DATE<br>2015/04/15 | TITLE<br>MILLIGRID<br>2MM PITCH, THROUGH HOLE<br>VERTICAL SHROUDED HEADER |                           |  |  |  |
|                                                                                                                     |             |                                                                                                                           | 4 PLACES                                                   | ±---  | ±---                                                                                                                             | CHECKED BY          | DATE               |                                                                           |                           |  |  |  |
|                                                                                                                     |             |                                                                                                                           | 3 PLACES                                                   | ±---  | ±---                                                                                                                             | APPROVED BY         | DATE               | molex                                                                     |                           |  |  |  |
|                                                                                                                     |             |                                                                                                                           | 2 PLACES                                                   | ±0.20 | ±---                                                                                                                             | KHLIM               | 2015/06/29         |                                                                           |                           |  |  |  |
| 1 PLACE                                                                                                             | ±---        | ±---                                                                                                                      | MATERIAL NO.                                               |       | DOCUMENT NO.                                                                                                                     |                     | SHEET NO.          |                                                                           |                           |  |  |  |
|                                                                                                                     |             |                                                                                                                           | ANGULAR ± 3 °                                              |       | SEE TABLE                                                                                                                        |                     | SD-87831-0001      |                                                                           | 4 OF 13                   |  |  |  |
| A                                                                                                                   | REV         |                                                                                                                           | DRAFT WHERE APPLICABLE<br>MUST REMAIN<br>WITHIN DIMENSIONS |       | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX<br>INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |                     |                    |                                                                           |                           |  |  |  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 10          | 9                                  | 8                               | 7                              | 6                  | 5              | 4      | 3          | 2      | 1                      |     |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           |      |                                                                                                                                                            |   |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------|---------------------------------|--------------------------------|--------------------|----------------|--------|------------|--------|------------------------|-----|-----------------------------------------------------------------------------------------------------------------|------|------|-------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------|---|--------------|------------------------|--------------------------------------------------------------------------------------------------------|-----|-------------------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------|-----------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 6 CIRCUITS  |                                    |                                 |                                |                    |                |        |            |        |                        |     |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           |      |                                                                                                                                                            |   |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
| F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | CKT<br>SIZE | ASSY P/N<br>WITHOUT CAP<br>IN TUBE | ASSY P/N<br>WITH CAP<br>IN TUBE | ASSY P/N<br>WITH CAP<br>IN T&R | PLATING<br>OPTIONS | FRICTION LOCKS |        | SIDE SLOTS |        | CENTER<br>POLARIZATION | PEG | DIMENSION                                                                                                       |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           | F    |                                                                                                                                                            |   |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                    |                                 |                                |                    | DUAL           | CENTER | DUAL       | SINGLE |                        |     | A                                                                                                               | B    | C    | D           | E                                                                                 | F                                                                                                                                                                                                                                                         |      | G                                                                                                                                                          | H |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
| E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 6           | 87831-0619                         | N.A                             | N.A                            | 1                  | N.A            | N.A    | YES        | N.A    | N.A                    | N.A | 4.00                                                                                                            | 6.85 | 8.65 | 7.00        | N.A                                                                               | N.A                                                                                                                                                                                                                                                       | 2.50 | 3.60±0.20                                                                                                                                                  | E |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | 87831-0620                         | N.A                             | N.A                            | 2                  |                |        |            |        |                        |     |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           |      |                                                                                                                                                            |   |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | 87831-0621                         | N.A                             | N.A                            | 3                  |                |        |            |        |                        |     |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           |      |                                                                                                                                                            |   |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | 87831-0636                         | N.A                             | N.A                            | 4                  |                |        |            |        |                        |     |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           |      |                                                                                                                                                            |   |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | 87831-0628                         | N.A                             | N.A                            | 2                  | N.A            | N.A    | YES        | N.A    | N.A                    | YES |                                                                                                                 |      |      |             |                                                                                   | N.A                                                                                                                                                                                                                                                       | 2.50 |                                                                                                                                                            |   |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | 87831-0629                         | N.A                             | N.A                            | 3                  |                |        |            |        |                        |     |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           |      |                                                                                                                                                            |   |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | 87831-0641                         | N.A                             | N.A                            | 2                  |                |        |            |        |                        |     |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           |      |                                                                                                                                                            |   |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | 87831-0642                         | N.A                             | 87831-5552                     | 3                  | N.A            | YES    | YES        | N.A    | N.A                    | N.A |                                                                                                                 |      |      |             |                                                                                   | N.A                                                                                                                                                                                                                                                       | 2.50 |                                                                                                                                                            |   |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | 87831-5241                         | N.A                             | N.A                            | 2                  |                |        |            |        |                        |     |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           |      |                                                                                                                                                            |   | N.A          | YES                    | YES                                                                                                    | N.A | N.A                           | N.A                  | 3.50                                                                                                                             |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | 87831-5242                         | N.A                             | N.A                            | 3                  |                |        |            |        |                        |     |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           |      |                                                                                                                                                            |   |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
| D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             | 87831-6241                         | N.A                             | N.A                            | 2                  | N.A            | YES    | YES        | N.A    | N.A                    | N.A | 4.00                                                                                                            | 6.85 | 8.65 | 7.00        | N.A                                                                               | 2.00                                                                                                                                                                                                                                                      | 2.80 | 3.60 <sup>+0.15</sup> <sub>-0.10</sub>                                                                                                                     | D |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | 87831-6242                         | N.A                             | N.A                            | 3                  |                |        |            |        |                        |     |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           |      |                                                                                                                                                            |   |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | 87831-0643                         | N.A                             | N.A                            | 2                  | N.A            | YES    | N.A        | YES    | N.A                    | N.A |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           |      |                                                                                                                                                            |   | N.A          | 2.50                   |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | 87831-0644                         | N.A                             | N.A                            | 3                  |                |        |            |        |                        |     |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           |      |                                                                                                                                                            |   |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | 87831-0645                         | N.A                             | N.A                            | 2                  | N.A            | YES    | N.A        | YES    | N.A                    | YES |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           |      |                                                                                                                                                            |   | 2.50         |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | 87831-0646                         | N.A                             | N.A                            | 3                  |                |        |            |        |                        |     |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           |      |                                                                                                                                                            |   |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | 87831-0632                         | N.A                             | N.A                            | 2                  | N.A            | YES    | YES        | N.A    | N.A                    | YES |                                                                                                                 |      |      |             |                                                                                   | 2.50                                                                                                                                                                                                                                                      |      |                                                                                                                                                            |   |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | 87831-5119                         | N.A                             | N.A                            | 1                  |                |        |            |        |                        |     |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           | N.A  |                                                                                                                                                            |   | N.A          | YES                    | N.A                                                                                                    | YES | N.A                           | N.A                  | 2.50                                                                                                                             | 3.60±0.20 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | C                                  |                                 |                                |                    |                |        |            |        |                        |     |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           |      |                                                                                                                                                            |   |              |                        |                                                                                                        | C   |                               |                      |                                                                                                                                  |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | B                                  |                                 |                                |                    |                |        |            |        |                        |     |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           |      |                                                                                                                                                            |   |              |                        |                                                                                                        | B   |                               |                      |                                                                                                                                  |           |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           | A    |                                                                                                                                                            |   |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |
| PLATING OPTIONS:<br>1 - 0.05-0.13um/2-5uin GOLD IN CONTACT AREA AND 1.88um/75uin MIN. MATTE TIN IN SOLDER TAIL AREA OVER 1.27um/50uin MIN. NICKEL OVERALL.<br>2 - 0.38um/15uin GOLD IN CONTACT AREA AND 1.88um/75uin MIN. MATTE TIN IN SOLDER TAIL AREA OVER 1.27um/50uin MIN. NICKEL OVERALL.<br>3 - 0.76um/30uin GOLD IN CONTACT AREA AND 1.88um/75uin MIN. MATTE TIN IN SOLDER TAIL AREA OVER 1.27um/50uin MIN. NICKEL OVERALL.<br>4 - 2.50um/100uin MIN. MATTE TIN OVER 1.25um/50uin MIN. NICKEL OVERALL. |             |                                    |                                 |                                |                    |                |        |            |        |                        |     | RELEASED<br>EC NO: S2015-1188<br>DRWN:GMENARLY 2015/04/15<br>CHKD:CGOH 2015/06/29<br>APPR:KHLIM 2015/06/29<br>A |      | REV  | DESCRIPTION | QUALITY<br>SYMBOLS<br>F <sub>A</sub> =0<br>F <sub>E</sub> =0<br>F <sub>P</sub> =0 | GENERAL TOLERANCES<br>(UNLESS SPECIFIED)<br>mm INCH<br>4 PLACES ± --- ± ---<br>3 PLACES ± --- ± ---<br>2 PLACES ± 0.20 ± ---<br>1 PLACE ± --- ± ---<br>0 PLACE ± --- ± ---<br>ANGULAR ± 3 °<br>DRAFT WHERE APPLICABLE<br>MUST REMAIN<br>WITHIN DIMENSIONS |      | DIMENSION STYLE<br>MM ONLY<br>DRAWN BY DATE<br>GMENARLY 2015/04/15<br>CHECKED BY DATE<br>APPROVED BY DATE<br>KHLIM 2015/06/29<br>MATERIAL NO.<br>SEE TABLE |   | SCALE<br>NTS | DESIGN UNITS<br>METRIC | THIRD ANGLE<br>PROJECTION<br>MILLIGRID<br>2MM PITCH, THROUGH HOLE<br>VERTICAL SHROUDED HEADER<br>molex |     | DOCUMENT NO.<br>SD-87831-0001 | SHEET NO.<br>5 OF 13 | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX<br>INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |           |
| fb_frame_A3_P_AM_T<br>Rev. G 2012/01/11                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 9           | 8                                  | 7                               | 6                              | 5                  | 4              | 3      | 2          | 1      |                        |     |                                                                                                                 |      |      |             |                                                                                   |                                                                                                                                                                                                                                                           |      |                                                                                                                                                            |   |              |                        |                                                                                                        |     |                               |                      |                                                                                                                                  |           |

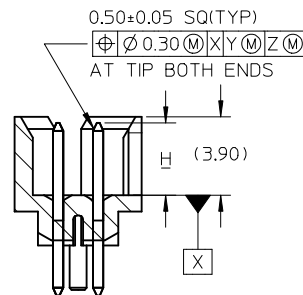
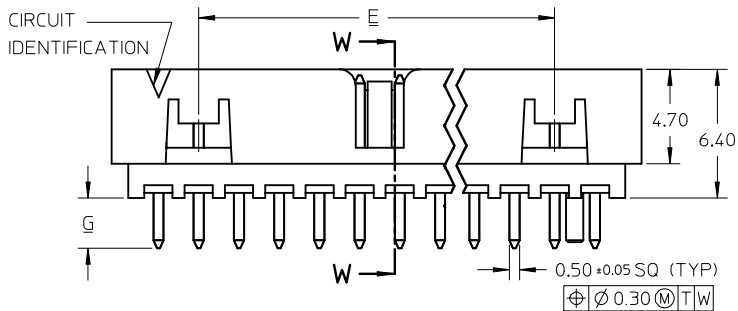
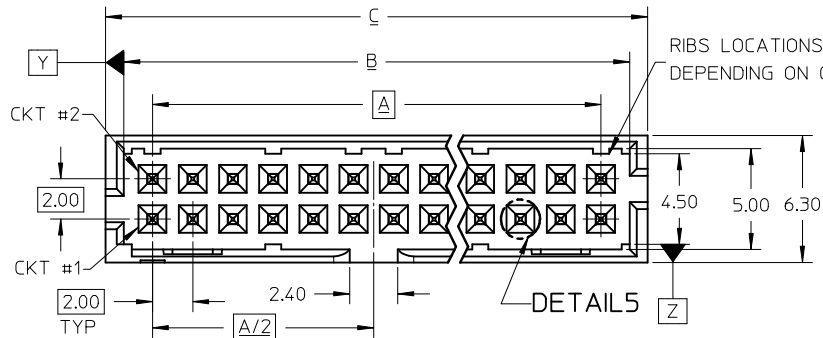


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Rev. G 2012/01/11

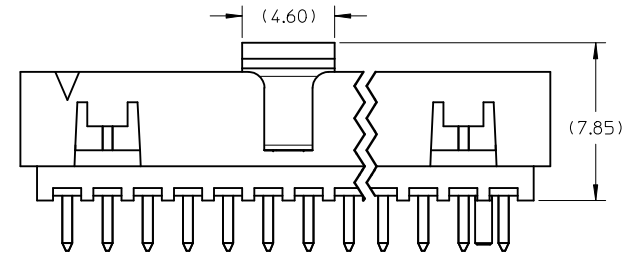
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|-----|-------------|------------------------------------|---------------------------------|--------------------------------|--------------------|----------------|--------|------------|--------|------------------------|-----|-----------|------|-------|-------|------|------|------|----------------------------------------|----------------------------------------|------|------|------|------|------|------|------|------|
|     | 10          | 9                                  | 8                               | 7                              | 6                  | 5              | 4      | 3          | 2      | 1                      |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     | 8 CIRCUITS  |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
| F   | CKT<br>SIZE | ASSY P/N<br>WITHOUT CAP<br>IN TUBE | ASSY P/N<br>WITH CAP<br>IN TUBE | ASSY P/N<br>WITH CAP<br>IN T&R | PLATING<br>OPTIONS | FRICTION LOCKS |        | SIDE SLOTS |        | CENTER<br>POLARIZATION | PEG | DIMENSION |      |       |       |      |      | F    |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    | DUAL           | CENTER | DUAL       | SINGLE |                        |     | A         | B    | C     | D     | E    | F    |      | G                                      | H                                      |      |      |      |      |      |      |      |      |
| E   | 8           | 87831-0819                         | N.A                             | N.A                            | 1                  | N.A            | N.A    | YES        | N.A    | YES                    | N.A | 6.00      | 8.85 | 10.65 | 9.00  | N.A  | N.A  | 2.50 | 3.60±0.20                              | E                                      |      |      |      |      |      |      |      |      |
|     |             | 87831-0820                         | N.A                             | N.A                            | 2                  |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             | 87831-0821                         | N.A                             | N.A                            | 3                  |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             | 87831-0836                         | N.A                             | N.A                            | 4                  |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             | 87831-0828                         | N.A                             | N.A                            | 2                  | N.A            | N.A    | YES        | N.A    | YES                    | YES |           |      |       |       |      | N.A  | N.A  |                                        |                                        | N.A  | N.A  | 2.50 |      |      |      |      |      |
|     |             | 87831-0829                         | N.A                             | N.A                            | 3                  |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             | 87831-0841                         | N.A                             | 87831-5551                     | 2                  | N.A            | YES    | YES        | N.A    | N.A                    | N.A |           |      |       |       |      | N.A  | N.A  |                                        |                                        | 3.00 |      |      | 2.50 |      |      |      |      |
|     |             | 87831-0842                         | N.A                             | N.A                            | 3                  |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             | 87831-5441                         | N.A                             | N.A                            | 2                  | N.A            | YES    | YES        | N.A    | N.A                    | N.A |           |      |       |       |      | N.A  | N.A  |                                        |                                        | 3.00 | 3.50 |      |      |      |      |      |      |
|     |             | 87831-5442                         | N.A                             | N.A                            | 3                  |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
| N.A | 87831-5541  | N.A                                | 2                               | N.A                            | YES                | YES            | N.A    | N.A        | N.A    | N.A                    | N.A | 3.00      | 2.80 |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
| N.A | 87831-5542  | N.A                                | 3                               |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
| D   |             | 87831-5741                         | N.A                             | N.A                            | 2                  | N.A            | YES    | YES        | N.A    | N.A                    | N.A | 6.00      |      | 8.85  | 10.65 | 9.00 | N.A  | 3.00 | 4.70                                   | 3.60 <sup>+0.15</sup> <sub>-0.10</sub> | D    |      |      |      |      |      |      |      |
|     |             | 87831-5742                         | N.A                             | N.A                            | 3                  |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             | 87831-0832                         | N.A                             | N.A                            | 2                  | N.A            | YES    | YES        | N.A    | N.A                    | YES |           | N.A  |       |       |      |      |      |                                        |                                        |      | N.A  | N.A  | N.A  | N.A  | 3.00 | 2.50 |      |
|     |             | 87831-0843                         | N.A                             | N.A                            | 2                  |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             | 87831-0844                         | N.A                             | N.A                            | 3                  | N.A            | YES    | N.A        | YES    | N.A                    | N.A |           | N.A  |       |       |      |      |      | N.A                                    |                                        |      | N.A  | N.A  | N.A  | 3.00 | 2.50 |      |      |
|     |             | 87831-0845                         | N.A                             | N.A                            | 2                  |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             | 87831-0846                         | N.A                             | N.A                            | 3                  | N.A            | YES    | N.A        | YES    | N.A                    | N.A |           | YES  |       |       |      |      |      | N.A                                    |                                        |      | N.A  | N.A  | N.A  | N.A  |      | 3.00 | 2.50 |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
| C   |             |                                    |                                 |                                |                    |                |        |            |        |                        |     | 6.00      | 8.85 | 10.65 | 9.00  | N.A  | 3.00 | 2.50 | 3.60 <sup>+0.15</sup> <sub>-0.10</sub> | C                                      |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
| B   |             |                                    |                                 |                                |                    |                |        |            |        |                        |     | 6.00      | 8.85 | 10.65 | 9.00  | N.A  | 3.00 | 2.50 | 3.60 <sup>+0.15</sup> <sub>-0.10</sub> | B                                      |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
| A   |             |                                    |                                 |                                |                    |                |        |            |        |                        |     | 6.00      | 8.85 | 10.65 | 9.00  | N.A  | 3.00 | 2.50 | 3.60 <sup>+0.15</sup> <sub>-0.10</sub> | A                                      |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
|     |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |
| </  |             |                                    |                                 |                                |                    |                |        |            |        |                        |     |           |      |       |       |      |      |      |                                        |                                        |      |      |      |      |      |      |      |      |

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                    |                                 |                                |                    |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------------|--------------------------------|--------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-----------|-------|-------|-------|-----|------|------|----------------------------------------|---|-------|-------|-------|-------|-----|-----|------|-----------|-----|
| 10                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 9                                  |                                 | 8                              |                    | 7                                                                                                       |                                         | 6                                                                                                                                                                                                                                                         |                                                                                                                                                              | 5                                                                                                                                                                                         |                                                                                                                                  | 4         |       | 3     |       | 2   |      | 1    |                                        |   |       |       |       |       |     |     |      |           |     |
| 10 TO 12 CIRCUITS |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                    |                                 |                                |                    |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
| F                 | CKT<br>SIZE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ASSY P/N<br>WITHOUT CAP<br>IN TUBE | ASSY P/N<br>WITH CAP<br>IN TUBE | ASSY P/N<br>WITH CAP<br>IN T&R | PLATING<br>OPTIONS | FRICTION LOCKS                                                                                          |                                         | SIDE SLOTS                                                                                                                                                                                                                                                |                                                                                                                                                              | CENTER<br>POLARIZATION                                                                                                                                                                    | PEG                                                                                                                              | DIMENSION |       |       |       |     |      |      | F                                      |   |       |       |       |       |     |     |      |           |     |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                    |                                 |                                |                    | DUAL                                                                                                    | CENTER                                  | DUAL                                                                                                                                                                                                                                                      | SINGLE                                                                                                                                                       |                                                                                                                                                                                           |                                                                                                                                  | A         | B     | C     | D     | E   | F    | G    |                                        | H |       |       |       |       |     |     |      |           |     |
| E                 | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 87831-1019                         | N.A                             | N.A                            | 1                  | N.A                                                                                                     | N.A                                     | YES                                                                                                                                                                                                                                                       | N.A                                                                                                                                                          | YES                                                                                                                                                                                       | N.A                                                                                                                              | 8.00      | 10.85 | 12.65 | 11.00 | N.A | N.A  | 2.50 | 3.60±0.20                              | E |       |       |       |       |     |     |      |           |     |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 87831-1020                         | N.A                             | N.A                            | 2                  |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 87831-1021                         | N.A                             | N.A                            | 3                  |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 87831-1036                         | N.A                             | N.A                            | 4                  |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 87831-1010                         | N.A                             | N.A                            | 2                  | N.A                                                                                                     | N.A                                     | YES                                                                                                                                                                                                                                                       | N.A                                                                                                                                                          | YES                                                                                                                                                                                       | N.A                                                                                                                              |           |       |       |       |     |      | 3.50 |                                        |   |       |       |       |       |     |     |      |           |     |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 87831-1011                         | N.A                             | N.A                            | 3                  |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 87831-1028                         | N.A                             | N.A                            | 2                  | N.A                                                                                                     | N.A                                     | YES                                                                                                                                                                                                                                                       | N.A                                                                                                                                                          | YES                                                                                                                                                                                       | YES                                                                                                                              |           |       |       |       |     | 2.50 |      |                                        |   |       |       |       |       |     |     |      |           |     |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 87831-1029                         | N.A                             | N.A                            | 3                  |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 87831-1035                         | N.A                             | N.A                            | 3                  | N.A                                                                                                     | N.A                                     | YES                                                                                                                                                                                                                                                       | N.A                                                                                                                                                          | YES                                                                                                                                                                                       | YES                                                                                                                              |           |       |       |       |     | 3.50 |      |                                        |   |       |       |       |       |     |     |      |           |     |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 87831-1041                         | N.A                             | N.A                            | 2                  |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
| D                 | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 87831-1042                         | N.A                             | 87831-5553                     | 3                  | N.A                                                                                                     | YES                                     | YES                                                                                                                                                                                                                                                       | N.A                                                                                                                                                          | N.A                                                                                                                                                                                       | N.A                                                                                                                              | 10.00     | 12.85 | 14.65 | 13.00 | N.A | 4.00 | 2.50 | 3.60 <sup>+0.15</sup> <sub>-0.10</sub> | D |       |       |       |       |     |     |      |           |     |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 87831-1032                         | N.A                             | N.A                            | 2                  |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   | N.A   | YES   | YES   | N.A   | N.A | YES | 2.50 |           |     |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 87831-1043                         | N.A                             | N.A                            | 2                  |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      | N.A       | YES |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 87831-1044                         | N.A                             | N.A                            | 3                  |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   | N.A   | YES   | N.A   | YES   | N.A | N.A | 2.50 |           |     |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 87831-1045                         | N.A                             | N.A                            | 2                  | N.A                                                                                                     | YES                                     | N.A                                                                                                                                                                                                                                                       | YES                                                                                                                                                          | N.A                                                                                                                                                                                       | YES                                                                                                                              |           |       |       |       |     |      | 2.50 |                                        |   |       |       |       |       |     |     |      |           |     |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 87831-1046                         | N.A                             | N.A                            | 3                  |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | C                                  | 12                              | 87831-1219                     | N.A                | N.A                                                                                                     | 1                                       | N.A                                                                                                                                                                                                                                                       | N.A                                                                                                                                                          | YES                                                                                                                                                                                       | N.A                                                                                                                              |           |       |       |       |     | YES  | N.A  |                                        |   | 10.00 | 12.85 | 14.65 | 13.00 | N.A | N.A | 2.50 | 3.60±0.20 | C   |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                    |                                 | 87831-1220                     | N.A                | N.A                                                                                                     | 2                                       |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                    |                                 | 87831-1221                     | N.A                | N.A                                                                                                     | 3                                       |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                    |                                 | 87831-1236                     | N.A                | N.A                                                                                                     | 4                                       |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
| 87831-1228        | N.A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                    |                                 | N.A                            | 2                  | N.A                                                                                                     | N.A                                     | YES                                                                                                                                                                                                                                                       | N.A                                                                                                                                                          | YES                                                                                                                                                                                       | YES                                                                                                                              | 2.50      |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
| 87831-1229        | N.A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                    |                                 | N.A                            | 3                  |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
| 87831-1241        | N.A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                    |                                 | N.A                            | 2                  | N.A                                                                                                     | YES                                     | YES                                                                                                                                                                                                                                                       | N.A                                                                                                                                                          | N.A                                                                                                                                                                                       | N.A                                                                                                                              | 2.50      |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
| 87831-1242        | N.A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                    |                                 | N.A                            | 3                  |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
| 87831-1255        | 87831-1256                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                    |                                 | N.A                            | 2                  | N.A                                                                                                     | YES                                     | YES                                                                                                                                                                                                                                                       | N.A                                                                                                                                                          | N.A                                                                                                                                                                                       | N.A                                                                                                                              | 2.50      |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
| 87831-1232        | N.A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                    |                                 | N.A                            | 2                  |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           | N.A   | YES   | YES   | N.A | N.A  | YES  | 2.50                                   |   |       |       |       |       |     |     |      |           |     |
| 87831-1243        | N.A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | N.A                                | 2                               | N.A                            | YES                | N.A                                                                                                     | YES                                     | N.A                                                                                                                                                                                                                                                       | N.A                                                                                                                                                          | 2.50                                                                                                                                                                                      |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
| 87831-1244        | N.A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | N.A                                | 3                               |                                |                    |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           | N.A                                                                                                                              | YES       | N.A   | YES   | N.A   | N.A | 2.50 |      |                                        |   |       |       |       |       |     |     |      |           |     |
| 87831-1245        | N.A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | N.A                                | 2                               | N.A                            | YES                | N.A                                                                                                     | YES                                     | N.A                                                                                                                                                                                                                                                       | YES                                                                                                                                                          | 2.50                                                                                                                                                                                      |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
| 87831-1246        | N.A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | N.A                                | 3                               |                                |                    |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
| B                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                    |                                 |                                |                    |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
| A                 | PLATING OPTIONS:<br>1 - 0.05-0.13um/2-5uin GOLD IN CONTACT AREA AND<br>1.88um/75uin MIN. MATTE TIN IN SOLDER TAIL AREA OVER<br>1.27um/50uin MIN. NICKEL OVERALL.<br>2 - 0.38um/15uin GOLD IN CONTACT AREA AND<br>1.88um/75uin MIN. MATTE TIN IN SOLDER TAIL AREA OVER<br>1.27um/50uin MIN. NICKEL OVERALL.<br>3 - 0.76um/30uin GOLD IN CONTACT AREA AND<br>1.88um/75uin MIN. MATTE TIN IN SOLDER TAIL AREA OVER<br>1.27um/50uin MIN. NICKEL OVERALL.<br>4 - 2.50um/100uin MIN. MATTE TIN OVER 1.25um/50uin MIN. NICKEL OVERALL. |                                    |                                 |                                |                    | RELEASED<br>EC NO: S2015-1188<br>DRWN:GMENARLY 2015/06/29<br>CHKD:CGOH<br>APPR:KHL IM 2015/06/29<br>REV | QUALITY<br>SYMBOLS<br>F=0<br>F=0<br>F=0 | GENERAL TOLERANCES<br>(UNLESS SPECIFIED)<br>mm INCH<br>4 PLACES ± --- ± ---<br>3 PLACES ± --- ± ---<br>2 PLACES ± 0.20 ± ---<br>1 PLACE ± --- ± ---<br>0 PLACE ± --- ± ---<br>ANGULAR ± 3 °<br>DRAFT WHERE APPLICABLE<br>MUST REMAIN<br>WITHIN DIMENSIONS | DIMENSION STYLE<br>MM ONLY<br>DRAWN BY DATE<br>GMENARLY 2015/04/15<br>CHECKED BY DATE<br>APPROVED BY DATE<br>KHL IM 2015/06/29<br>MATERIAL NO.<br>SIZE<br>A3 | SCALE<br>NTS<br>DESIGN UNITS<br>METRIC<br>THIRD ANGLE<br>PROJECTION<br>MILLIGRID<br>2MM PITCH, THROUGH HOLE<br>VERTICAL SHROUDED HEADER<br>molex<br>SD-87831-0001<br>SHEET NO.<br>8 OF 13 | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX<br>INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
|                   | tb_frame_A3_P_AM.T<br>Rev. G 2012/01/11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                    |                                 |                                |                    |                                                                                                         |                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                              |                                                                                                                                                                                           |                                                                                                                                  |           |       |       |       |     |      |      |                                        |   |       |       |       |       |     |     |      |           |     |
| 9                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 8                                  |                                 | 7                              |                    | 6                                                                                                       |                                         | 5                                                                                                                                                                                                                                                         |                                                                                                                                                              | 4                                                                                                                                                                                         |                                                                                                                                  | 3         |       | 2     |       | 1   |      |      |                                        |   |       |       |       |       |     |     |      |           |     |

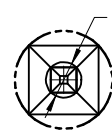
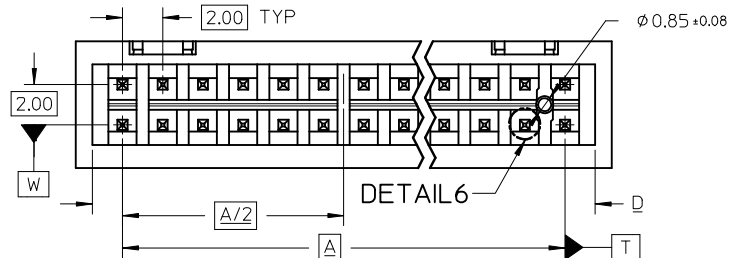
# 14 TO 50 CIRCUITS



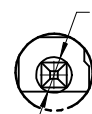
SECTION W-W



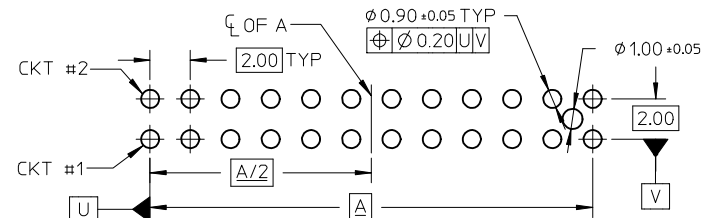
VIEW FOR HEADER WITH CAP



DETAIL5



DETAIL6



RECOMMENDED PCB LAYOUT

## NOTES:

- MATERIALS:  
HOUSING: 30% GF, NYLON, UL94V-0, COLOR: BLACK  
PIN: 0.50MM SQ PHOSPHOR BRONZE
- FINISHES: REFER TO PLATING OPTIONS
- PRODUCT SPECIFICATION: PS-87831-027
- PACKAGING SPECIFICATION:  
TUBE: PK-87831-001, TAPE AND REEL: PK-87831-300
- MATES WITH: A. MOLEX CRIMP RECEPTACLE HOUSING: 51110 SERIES AND CRIMP TERMINAL: 50394 SERIES  
B. MOLEX 2MM MILLIGRID DUAL ROW IDT: 87568 SERIES  
C. MOLEX 2MM MILLIGRID DUAL ROW RECEPTACLE: 79107 (GOLD PLATED), 78787 (TIN PLATED)

|                                                                                                                                                                                          |             |                                                                                                                                 |                                       |  |                                                            |                    |                                                                           |                                                              |                                                                                                                                  |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|--|------------------------------------------------------------|--------------------|---------------------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| <div>RELEASED</div> <div>EC NO: S2015-1188</div> <div>DRWNG:GMENARLY</div> <div>CHKD:CGOH</div> <div>APPR:KHL IM</div> <div>2015/04/15</div> <div>2015/06/29</div> <div>2015/06/29</div> | DESCRIPTION | <div>QUALITY SYMBOLS</div> <div><div><div>F<sub>A</sub>=0</div><div>F<sub>G</sub>=0</div><div>F<sub>P</sub>=0</div></div></div> | GENERAL TOLERANCES (UNLESS SPECIFIED) |  | DIMENSION STYLE<br>MM ONLY                                 |                    | SCALE<br>NTS                                                              | DESIGN UNITS<br>METRIC                                       | <div><div><div></div><div></div></div>THIRD ANGLE PROJECTION</div>                                                               |  |  |  |  |
|                                                                                                                                                                                          |             |                                                                                                                                 |                                       |  | DRAWN BY<br>GMENARLY                                       | DATE<br>2015/04/15 | TITLE<br>MILLIGRID<br>2MM PITCH, THROUGH HOLE<br>VERTICAL SHROUDED HEADER |                                                              |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                          |             |                                                                                                                                 |                                       |  | CHECKED BY                                                 | DATE               |                                                                           |                                                              |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                          |             |                                                                                                                                 |                                       |  | APPROVED BY<br>KHL IM                                      |                    | DATE<br>2015/06/29                                                        | <div><div><div></div><div></div></div><div>molex</div></div> |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                          |             |                                                                                                                                 |                                       |  | MATERIAL NO.                                               |                    | DOCUMENT NO.                                                              |                                                              |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                          |             |                                                                                                                                 |                                       |  | ANGULAR ± 3 °                                              |                    | SEE TABLE                                                                 |                                                              | SD-87831-0001                                                                                                                    |  |  |  |  |
|                                                                                                                                                                                          |             |                                                                                                                                 |                                       |  | DRAFT WHERE APPLICABLE<br>MUST REMAIN<br>WITHIN DIMENSIONS |                    | SIZE<br>A3                                                                |                                                              | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX<br>INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |  |  |  |  |

|                        |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|------------------------|-----------------------|------------------------------------|---------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------|------------------------------------------|------------------------|----------------------------|-----------|--------------|------------------------|---------------------------|-------|----------------------------------------------------------------------------------|---------------|-----------------------|---|---|
|                        | 10                    | 9                                  | 8                               | 7                              | 6                                                                                                                                | 5                                                                              | 4                                                            | 3                                       | 2                                        | 1                      |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 14 TO 20 CIRCUITS      |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| F                      | CKT<br>SIZE           | ASSY P/N<br>WITHOUT CAP<br>IN TUBE | ASSY P/N<br>WITH CAP<br>IN TUBE | ASSY P/N<br>WITH CAP<br>IN T&R | PLATING<br>OPTIONS                                                                                                               | FRICTION LOCKS                                                                 |                                                              | SIDE SLOTS                              |                                          | CENTER<br>POLARIZATION | PEG                        | DIMENSION |              |                        |                           |       |                                                                                  | F             |                       |   |   |
|                        |                       |                                    |                                 |                                |                                                                                                                                  | DUAL                                                                           | CENTER                                                       | DUAL                                    | SINGLE                                   |                        |                            | A         | B            | C                      | D                         | E     | F                                                                                |               | G                     | H |   |
| E                      | 14                    | 87831-1419                         | N.A                             | N.A                            | 1                                                                                                                                | YES                                                                            | N.A                                                          | YES                                     | N.A                                      | YES                    | N.A                        | 12.00     | 14.85        | 16.65                  | 15.00                     | 8.00  | N.A                                                                              | 2.50          | 3.60±0.20             |   |   |
|                        |                       | 87831-1420                         | N.A                             | 87831-5554                     | 2                                                                                                                                |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        |                       | 87831-1421                         | N.A                             | N.A                            | 3                                                                                                                                |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        |                       | 87831-1436                         | N.A                             | N.A                            | 4                                                                                                                                |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        |                       | 87831-1428                         | N.A                             | N.A                            | 2                                                                                                                                | YES                                                                            | N.A                                                          | YES                                     | N.A                                      | YES                    | YES                        |           |              |                        |                           |       |                                                                                  | 2.50          |                       |   |   |
|                        |                       | 87831-1429                         | N.A                             | N.A                            | 3                                                                                                                                | YES                                                                            | N.A                                                          | YES                                     | N.A                                      | YES                    | YES                        |           |              |                        |                           |       |                                                                                  | 3.50          |                       |   |   |
|                        |                       | 87831-1435                         | N.A                             | N.A                            | 3                                                                                                                                | YES                                                                            | N.A                                                          | YES                                     | N.A                                      | YES                    | YES                        |           |              |                        |                           |       |                                                                                  | 3.50          |                       |   |   |
| D                      | 16                    | 87831-1619                         | N.A                             | N.A                            | 1                                                                                                                                | YES                                                                            | N.A                                                          | YES                                     | N.A                                      | YES                    | N.A                        | 14.00     | 16.85        | 18.65                  | 17.00                     | 10.00 | N.A                                                                              | 2.50          | 3.60±0.20             |   |   |
|                        |                       | 87831-1620                         | N.A                             | N.A                            | 2                                                                                                                                |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        |                       | 87831-1621                         | N.A                             | N.A                            | 3                                                                                                                                |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        |                       | 87831-1636                         | N.A                             | N.A                            | 4                                                                                                                                | YES                                                                            | N.A                                                          | YES                                     | N.A                                      | YES                    | YES                        |           |              |                        |                           |       |                                                                                  | 2.50          |                       |   |   |
|                        |                       | 87831-1628                         | N.A                             | N.A                            | 2                                                                                                                                | YES                                                                            | N.A                                                          | YES                                     | N.A                                      | YES                    | YES                        |           |              |                        |                           |       |                                                                                  | 3.50          |                       |   |   |
|                        |                       | 87831-1629                         | N.A                             | N.A                            | 3                                                                                                                                | YES                                                                            | N.A                                                          | YES                                     | N.A                                      | YES                    | YES                        |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        |                       | 87831-1635                         | N.A                             | N.A                            | 3                                                                                                                                | YES                                                                            | N.A                                                          | YES                                     | N.A                                      | YES                    | YES                        |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| C                      | 18                    | 87831-1819                         | N.A                             | N.A                            | 1                                                                                                                                | YES                                                                            | N.A                                                          | YES                                     | N.A                                      | YES                    | N.A                        | 16.00     | 18.85        | 20.65                  | 19.00                     | 12.00 | N.A                                                                              | 2.50          | 3.60±0.20             |   |   |
|                        |                       | 87831-1820                         | N.A                             | N.A                            | 2                                                                                                                                |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        |                       | 87831-1821                         | N.A                             | N.A                            | 3                                                                                                                                |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        |                       | 87831-1836                         | N.A                             | N.A                            | 4                                                                                                                                | YES                                                                            | N.A                                                          | YES                                     | N.A                                      | YES                    | YES                        |           |              |                        |                           |       |                                                                                  | 2.50          |                       |   |   |
|                        |                       | 87831-1828                         | N.A                             | N.A                            | 2                                                                                                                                | YES                                                                            | N.A                                                          | YES                                     | N.A                                      | YES                    | YES                        |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        |                       | 87831-1829                         | N.A                             | N.A                            | 3                                                                                                                                | YES                                                                            | N.A                                                          | YES                                     | N.A                                      | YES                    | YES                        |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| A                      | 20                    | 87831-2019                         | N.A                             | N.A                            | 1                                                                                                                                | YES                                                                            | N.A                                                          | YES                                     | N.A                                      | YES                    | N.A                        | 18.00     | 20.85        | 22.65                  | 21.00                     | 14.00 | N.A                                                                              | 2.50          | 3.60±0.20             |   |   |
|                        |                       | 87831-2020                         | N.A                             | N.A                            | 2                                                                                                                                |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        |                       | 87831-2021                         | N.A                             | N.A                            | 3                                                                                                                                |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        |                       | 87831-2036                         | N.A                             | N.A                            | 4                                                                                                                                | YES                                                                            | N.A                                                          | YES                                     | N.A                                      | YES                    | YES                        |           |              |                        |                           |       |                                                                                  | 2.50          |                       |   |   |
|                        |                       | 87831-2028                         | N.A                             | N.A                            | 2                                                                                                                                | YES                                                                            | N.A                                                          | YES                                     | N.A                                      | YES                    | YES                        |           |              |                        |                           |       |                                                                                  | 3.50          |                       |   |   |
|                        |                       | 87831-2029                         | N.A                             | N.A                            | 3                                                                                                                                | YES                                                                            | N.A                                                          | YES                                     | N.A                                      | YES                    | YES                        |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        |                       | 87831-2035                         | N.A                             | N.A                            | 3                                                                                                                                | YES                                                                            | N.A                                                          | YES                                     | N.A                                      | YES                    | YES                        |           |              |                        |                           |       |                                                                                  | 3.50          |                       |   |   |
| 87831-2010             | N.A                   | N.A                                | 2                               | YES                            | N.A                                                                                                                              | YES                                                                            | N.A                                                          | YES                                     | YES                                      |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 87831-2011             | N.A                   | N.A                                | 3                               | YES                            | N.A                                                                                                                              | YES                                                                            | N.A                                                          | YES                                     | YES                                      |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| B                      |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   | B |
| A                      | PLATING OPTIONS:      |                                    |                                 |                                |                                                                                                                                  | RELEASED<br>EC NO: SZ015-1188<br>DRWN:GEMARLY<br>CHKD:CGOH<br>APPR:KHL IM<br>A | REV<br>DESCRIPTION<br>2015/04/15<br>2015/06/29<br>2015/06/29 | QUALITY<br>SYMBOLS<br>F=0<br>F=0<br>F=0 | GENERAL TOLERANCES<br>(UNLESS SPECIFIED) |                        | DIMENSION STYLE<br>MM ONLY |           | SCALE<br>NTS | DESIGN UNITS<br>METRIC | THIRD ANGLE<br>PROJECTION |       | MILLIGRID<br>2MM PITCH, THROUGH HOLE<br>VERTICAL SHROUDED HEADER<br><b>molex</b> | SD-87831-0001 | SHEET NO.<br>10 OF 13 |   |   |
|                        | mm                    | INCH                               | DRAWN BY                        | DATE                           | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX<br>INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        |                       |                                    | GMENARLY                        | 2015/04/15                     |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        | 1 PLACE ± --- ± ---   |                                    | CHECKED BY                      | DATE                           | APPROVED BY                                                                                                                      |                                                                                |                                                              |                                         | DATE                                     | DOCUMENT NO.           |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        | 2 PLACES ± 0.20 ± --- |                                    | KHL IM                          |                                | 2015/06/29                                                                                                                       |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        | 3 PLACES ± --- ± ---  |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        | 4 PLACES ± --- ± ---  |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        | 5 PLACES ± --- ± ---  |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        | 6 PLACES ± --- ± ---  |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
|                        | 7 PLACES ± --- ± ---  |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 8 PLACES ± --- ± ---   |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 9 PLACES ± --- ± ---   |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 10 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 11 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 12 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 13 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 14 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 15 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 16 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 17 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 18 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 19 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 20 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 21 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 22 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 23 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 24 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 25 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 26 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 27 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 28 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 29 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 30 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 31 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 32 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 33 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 34 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 35 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 36 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 37 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 38 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 39 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 40 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 41 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 42 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 43 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 44 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 45 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 46 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 47 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 48 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 49 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 50 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 51 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 52 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 53 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 54 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 55 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 56 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 57 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 58 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 59 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 60 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 61 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 62 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 63 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 64 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 65 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 66 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 67 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 68 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 69 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 70 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 71 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 72 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 73 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 74 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 75 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 76 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 77 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 78 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 79 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 80 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 81 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 82 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 83 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 84 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 85 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 86 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 87 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 88 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 89 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 90 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 91 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 92 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 93 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 94 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 95 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 96 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 97 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 98 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 99 PLACES ± --- ± ---  |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 100 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 101 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 102 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 103 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 104 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 105 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 106 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 107 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 108 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 109 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 110 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 111 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 112 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 113 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 114 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 115 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 116 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 117 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 118 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 119 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 120 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 121 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 122 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 123 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 124 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 125 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 126 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 127 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 128 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 129 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 130 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 131 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 132 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 133 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 134 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 135 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 136 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 137 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 138 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 139 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 140 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 141 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 142 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 143 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 144 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 145 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 146 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 147 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 148 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 149 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 150 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 151 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 152 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 153 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 154 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 155 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 156 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 157 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 158 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 159 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 160 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 161 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 162 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 163 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 164 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 165 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 166 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 167 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 168 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 169 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 170 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 171 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 172 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 173 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 174 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 175 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 176 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 177 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 178 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 179 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 180 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 181 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 182 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 183 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 184 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 185 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 186 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |
| 187 PLACES ± --- ± --- |                       |                                    |                                 |                                |                                                                                                                                  |                                                                                |                                                              |                                         |                                          |                        |                            |           |              |                        |                           |       |                                                                                  |               |                       |   |   |

|                                                            |             |                                                                                                            |                                 |                                                                                                                                        |                    |                                                                                                                                                                                             |        |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
|------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------|--------|-------------------------------------------------------------------------|-----|------------------------|-------|---------------------------|-------|---------------------------------------------------------------------------|-------|-----------------------|-----------|------|-----------|--|
|                                                            |             | 10                                                                                                         |                                 | 9                                                                                                                                      |                    | 8                                                                                                                                                                                           |        | 7                                                                                                                                             |        | 6                                                                       |     | 5                      |       | 4                         |       | 3                                                                         |       | 2                     |           | 1    |           |  |
| 22 TO 30 CIRCUITS                                          |             |                                                                                                            |                                 |                                                                                                                                        |                    |                                                                                                                                                                                             |        |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
| F                                                          | CKT<br>SIZE | ASSY P/N<br>WITHOUT CAP<br>IN TUBE                                                                         | ASSY P/N<br>WITH CAP<br>IN TUBE | ASSY P/N<br>WITH CAP<br>IN T&R                                                                                                         | PLATING<br>OPTIONS | FRICTION LOCKS                                                                                                                                                                              |        | SIDE SLOTS                                                                                                                                    |        | CENTER<br>POLARIZATION                                                  | PEG | DIMENSION              |       |                           |       |                                                                           |       |                       |           | F    |           |  |
|                                                            |             |                                                                                                            |                                 |                                                                                                                                        |                    | DUAL                                                                                                                                                                                        | CENTER | DUAL                                                                                                                                          | SINGLE |                                                                         |     | A                      | B     | C                         | D     | E                                                                         | F     | G                     | H         |      |           |  |
|                                                            | 22          | 87831-2219                                                                                                 | N.A                             | N.A                                                                                                                                    | 1                  | YES                                                                                                                                                                                         | N.A    | YES                                                                                                                                           | N.A    | YES                                                                     | N.A | 20.00                  | 22.85 | 24.65                     | 23.00 | 16.00                                                                     | N.A   | 2.50                  | 3.60±0.20 |      |           |  |
|                                                            |             | 87831-2220                                                                                                 | N.A                             | N.A                                                                                                                                    | 2                  |                                                                                                                                                                                             |        |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
|                                                            |             | 87831-2221                                                                                                 | N.A                             | N.A                                                                                                                                    | 3                  |                                                                                                                                                                                             |        |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
|                                                            |             | 87831-2236                                                                                                 | N.A                             | N.A                                                                                                                                    | 4                  |                                                                                                                                                                                             |        |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
|                                                            |             | 87831-2228                                                                                                 | N.A                             | N.A                                                                                                                                    | 2                  |                                                                                                                                                                                             |        |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
|                                                            | 22          | 87831-2229                                                                                                 | N.A                             | N.A                                                                                                                                    | 3                  | YES                                                                                                                                                                                         | N.A    | YES                                                                                                                                           | N.A    | YES                                                                     | YES |                        |       |                           |       |                                                                           |       | 2.50                  |           |      |           |  |
|                                                            |             | E                                                                                                          | 24                              | 87831-2419                                                                                                                             | N.A                | N.A                                                                                                                                                                                         | 1      | YES                                                                                                                                           | N.A    | YES                                                                     | N.A | YES                    | N.A   | 22.00                     | 24.85 | 26.65                                                                     | 25.00 | 18.00                 | N.A       | 2.50 | 3.60±0.20 |  |
|                                                            |             |                                                                                                            |                                 | 87831-2420                                                                                                                             | N.A                | N.A                                                                                                                                                                                         | 2      |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
|                                                            |             |                                                                                                            |                                 | 87831-2421                                                                                                                             | N.A                | N.A                                                                                                                                                                                         | 3      |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
|                                                            |             |                                                                                                            |                                 | 87831-2436                                                                                                                             | N.A                | N.A                                                                                                                                                                                         | 4      |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
| 87831-2428                                                 | N.A         |                                                                                                            |                                 | N.A                                                                                                                                    | 2                  |                                                                                                                                                                                             |        |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
|                                                            | 24          | 87831-2429                                                                                                 | N.A                             | N.A                                                                                                                                    | 3                  | YES                                                                                                                                                                                         | N.A    | YES                                                                                                                                           | N.A    | YES                                                                     | YES |                        |       |                           |       |                                                                           |       | 2.50                  |           |      |           |  |
|                                                            |             | 87831-2435                                                                                                 | N.A                             | N.A                                                                                                                                    | 3                  | YES                                                                                                                                                                                         | N.A    | YES                                                                                                                                           | N.A    | YES                                                                     | YES |                        |       |                           |       |                                                                           |       | 3.50                  |           |      |           |  |
|                                                            |             | 87831-2410                                                                                                 | N.A                             | N.A                                                                                                                                    | 2                  | YES                                                                                                                                                                                         | N.A    | YES                                                                                                                                           | N.A    | YES                                                                     | N.A |                        |       |                           |       |                                                                           |       | 3.50                  |           |      |           |  |
|                                                            |             | D                                                                                                          | 26                              | 87831-2619                                                                                                                             | N.A                | N.A                                                                                                                                                                                         | 1      | YES                                                                                                                                           | N.A    | YES                                                                     | N.A | YES                    | N.A   | 24.00                     | 26.85 | 28.65                                                                     | 27.00 | 20.00                 | N.A       | 2.50 | 3.60±0.20 |  |
|                                                            |             |                                                                                                            |                                 | 87831-2620                                                                                                                             | N.A                | N.A                                                                                                                                                                                         | 2      |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
| 87831-2621                                                 | N.A         |                                                                                                            |                                 | N.A                                                                                                                                    | 3                  |                                                                                                                                                                                             |        |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
| 87831-2636                                                 | N.A         |                                                                                                            |                                 | N.A                                                                                                                                    | 4                  |                                                                                                                                                                                             |        |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
| 87831-2628                                                 | N.A         |                                                                                                            |                                 | N.A                                                                                                                                    | 2                  |                                                                                                                                                                                             |        |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
|                                                            | 26          | 87831-2629                                                                                                 | N.A                             | N.A                                                                                                                                    | 3                  | YES                                                                                                                                                                                         | N.A    | YES                                                                                                                                           | N.A    | YES                                                                     | YES |                        |       |                           |       |                                                                           |       | 2.50                  |           |      |           |  |
|                                                            |             | 87831-2610                                                                                                 | N.A                             | N.A                                                                                                                                    | 2                  | YES                                                                                                                                                                                         | N.A    | YES                                                                                                                                           | N.A    | YES                                                                     | N.A |                        |       |                           |       |                                                                           |       | 3.50                  |           |      |           |  |
|                                                            |             | C                                                                                                          | 28                              | 87831-2819                                                                                                                             | N.A                | N.A                                                                                                                                                                                         | 1      | YES                                                                                                                                           | N.A    | YES                                                                     | N.A | YES                    | N.A   | 26.00                     | 28.85 | 30.65                                                                     | 29.00 | 22.00                 | N.A       | 2.50 | 3.60±0.20 |  |
|                                                            |             |                                                                                                            |                                 | 87831-2820                                                                                                                             | N.A                | N.A                                                                                                                                                                                         | 2      |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
|                                                            |             |                                                                                                            |                                 | 87831-2821                                                                                                                             | N.A                | N.A                                                                                                                                                                                         | 3      |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
| 87831-2836                                                 | N.A         |                                                                                                            |                                 | N.A                                                                                                                                    | 4                  |                                                                                                                                                                                             |        |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
| 87831-2828                                                 | N.A         |                                                                                                            |                                 | N.A                                                                                                                                    | 2                  |                                                                                                                                                                                             |        |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
|                                                            | 28          | 87831-2829                                                                                                 | N.A                             | N.A                                                                                                                                    | 3                  | YES                                                                                                                                                                                         | N.A    | YES                                                                                                                                           | N.A    | YES                                                                     | YES |                        |       |                           |       |                                                                           |       | 2.50                  |           |      |           |  |
|                                                            |             | B                                                                                                          | 30                              | 87831-3019                                                                                                                             | N.A                | N.A                                                                                                                                                                                         | 1      | YES                                                                                                                                           | N.A    | YES                                                                     | N.A | YES                    | N.A   | 28.00                     | 30.85 | 32.65                                                                     | 31.00 | 24.00                 | N.A       | 2.50 | 3.60±0.20 |  |
|                                                            |             |                                                                                                            |                                 | 87831-3020                                                                                                                             | N.A                | N.A                                                                                                                                                                                         | 2      |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
|                                                            |             |                                                                                                            |                                 | 87831-3021                                                                                                                             | N.A                | N.A                                                                                                                                                                                         | 3      |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
|                                                            |             |                                                                                                            |                                 | 87831-3036                                                                                                                             | N.A                | N.A                                                                                                                                                                                         | 4      |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
| 87831-3028                                                 | N.A         |                                                                                                            |                                 | N.A                                                                                                                                    | 2                  |                                                                                                                                                                                             |        |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
|                                                            | 30          | 87831-3029                                                                                                 | N.A                             | N.A                                                                                                                                    | 3                  | YES                                                                                                                                                                                         | N.A    | YES                                                                                                                                           | N.A    | YES                                                                     | YES |                        |       |                           |       |                                                                           |       | 2.50                  |           |      |           |  |
|                                                            |             | 87831-3035                                                                                                 | N.A                             | N.A                                                                                                                                    | 3                  | YES                                                                                                                                                                                         | N.A    | YES                                                                                                                                           | N.A    | YES                                                                     | YES |                        |       |                           |       |                                                                           |       | 3.50                  |           |      |           |  |
|                                                            |             | 87831-3010                                                                                                 | 87831-3030                      | 87831-3050                                                                                                                             | 2                  | YES                                                                                                                                                                                         | N.A    | YES                                                                                                                                           | N.A    | YES                                                                     | N.A |                        |       |                           |       |                                                                           |       | 3.50                  |           |      |           |  |
|                                                            |             | PLATING OPTIONS:                                                                                           |                                 | 1 - 0.05-0.13um/2-5uin GOLD IN CONTACT AREA AND 1.88um/75uin MIN. MATTE TIN IN SOLDER TAIL AREA OVER 1.27um/50uin MIN. NICKEL OVERALL. |                    | 2 - 0.38um/15uin GOLD IN CONTACT AREA AND 1.88um/75uin MIN. MATTE TIN IN SOLDER TAIL AREA OVER 1.27um/50uin MIN. NICKEL OVERALL.                                                            |        | 3 - 0.76um/30uin GOLD IN CONTACT AREA AND 1.88um/75uin MIN. MATTE TIN IN SOLDER TAIL AREA OVER 1.27um/50uin MIN. NICKEL OVERALL.              |        | 4 - 2.50um/100uin MIN. MATTE TIN OVER 1.25um/50uin MIN. NICKEL OVERALL. |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
|                                                            |             | RELEASED<br>EC NO: S2015-1188<br>DRWN:GEMARLY 2015/04/15<br>CHKD:CGOH 2015/06/29<br>APPR:KHL IM 2015/06/29 |                                 | QUALITY<br>SYMBOLS<br>F=0<br>F=0<br>F=0                                                                                                |                    | GENERAL TOLERANCES<br>(UNLESS SPECIFIED)<br>mm INCH<br>4 PLACES ± --- ± ---<br>3 PLACES ± --- ± ---<br>2 PLACES ± 0.20 ± ---<br>1 PLACE ± --- ± ---<br>0 PLACE ± --- ± ---<br>ANGULAR ± 3 ° |        | DIMENSION STYLE<br>MM ONLY<br>DRAWN BY DATE<br>GEMARLY 2015/04/15<br>CHECKED BY DATE<br>APPROVED BY DATE<br>KHL IM 2015/06/29<br>MATERIAL NO. |        | SCALE<br>NTS                                                            |     | DESIGN UNITS<br>METRIC |       | THIRD ANGLE<br>PROJECTION |       | MILLIGRID<br>2MM PITCH, THROUGH HOLE<br>VERTICAL SHROUDED HEADER<br>molex |       | SHEET NO.<br>11 OF 13 |           |      |           |  |
| DRAFT WHERE APPLICABLE<br>MUST REMAIN<br>WITHIN DIMENSIONS |             | SEE TABLE                                                                                                  |                                 | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX<br>INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION       |                    |                                                                                                                                                                                             |        |                                                                                                                                               |        |                                                                         |     |                        |       |                           |       |                                                                           |       |                       |           |      |           |  |
| fb_frame_A3_P_AM_T<br>Rev. G 2012/01/11                    |             | 9                                                                                                          |                                 | 8                                                                                                                                      |                    | 7                                                                                                                                                                                           |        | 6                                                                                                                                             |        | 5                                                                       |     | 4                      |       | 3                         |       | 2                                                                         |       | 1                     |           |      |           |  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 10                                 | 9                               |                                | 8                  |                                         | 7                                                                                                                                                                                           |            | 6      |                            | 5   |                               | 4     |                                                                                                                                  | 3     |                           | 2   |                                                                           | 1         |   |     |                       |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------------|--------------------------------|--------------------|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------|----------------------------|-----|-------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------|-------|---------------------------|-----|---------------------------------------------------------------------------|-----------|---|-----|-----------------------|--|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 32 TO 40 CIRCUITS                  |                                 |                                |                    |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
| F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | CKT<br>SIZE                                                                                                     | ASSY P/N<br>WITHOUT CAP<br>IN TUBE | ASSY P/N<br>WITH CAP<br>IN TUBE | ASSY P/N<br>WITH CAP<br>IN T&R | PLATING<br>OPTIONS | FRICTION LOCKS                          |                                                                                                                                                                                             | SIDE SLOTS |        | CENTER<br>POLARIZATION     | PEG | DIMENSION                     |       |                                                                                                                                  |       |                           |     |                                                                           |           | F |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 |                                    |                                 |                                |                    | DUAL                                    | CENTER                                                                                                                                                                                      | DUAL       | SINGLE |                            |     | A                             | B     | C                                                                                                                                | D     | E                         | F   | G                                                                         | H         |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 32                                                                                                              | 87831-3219                         | N.A                             | N.A                            | 1                  | YES                                     | N.A                                                                                                                                                                                         | YES        | N.A    | YES                        | N.A | 30.00                         | 32.85 | 34.65                                                                                                                            | 33.00 | 26.00                     | N.A | 2.50                                                                      | 3.60±0.20 |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3220                         | N.A                             | N.A                            | 2                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3221                         | N.A                             | N.A                            | 3                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3236                         | N.A                             | N.A                            | 4                  | YES                                     | N.A                                                                                                                                                                                         | YES        | N.A    | YES                        | YES |                               |       |                                                                                                                                  |       |                           |     | 2.50                                                                      |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3228                         | N.A                             | N.A                            | 2                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3229                         | N.A                             | N.A                            | 3                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
| E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 34                                                                                                              | 87831-3419                         | N.A                             | N.A                            | 1                  | YES                                     | N.A                                                                                                                                                                                         | YES        | N.A    | YES                        | N.A | 32.00                         | 34.85 | 36.65                                                                                                                            | 35.00 | 28.00                     | N.A | 2.50                                                                      | 3.60±0.20 |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3420                         | N.A                             | N.A                            | 2                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3421                         | N.A                             | N.A                            | 3                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3436                         | N.A                             | N.A                            | 4                  | YES                                     | N.A                                                                                                                                                                                         | YES        | N.A    | YES                        | YES |                               |       |                                                                                                                                  |       |                           |     | 2.50                                                                      |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3428                         | N.A                             | N.A                            | 2                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3429                         | N.A                             | N.A                            | 3                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 |                                    |                                 | 87831-3435                     | N.A                | N.A                                     | 3                                                                                                                                                                                           | YES        | N.A    | YES                        | N.A |                               |       |                                                                                                                                  |       |                           |     | YES                                                                       |           |   | YES | 3.50                  |  |
| D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 36                                                                                                              | 87831-3619                         | N.A                             | N.A                            | 1                  | YES                                     | N.A                                                                                                                                                                                         | YES        | N.A    | YES                        | N.A | 34.00                         | 36.85 | 38.65                                                                                                                            | 37.00 | 30.00                     | N.A | 2.50                                                                      | 3.60±0.20 |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3620                         | N.A                             | N.A                            | 2                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3621                         | N.A                             | N.A                            | 3                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3636                         | N.A                             | N.A                            | 4                  | YES                                     | N.A                                                                                                                                                                                         | YES        | N.A    | YES                        | YES |                               |       |                                                                                                                                  |       |                           |     | 2.50                                                                      |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3628                         | N.A                             | N.A                            | 2                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3629                         | N.A                             | N.A                            | 3                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
| C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 38                                                                                                              | 87831-3819                         | N.A                             | N.A                            | 1                  | YES                                     | N.A                                                                                                                                                                                         | YES        | N.A    | YES                        | N.A | 36.00                         | 38.85 | 40.65                                                                                                                            | 39.00 | 32.00                     | N.A | 2.50                                                                      | 3.60±0.20 |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3820                         | N.A                             | N.A                            | 2                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3821                         | N.A                             | N.A                            | 3                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3836                         | N.A                             | N.A                            | 4                  | YES                                     | N.A                                                                                                                                                                                         | YES        | N.A    | YES                        | YES |                               |       |                                                                                                                                  |       |                           |     | 2.50                                                                      |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3828                         | N.A                             | N.A                            | 2                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-3829                         | N.A                             | N.A                            | 3                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 40                                                                                                              | 87831-4019                         | N.A                             | N.A                            | 1                  | YES                                     | N.A                                                                                                                                                                                         | YES        | N.A    | YES                        | N.A | 38.00                         | 40.85 | 42.65                                                                                                                            | 41.00 | 34.00                     | N.A | 2.50                                                                      | 3.60±0.20 |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-4020                         | N.A                             | N.A                            | 2                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-4021                         | N.A                             | N.A                            | 3                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-4036                         | N.A                             | N.A                            | 4                  | YES                                     | N.A                                                                                                                                                                                         | YES        | N.A    | YES                        | YES |                               |       |                                                                                                                                  |       |                           |     | 2.50                                                                      |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-4028                         | N.A                             | N.A                            | 2                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 | 87831-4029                         | N.A                             | N.A                            | 3                  |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 |                                    |                                 | 87831-4010                     | N.A                | N.A                                     | 2                                                                                                                                                                                           | YES        | N.A    | YES                        | N.A |                               |       |                                                                                                                                  |       |                           |     | YES                                                                       |           |   | N.A | 3.50                  |  |
| B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                 |                                    |                                 |                                |                    |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   | B   |                       |  |
| PLATING OPTIONS:<br>1 - 0.05-0.13um/2-5uin GOLD IN CONTACT AREA AND<br>1.88um/75uin MIN. MATTE TIN IN SOLDER TAIL AREA OVER<br>1.27um/50uin MIN. NICKEL OVERALL.<br>2 - 0.38um/15uin GOLD IN CONTACT AREA AND<br>1.88um/75uin MIN. MATTE TIN IN SOLDER TAIL AREA OVER<br>1.27um/50uin MIN. NICKEL OVERALL.<br>3 - 0.76um/30uin GOLD IN CONTACT AREA AND<br>1.88um/75uin MIN. MATTE TIN IN SOLDER TAIL AREA OVER<br>1.27um/50uin MIN. NICKEL OVERALL.<br>4 - 2.50um/100uin MIN. MATTE TIN OVER 1.25um/50uin MIN. NICKEL OVERALL. |                                                                                                                 |                                    |                                 |                                |                    |                                         |                                                                                                                                                                                             |            |        |                            |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | RELEASED<br>EC NO: S2015-1188<br>DRWN:GMENARLY 2015/06/29<br>CHKD:GQH 2015/06/29<br>APPR:KHL IM 2015/06/29<br>A |                                    |                                 |                                |                    | QUALITY<br>SYMBOLS<br>F=0<br>F=0<br>F=0 | GENERAL TOLERANCES<br>(UNLESS SPECIFIED)<br>mm INCH<br>4 PLACES ± --- ± ---<br>3 PLACES ± --- ± ---<br>2 PLACES ± 0.20 ± ---<br>1 PLACE ± --- ± ---<br>0 PLACE ± --- ± ---<br>ANGULAR ± 3 ° |            |        | DIMENSION STYLE<br>MM ONLY |     | SCALE<br>NTS                  |       | DESIGN UNITS<br>METRIC                                                                                                           |       | THIRD ANGLE<br>PROJECTION |     | MILLIGRID<br>2MM PITCH, THROUGH HOLE<br>VERTICAL SHROUDED HEADER<br>molex |           |   |     | SHEET NO.<br>12 OF 13 |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 |                                    |                                 |                                |                    |                                         |                                                                                                                                                                                             |            |        | DRAWN BY<br>GMENARLY       |     | DATE<br>2015/04/15            |       | TITLE                                                                                                                            |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 |                                    |                                 |                                |                    |                                         |                                                                                                                                                                                             |            |        | CHECKED BY                 |     | DATE                          |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 |                                    |                                 |                                |                    |                                         |                                                                                                                                                                                             |            |        | APPROVED BY<br>KHL IM      |     | DATE<br>2015/06/29            |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                 |                                    |                                 |                                |                    |                                         | DRAFT WHERE APPLICABLE<br>MUST REMAIN<br>WITHIN DIMENSIONS                                                                                                                                  |            |        | SEE TABLE                  |     | DOCUMENT NO.<br>SD-87831-0001 |       | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX<br>INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |       |                           |     |                                                                           |           |   |     |                       |  |
| tb_frame_A3_P_AM_T<br>Rev. G 2012/01/11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                 | 9                                  | 8                               | 7                              | 6                  | 5                                       | 4                                                                                                                                                                                           | 3          | 2      | 1                          |     |                               |       |                                                                                                                                  |       |                           |     |                                                                           |           |   |     |                       |  |

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                    |                                 |                                |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------------|--------------------------------|--------------------|----------------|--------|------------|--------|------------------------|-------|-----------|-------|-------|-------|-----|------|-----------|---|---|--|--|--|
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 10                                 |                                 | 9                              |                    | 8              |        | 7          |        | 6                      |       | 5         |       | 4     |       | 3   |      | 2         |   | 1 |  |  |  |
| 42 TO 50 CIRCUITS |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                    |                                 |                                |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
| F                 | CKT<br>SIZE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ASSY P/N<br>WITHOUT CAP<br>IN TUBE | ASSY P/N<br>WITH CAP<br>IN TUBE | ASSY P/N<br>WITH CAP<br>IN T&R | PLATING<br>OPTIONS | FRICTION LOCKS |        | SIDE SLOTS |        | CENTER<br>POLARIZATION | PEG   | DIMENSION |       |       |       |     |      |           |   | F |  |  |  |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                    |                                 |                                |                    | DUAL           | CENTER | DUAL       | SINGLE |                        |       | A         | B     | C     | D     | E   | F    | G         | H |   |  |  |  |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                    |                                 |                                |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
| 42                | 87831-4219                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 1                              | YES                | N.A            | YES    | N.A        | YES    | N.A                    | 40.00 | 42.85     | 44.65 | 43.00 | 36.00 | N.A | 2.50 | 3.60±0.20 |   |   |  |  |  |
|                   | 87831-4220                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 2                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | 87831-4221                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 3                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | 87831-4236                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 4                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | 87831-4228                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 2                              | YES                | N.A            | YES    | N.A        | YES    | YES                    |       |           |       |       |       |     | 2.50 |           |   |   |  |  |  |
|                   | 87831-4229                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 3                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
| E                 | 87831-4419                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 1                              | YES                | N.A            | YES    | N.A        | YES    | N.A                    | 42.00 | 44.85     | 46.65 | 45.00 | 38.00 | N.A | 2.50 | 3.60±0.20 |   |   |  |  |  |
|                   | 87831-4420                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 2                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | 87831-4421                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 3                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | 87831-4436                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 4                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | 87831-4428                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 2                              | YES                | N.A            | YES    | N.A        | YES    | YES                    |       |           |       |       |       |     | 2.50 |           |   |   |  |  |  |
|                   | 87831-4429                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 3                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
| 87831-4435        | N.A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | N.A                                | 3                               | YES                            | N.A                | YES            | N.A    | YES        | YES    | 3.50                   |       |           |       |       |       |     |      |           |   |   |  |  |  |
| D                 | 87831-4619                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 1                              | YES                | N.A            | YES    | N.A        | YES    | N.A                    | 44.00 | 46.85     | 48.65 | 47.00 | 40.00 | N.A | 2.50 | 3.60±0.20 |   |   |  |  |  |
|                   | 87831-4620                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 2                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | 87831-4621                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 3                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | 87831-4636                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 4                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | 87831-4628                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 2                              | YES                | N.A            | YES    | N.A        | YES    | YES                    |       |           |       |       |       |     | 2.50 |           |   |   |  |  |  |
|                   | 87831-4629                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 3                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
| C                 | 87831-4819                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 1                              | YES                | N.A            | YES    | N.A        | YES    | N.A                    | 46.00 | 48.85     | 50.65 | 49.00 | 42.00 | N.A | 2.50 | 3.60±0.20 |   |   |  |  |  |
|                   | 87831-4820                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 2                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | 87831-4821                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 3                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | 87831-4836                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 4                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | 87831-4828                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 2                              | YES                | N.A            | YES    | N.A        | YES    | YES                    |       |           |       |       |       |     | 2.50 |           |   |   |  |  |  |
|                   | 87831-4829                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 3                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
| 50                | 87831-5019                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 1                              | YES                | N.A            | YES    | N.A        | YES    | N.A                    | 48.00 | 50.85     | 52.65 | 51.00 | 44.00 | N.A | 2.50 | 3.60±0.20 |   |   |  |  |  |
|                   | 87831-5020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 2                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | 87831-5021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 3                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | 87831-5036                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 4                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | 87831-5028                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 2                              | YES                | N.A            | YES    | N.A        | YES    | YES                    |       |           |       |       |       |     | 2.50 |           |   |   |  |  |  |
|                   | 87831-5029                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N.A                                | N.A                             | 3                              |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
| 87831-5035        | N.A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | N.A                                | 3                               | YES                            | N.A                | YES            | N.A    | YES        | YES    | 3.50                   |       |           |       |       |       |     |      |           |   |   |  |  |  |
| B                 | PLATING OPTIONS:<br>1 - 0.05-0.13um/2-5uin GOLD IN CONTACT AREA AND<br>1.88um/75uin MIN. MATTE TIN IN SOLDER TAIL AREA OVER<br>1.27um/50uin MIN. NICKEL OVERALL.<br>2 - 0.38um/15uin GOLD IN CONTACT AREA AND<br>1.88um/75uin MIN. MATTE TIN IN SOLDER TAIL AREA OVER<br>1.27um/50uin MIN. NICKEL OVERALL.<br>3 - 0.76um/30uin GOLD IN CONTACT AREA AND<br>1.88um/75uin MIN. MATTE TIN IN SOLDER TAIL AREA OVER<br>1.27um/50uin MIN. NICKEL OVERALL.<br>4 - 2.50um/10uin MIN. MATTE TIN OVER 1.25um/50uin MIN. NICKEL OVERALL. |                                    |                                 |                                |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | RELEASED<br>EC NO: S2015-1188<br>DRAWN:GMEARLY 2015/04/15<br>CHKD:GGH 2015/06/29<br>APPR:KHL IM 2015/06/29<br>A                                                                                                                                                                                                                                                                                                                                                                                                                |                                    |                                 |                                |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | QUALITY SYMBOLS<br>F A = 0<br>F E = 0<br>F F = 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                    |                                 |                                |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | GENERAL TOLERANCES (UNLESS SPECIFIED)<br>mm INCH<br>4 PLACES ± --- ± ---<br>3 PLACES ± --- ± ---<br>2 PLACES ± 0.20 ± ---<br>1 PLACE ± --- ± ---<br>0 PLACE ± --- ± ---<br>ANGULAR ± 3 °<br>DRAFT WHERE APPLICABLE<br>MUST REMAIN<br>WITHIN DIMENSIONS                                                                                                                                                                                                                                                                         |                                    |                                 |                                |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | DIMENSION STYLE<br>MM ONLY<br>DRAWN BY DATE<br>GMEARLY 2015/04/15<br>CHECKED BY DATE<br>APPROVED BY DATE<br>KHL IM 2015/06/29<br>MATERIAL NO.<br>SEE TABLE<br>SIZE A3                                                                                                                                                                                                                                                                                                                                                          |                                    |                                 |                                |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | SCALE<br>NTS<br>DESIGN UNITS<br>METRIC<br>THIRD ANGLE PROJECTION<br>MILLIGRID<br>2MM PITCH, THROUGH HOLE<br>VERTICAL SHROUDED HEADER<br>molex<br>DOCUMENT NO.<br>SD-87831-0001<br>SHEET NO.<br>13 OF 13                                                                                                                                                                                                                                                                                                                        |                                    |                                 |                                |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX<br>INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION                                                                                                                                                                                                                                                                                                                                                                                               |                                    |                                 |                                |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   | tb_frame_A3_P_AM.T<br>Rev. G 2012/01/11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                    |                                 |                                |                    |                |        |            |        |                        |       |           |       |       |       |     |      |           |   |   |  |  |  |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                    | 9                               |                                | 8                  |                | 7      |            | 6      |                        | 5     |           | 4     |       | 3     |     | 2    |           | 1 |   |  |  |  |



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Электрон  
Связь**

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