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## Z-PACK HS3 Connector (Continued)

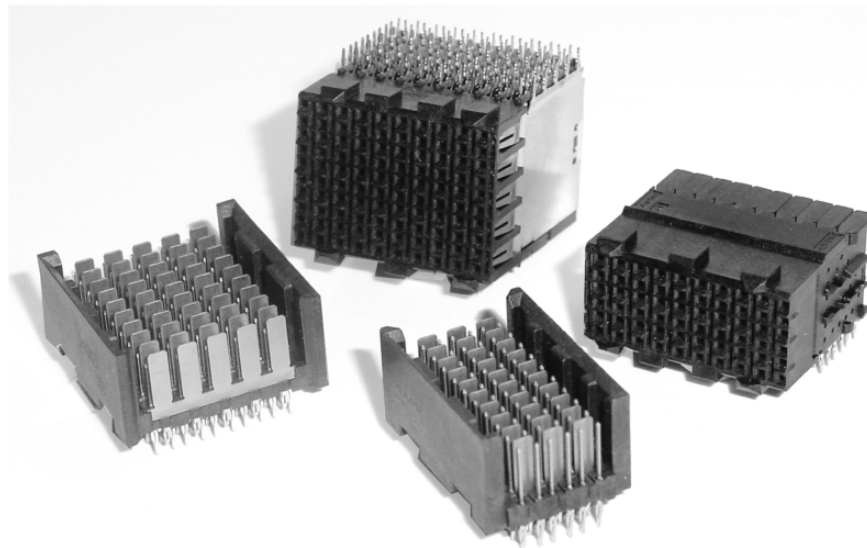
### Product Line Overview

#### Product Facts

- High speed, high density two piece board-to-board backplane connector
- Dual beam provides redundant contact for improved reliability
- For data rates of 6.2+ Gb/s
- 10 row, 100 high speed lines per 25.00 [.984]
- 6 row, 60 high speed lines per 25.00 [.984]
- Controlled impedance: 50 ohm Single Ended 100 ohm Differential
- Feedthrough versions for midplane applications
- 250 mating cycles
- End stackable on 2.50 [.098] centerline, signal pin to signal pin
- Advanced ESD/Power (10 Amps) using optional guide pins and power contacts

#### Applications

- High Speed Telecommunications Equipment
- Mid-range and high-end services
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476



The emergence of high speed serial backplanes has forced interconnections to be able to transfer data at gigabit speeds.

The Z-PACK HS3 connector system has been specifically designed to support this generation of high speed serial data transfer. Tyco Electronics has incorporated a controlled impedance microstrip path through the connector to minimize signal degradation and

crosstalk. Compliant pins are used on both daughter-card and backplane.

This connector family is press fit and is compatible with other Z-PACK HM family connectors on the same board edge. Z-PACK HS3 connectors support data rates of 6.2+ Gb/s per differential pair. The 6 row version is optimized for 20.32mm or 0.8 inch card centerline applications, while the 10 row version is

optimized for high density for 25.4mm or 1.0 inch card centerline applications.

The Tyco Electronics Universal Power Module (UPM) is designed to be compatible with the Z-PACK HS3 connector.

Static Discharge Guide/Power Pins, Guide Pin/Power Receptacles, Universal Guide Pin and Receptacles, and Coding Keys (10 row only) are also available.

#### Availability

**Fully validated SPICE models:** E-mail requests to [modeling@tycoelectronics.com](mailto:modeling@tycoelectronics.com)

**Samples:** go to <http://tycoelectronics.custhelp.com>

**Pro/E models and IGES models:** E-mail requests to [TycoCAD@tycoelectronics.com](mailto:TycoCAD@tycoelectronics.com)

**White Papers:** available on product website at <http://hs3.tycoelectronics.com>

**Electrical Performance Report:** <http://hs3.tycoelectronics.com>

6 row EPR #138505; 10 row EPR #138506

**Routing Guide:** <http://hs3.tycoelectronics.com>

Routing Guide #20GC017

<http://hs3.tycoelectronics.com>

#### Technical Documents

##### Product Specification

108-1957

##### Application Specification

114-13020

##### Qualification Test Report

501-501

#### Material and Finish

**Contact Area Finish** — 0.80µm Au min. over 1.3µm Ni min.

**Compliant Pin Finish** — 0.8µm SnPb min. over 1.3µm Ni min.

**Contact** — Copper Alloy

**Housing** — Glass filled polyester, 94V-0 rated

#### Ratings

**Current** — 1.15A per fully energized

**Operating Voltage** — 250 VAC max.

**Temperature** — -65°C to 105°C

**Mating Force** — 0.75N max. per contact (signal = 1 contact, ground = 1 contact)

**Durability** — 250 cycles

\* Reference Product Spec. 108-1957 for complete list of performance data.

IGES is a trademark of IAMBA Networks, Inc.

PRO/E is a trademark of Parametric Technology Corp.

**Z-PACK HS3 Connector** (Continued)

**Performance Specifications**

**Electrical Characteristics**

**Characteristic Impedance** —  
100 ± 10% Ohms

**Nominal Resistance** — 21 mOhm

**Crosstalk** — See table at right

**Insertion Loss** — See chart below

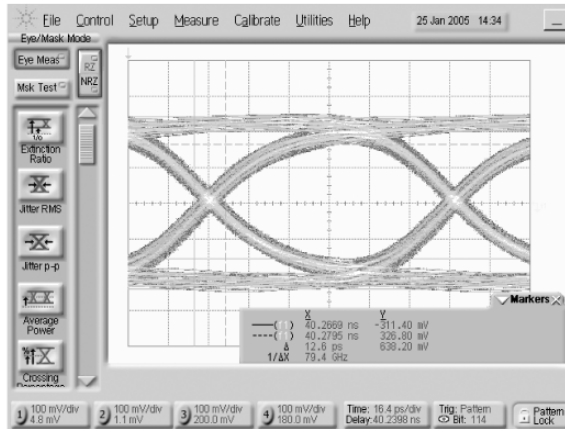
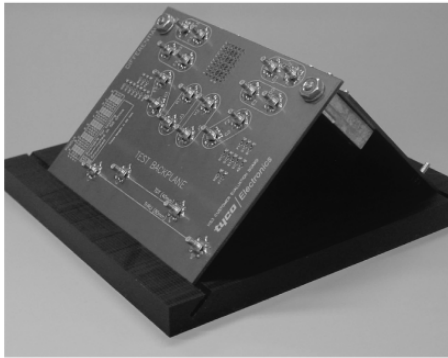
**Asynchronous Diff. NEXT (%)**

| Edge rate 20-80%   | HS3 10-Row Measured Noise Totals |        |        |        |
|--------------------|----------------------------------|--------|--------|--------|
|                    | 50 ps                            | 100 ps | 150 ps | 250 ps |
| BC Pair Total NEXT | 2.3%                             | 1.9%   | 1.7%   | 1.3%   |
| DE Pair Total NEXT | 4.0%                             | 3.3%   | 3.0%   | 2.4%   |
| FG Pair Total NEXT | 4.0%                             | 3.4%   | 3.1%   | 2.7%   |
| HJ Pair Total NEXT | 2.3%                             | 1.9%   | 1.7%   | 1.5%   |

**Synchronous Diff. NEXT (%)**

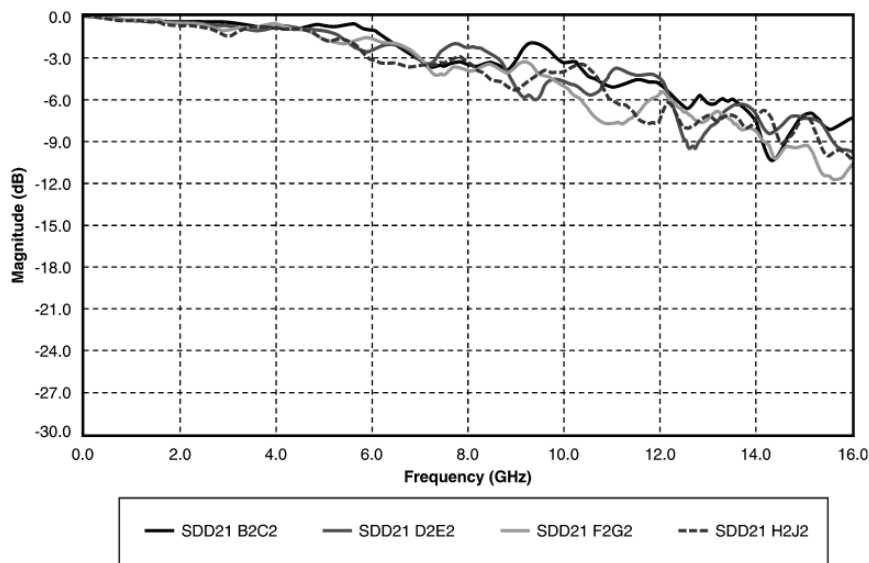
| Edge rate 20-80%   | HS3 10-Row Measured Noise Totals |        |        |        |
|--------------------|----------------------------------|--------|--------|--------|
|                    | 50 ps                            | 100 ps | 150 ps | 250 ps |
| BC Pair Total FEXT | 0.5%                             | 0.3%   | 0.3%   | 0.2%   |
| DE Pair Total FEXT | 1.5%                             | 0.8%   | 0.5%   | 0.5%   |
| FG Pair Total FEXT | 1.4%                             | 0.8%   | 0.7%   | 0.5%   |
| HJ Pair Total FEXT | 1.0%                             | 0.6%   | 0.4%   | 0.3%   |

Edge rates specified are at the connector.  
Noise includes 1.60 [.063] footprints on both sides of the connector.  
Totals include contributions from 8 adjacent aggressor pairs.



**PRBS 2<sup>-1</sup> data pattern**  
**10 Gb/s data rate**  
**BC Pair**  
**64% Eye Opening**  
**12.6ps Jitter**

**4**  
Z-PACK HS3 Connector



Calibrated to include only the connector and the 1.60 [.063] footprints on both sides of the connector.

**Note:** All part numbers are RoHS compliant.

**Z-PACK HS3 Connector (Continued)**

**Z-PACK HS3 Connector:  
Printed Circuit Design Rules  
for Backplane Routing**

**Using Standard Commercial Design Rules**

This table lists routing specifications which meet design rules practiced by most printed circuit board vendors. This table should be used to route the Z-PACK HS3 connector for most applications and especially under one or more of these considerations:

1. Edge rates require the widest conductors possible.
2. Backplanes having layer counts above 16.
3. Backplanes which exceed 508mm (20") in length or width.
4. Cost is a major factor.

| Finished Hole Dia. | Drilled Hole Dia. | Pad Dia.          | Annular Ring         | Pad-Pad Spacing<br>63 mils (1.58mm) C/C | Conductor Routing Options |                    |
|--------------------|-------------------|-------------------|----------------------|---|---------------------------|--------------------|
|                    |                   |                   |                      |   | 5 mil spacing             | 6 mil spacing      |
| 24 mils<br>0.6mm   | 28 mils<br>0.7mm  | 44 mils<br>1.1mm  | 2 mils<br>0.05mm     | 19 mils<br>0.475mm                      | 9 mils<br>0.225mm         | 7 mils<br>0.175mm  |
| 24 mils<br>0.6mm   | 28 mils<br>0.7mm  | 42 mils<br>1.05mm | 1 mil<br>0.025mm     | 21 mils<br>0.525mm                      | 11 mils<br>0.275mm        | 9 mils<br>0.225mm  |
| 24 mils<br>0.6mm   | 28 mils<br>0.7mm  | 40 mils<br>1.0mm  | tangency<br>tangency | 23 mils<br>0.575mm                      | 13 mils<br>0.325mm        | 11 mils<br>0.275mm |

**Commercial Design Rules:**

Minimum pad diameter for tangency: Drill Diameter (D)+12 mils (0.3mm)  
 Hole location tolerance: +/- 3 mils (0.075mm)  
 Pad/Pad artwork tolerance: +/- 2 mils (0.05mm)  
 Feature tolerance (1 oz foil): +/- 0.075 mils (0.0175mm)

**Using Advanced Design Rules**

This table lists routing specifications which can be built by a limited number of leading edge printed circuit vendors using advanced design rules. This table can be used as a reference for Z-PACK HS3 connector in backplane applications where very high density is a major factor. The PCB vendor should be consulted regarding applicability of these rules to a specific design. Consideration should be given to the following:

1. Signal layer count reduction is possible with these design rules.
2. Backplanes which exceed 508mm (20") in length or width generally cannot be built with these rules.
3. Cost factors can potentially be higher.

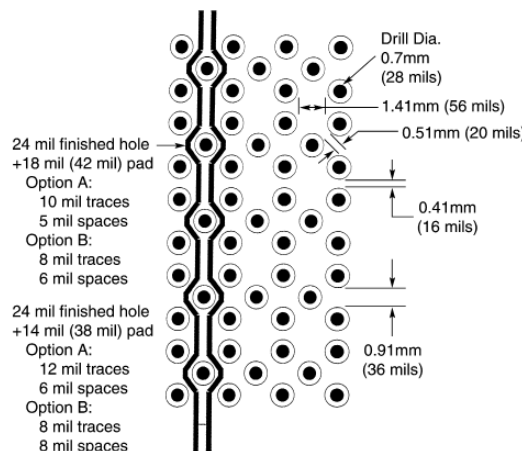
| Finished Hole Dia.           | Drilled Hole Dia. | Pad Dia.          | Annular Ring         | Pad-Pad Spacing<br>63 mil (1.58mm) C/C | Conductor Routing Options                                  |                  |
|------------------------------|-------------------|-------------------|----------------------|--|--|------------------|
|                              |                   |                   |                      |  | 5 mil spacing  | 6 mil spacing    |
| 24 mils<br>0.6mm             | 28 mils<br>0.7mm  | 38 mils<br>0.95mm | tangency<br>tangency | 25 mils<br>0.625mm                     | 15 mils<br>0.35mm  | 13 mils<br>0.3mm |
| <b>Two Conductor Routing</b> |                   |                   |                      |  |  |                  |
| 24 mils<br>0.6mm             | 28 mils<br>0.7mm  | 42 mils<br>1.05mm | 2 mils<br>0.05mm     | 21 mils<br>0.525mm                     | 4.5 mil lines/4 mil spacing<br>0.11mm lines/0.09mm spacing |                  |
| 24 mils<br>0.6mm             | 28 mils<br>0.7mm  | 40 mils<br>1.0mm  | 1 mil<br>0.025mm     | 23 mils<br>0.575mm                     | 5.5 mil lines/4 mil spacing<br>0.125mm lines/0.1mm spacing |                  |

**Advanced Design Rules:**

Minimum pad diameter for tangency: Drill Diameter (D)+10 mils (0.25mm)  
 Hole location tolerance: +/- 2 mils (0.05mm)  
 Pad/Pad artwork tolerance: +/- 2 mils (0.05mm)  
 Feature tolerance (1 oz foil): +/- 0.075 mils (0.0175mm)

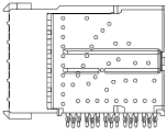
**Z-PACK HS3 Connector  
Routing Pattern**

For more details request Report #20GC004-1 or visit [http://www.tycoelectronics.com/products/simulation/files/papers/20GC004\\_1.pdf](http://www.tycoelectronics.com/products/simulation/files/papers/20GC004_1.pdf)



**Z-PACK HS3 Connector** (Continued)

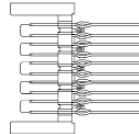
**Part Number Selection Chart  
10 Row Z-PACK HS3 Connector**



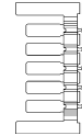
**Part Number 5120874**  
50 Position  
Right Receptacle  
Univ Pwr Guide Pin



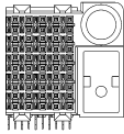
**Part Number 5120670**  
50 Position  
Right Header  
Univ Pwr Guide Pin



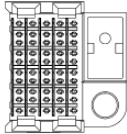
**Part Number 5120665**  
50 Position  
Right Feed-Through  
ESD/HDI Guide Pin



**Part Number 5120667**  
50 Position  
Right Shroud  
ESD/HDI Guide Pin



**Part Number 5120792**  
50 Position  
Right Receptacle  
ESD/HDI Guide Pin



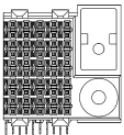
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Right Header  
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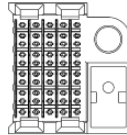
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Right Feed-Through  
ESD/HDI Guide Pin



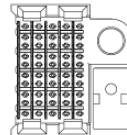
**Part Number 5120668**  
50 Position  
Right Shroud  
ESD/HDI Guide Pin



**Part Number 5120790**  
100 Position  
Center Receptacle



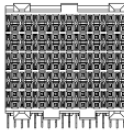
**Part Number 5120658**  
100 Position  
Center Header



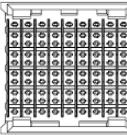
**Part Number 5120664**  
100 Position  
Center Feed-Through



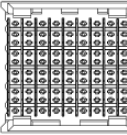
**Part Number 5120663**  
100 Position  
Center Shroud



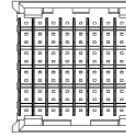
**Part Number 5120791**  
50 Position  
Center Receptacle



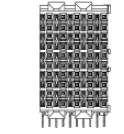
**Part Number 5120747**  
50 Position  
Center Header



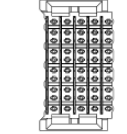
**Part Number 5120748**  
50 Position  
Center Feed-Through



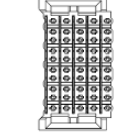
**Part Number 5120750**  
50 Position  
Center Shroud



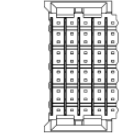
**Part Number 5120793**  
50 Position  
Left Receptacle  
ESD/HDI Guide Pin



**Part Number 5120662**  
50 Position  
Left Header  
ESD/HDI Guide Pin



**Part Number 5120666**  
50 Position  
Left Feed-Through  
ESD/HDI Guide Pin



**Part Number 5120668**  
50 Position  
Left Shroud  
ESD/HDI Guide Pin



**Part Number 5120875**  
50 Position  
Left Receptacle  
Univ Pwr Guide Pin



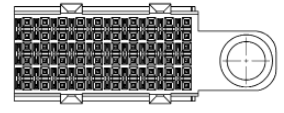
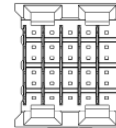
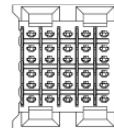
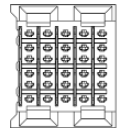
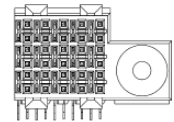
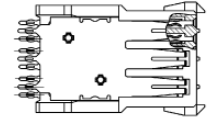
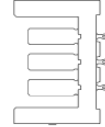
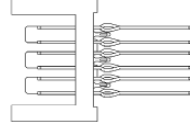
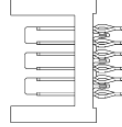
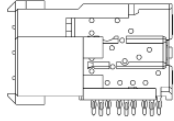
**Part Number 5120672**  
50 Position  
Left Header  
Univ Pwr Guide Pin

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

**4**  
Z-PACK HS3 Connector

**Z-PACK HS3 Connector** (Continued)

**Part Number Selection Chart  
6 Row Z-PACK HS3 Connector**



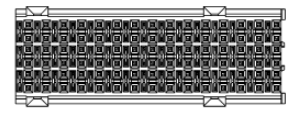
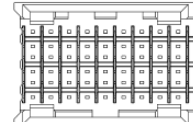
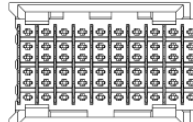
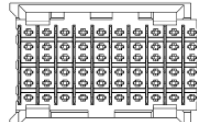
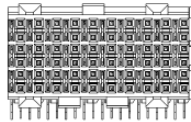
**Part Number 5120788**  
30 Position  
Right Receptacle

**Part Number 5120677**  
30 Position  
Right Header

**Part Number 5120680**  
30 Position  
Right Header  
Feed-Through

**Part Number 5120683**  
30 Position  
Right Shroud

**Part Number 120949-1**  
60 Position  
Receptacle  
with Guide Module



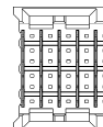
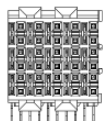
**Part Number 5120786**  
60 Position  
Center Receptacle

**Part Number 5120674**  
60 Position  
Center Header

**Part Number 5120679**  
60 Position  
Center Header  
Feed-Through

**Part Number 5120682**  
60 Position  
Center Shroud

**Part Number 120948-1**  
90 Position  
Receptacle

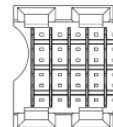
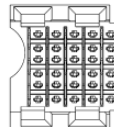
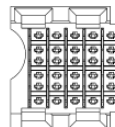
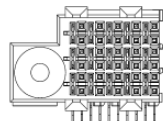


**Part Number 5120787**  
30 Position  
Center Receptacle

**Part Number 5120732**  
30 Position  
Center Header

**Part Number 5120742**  
30 Position  
Center Header  
Feed-Through

**Part Number 5120743**  
30 Position  
Center Shroud



**Part Number 5120789**  
30 Position  
Left Receptacle

**Part Number 5120678**  
30 Position  
Left Header

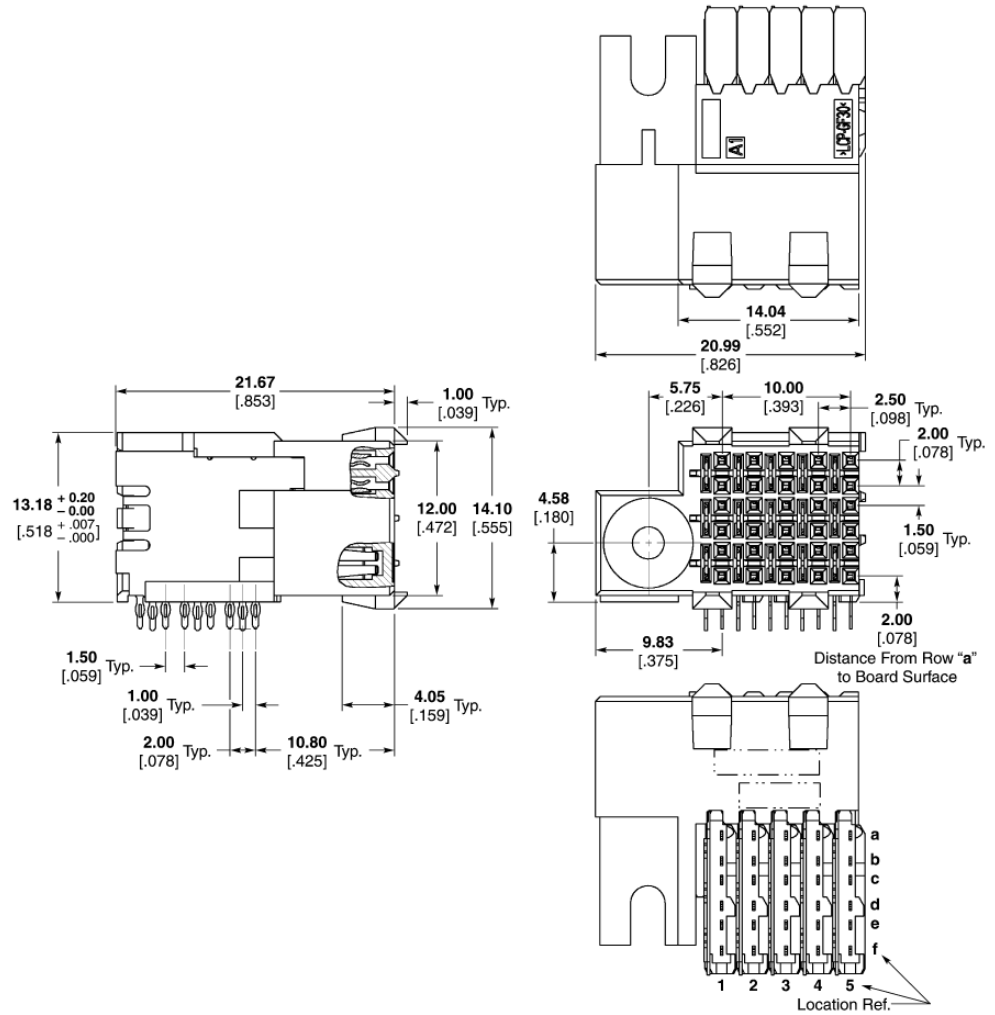
**Part Number 5120681**  
30 Position  
Left Header  
Feed-Through

**Part Number 5120684**  
30 Position  
Left Shroud

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

**Z-PACK HS3 Connector (Continued)**

**Right Angle Receptacle  
6 Row, Left Module (accepts ESD Guide Pin)**



**4**  
Z-PACK HS3 Connector

**Pin Header Assemblies**

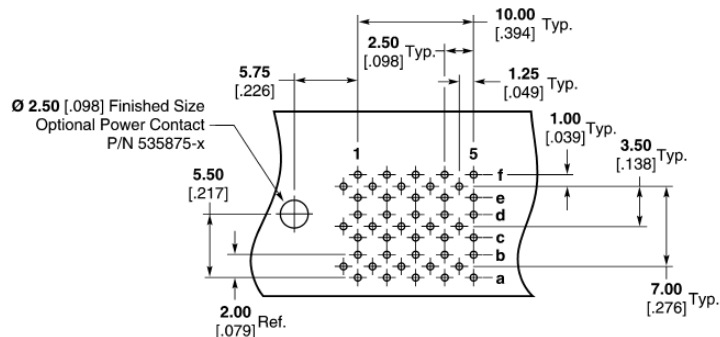
| Number of Positions | Part Number | Application Tooling |          |             |          |                 |          |
|---------------------|-------------|---------------------|----------|-------------|----------|-----------------|----------|
|                     |             | Insertion           | IS Sheet | Hsg Removal | IS Sheet | Chiclet Removal | IS Sheet |
| 30                  | 5120789-1   | 1338742-1           | 408-8394 | 1338744-1   | 408-8393 | 1338745-1       | 408-8410 |

**P.C.B. Hole Dimensions**

- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.

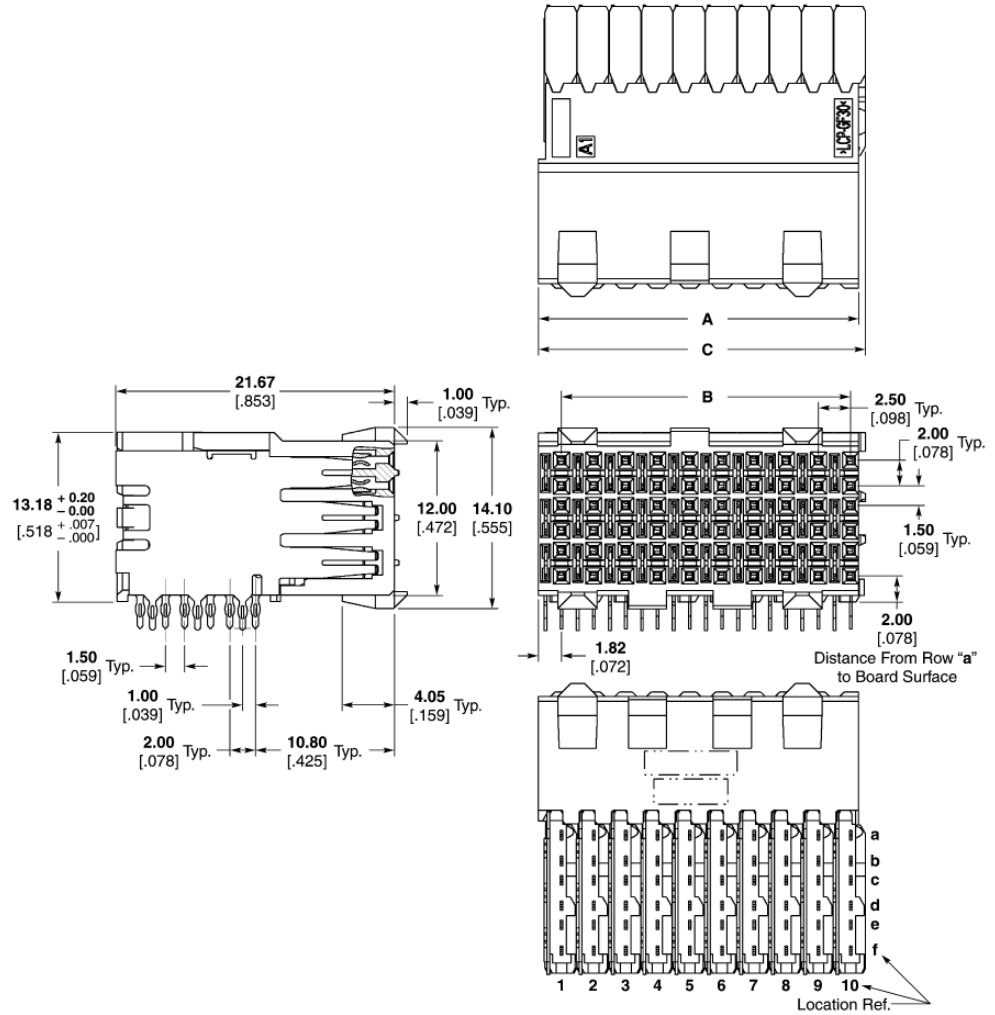
**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.



**Recommended PC Board Layout  
(Component Side Shown)**

**Z-PACK HS3 Connector (Continued)**

**Right Angle Receptacle  
(Continued)  
6 Row, Center Module**



**Pin Header Assemblies**

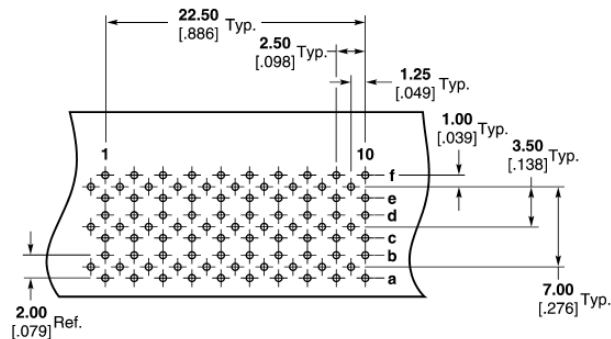
| Number of Positions | Dimensions    |               |               | Part Number | Application Tooling |          |             |          |                 |          |
|---------------------|---------------|---------------|---------------|-------------|---------------------|----------|-------------|----------|-----------------|----------|
|                     | A             | B             | C             |             | Insertion           | IS Sheet | Hsg Removal | IS Sheet | Chiclet Removal | IS Sheet |
| 60                  | 24.88<br>.980 | 22.50<br>.886 | 25.40<br>1.00 | 5120786-1   | 1338742-2           | 408-8394 | 1338744-1   | 408-8393 | 1338745-1       | 408-8410 |
| 30                  | 12.38<br>.487 | 10.00<br>.394 | 12.90<br>.508 | 5120787-1   | 1338742-1           | 408-8394 | 1338744-1   | 408-8393 | 1338745-1       | 408-8410 |

**P.C.B. Hole Dimensions**

- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

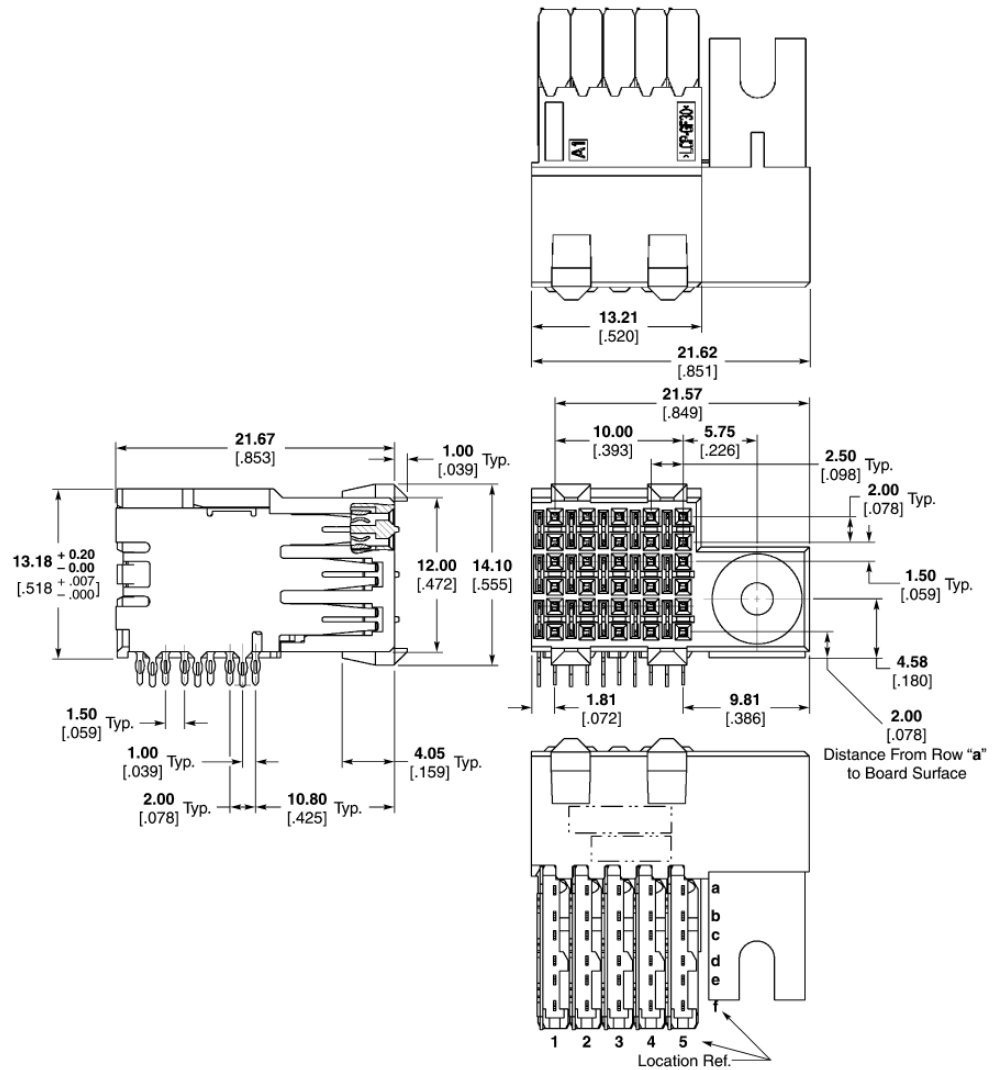


**Recommended PC Board Layout  
(Component Side Shown)**



**Z-PACK HS3 Connector (Continued)**

**Right Angle Receptacle**  
(Continued)  
**6 Row, Right Module**  
(accepts ESD Guide Pin)



**4**  
Z-PACK HS3 Connector

**Pin Header Assemblies**

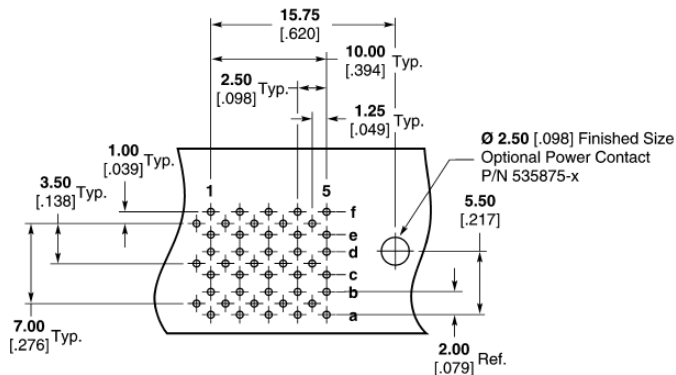
| Number of Positions | Part Number | Application Tooling |          |             |          |                 |          |
|---------------------|-------------|---------------------|----------|-------------|----------|-----------------|----------|
|                     |             | Insertion           | IS Sheet | Hsg Removal | IS Sheet | Chiclet Removal | IS Sheet |
| 30                  | 5120788-1   | 1338742-1           | 408-8394 | 1338744-1   | 408-8393 | 1338745-1       | 408-8410 |

**P.C.B. Hole Dimensions**

- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.

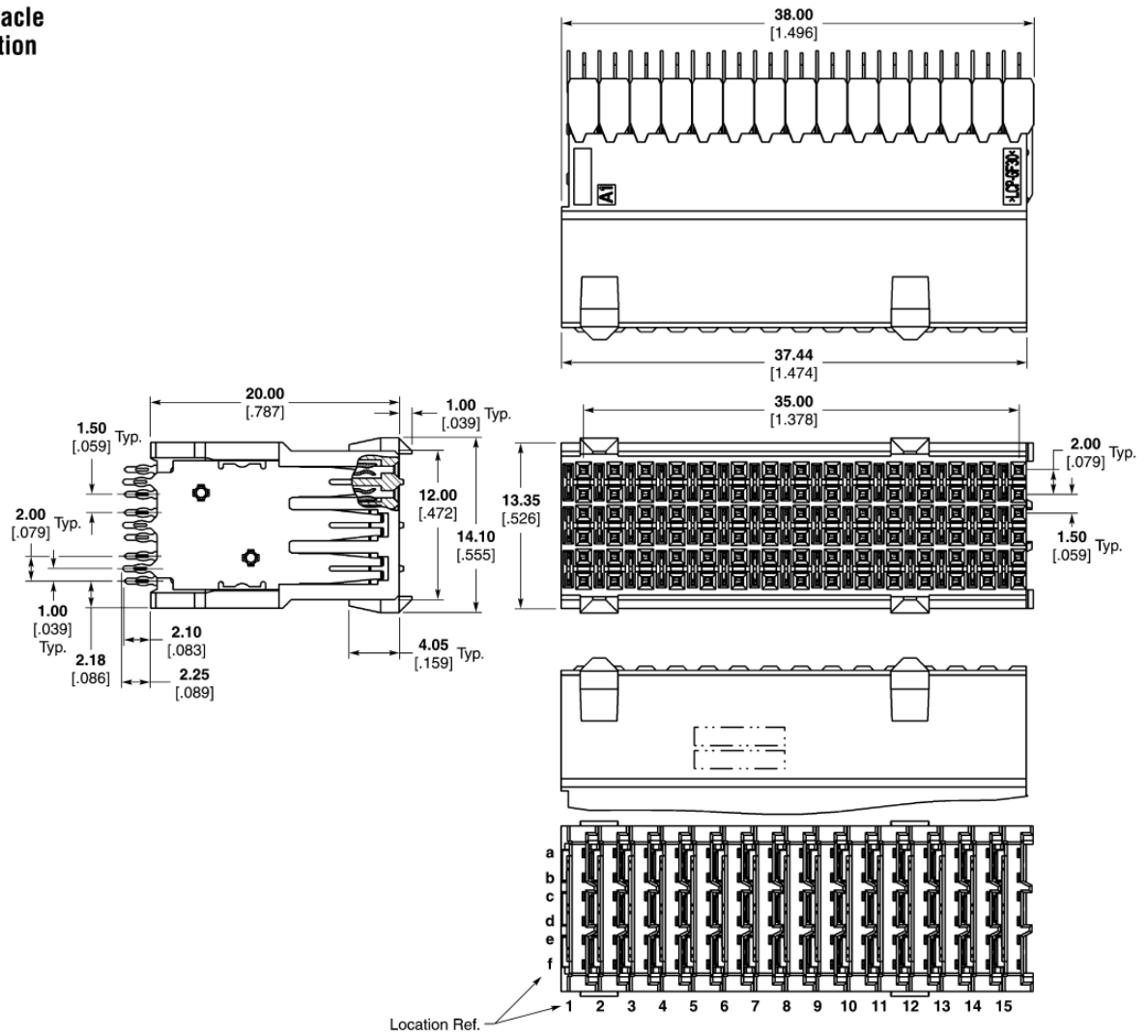
**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.



**Recommended PC Board Layout**  
(Component Side Shown)

**Z-PACK HS3 Connector (Continued)**

**Vertical Receptacle  
6 Row, 90 Position**



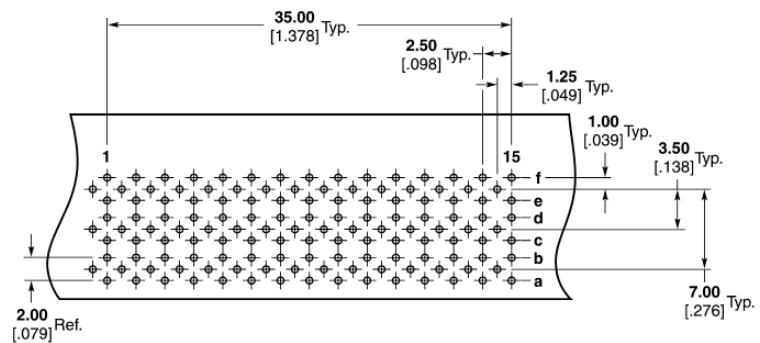
| Number of Positions | Part Number | Application Tooling |          |             |          |                 |          |
|---------------------|-------------|---------------------|----------|-------------|----------|-----------------|----------|
|                     |             | Insertion           | IS Sheet | Hsg Removal | IS Sheet | Chiclet Removal | IS Sheet |
| 90                  | 120948-1    | 1725624-1           | 408-8870 | —           | —        | —               | —        |

**P.C.B. Hole Dimensions**

- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.

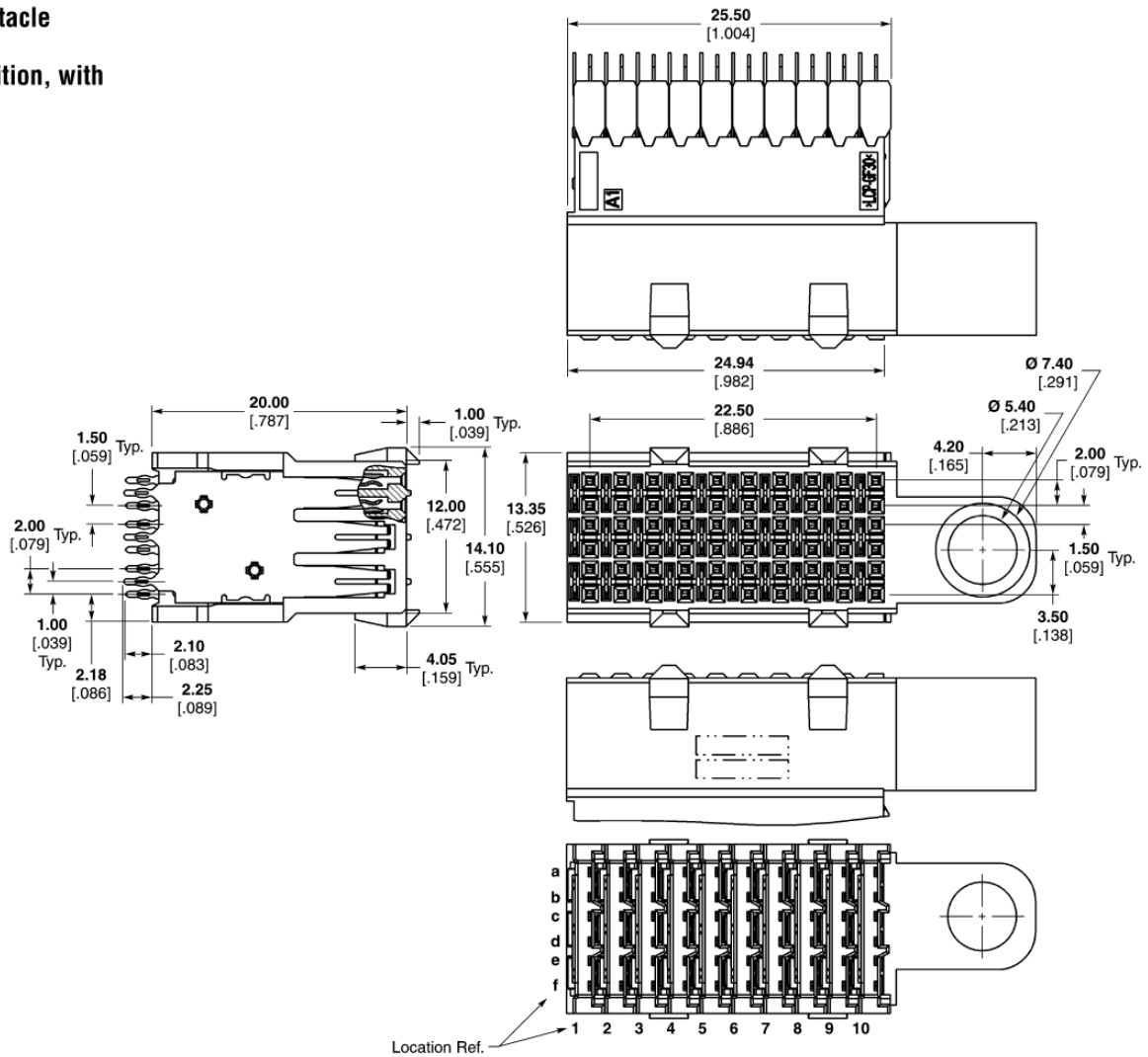
**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.



**Recommended PC Board Layout  
(Component Side Shown)**

**Z-PACK HS3 Connector (Continued)**

**Vertical Receptacle**  
(Continued)  
**6 Row, 60 Position, with Guide Module**



**4**  
Z-PACK HS3 Connector

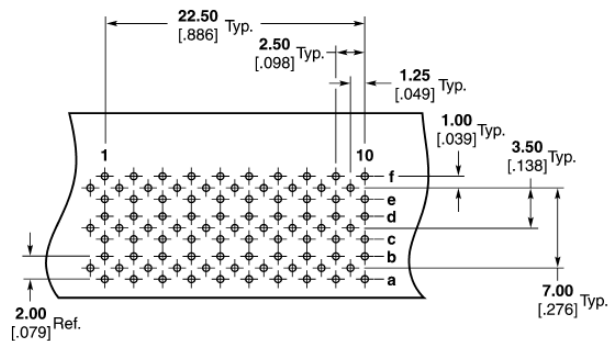
| Number of Positions | Part Number | Application Tooling |          |             |          |                 |          |
|---------------------|-------------|---------------------|----------|-------------|----------|-----------------|----------|
|                     |             | Insertion           | IS Sheet | Hsg Removal | IS Sheet | Chiclet Removal | IS Sheet |
| 60                  | 120949-1    | 1725623-1           | 408-8870 | —           | —        | —               | —        |

**P.C.B. Hole Dimensions**

- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.

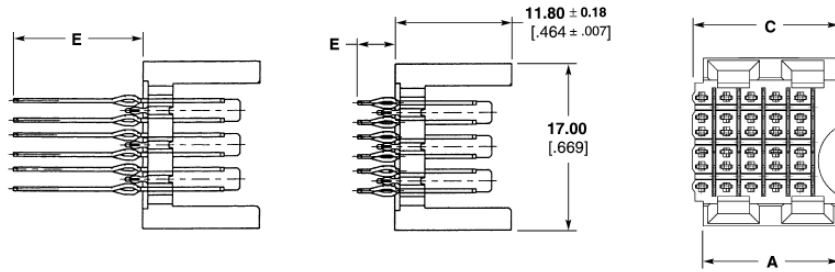
**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.



**Recommended PC Board Layout (Component Side Shown)**

**Z-PACK HS3 Connector** (Continued)

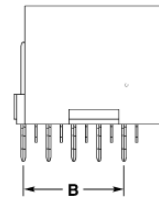
**Vertical Pin Header Assemblies**  
**6 Row, Left Module**  
**(accepts ESD Guide Pin)**



**P.C.B. Hole Dimensions**

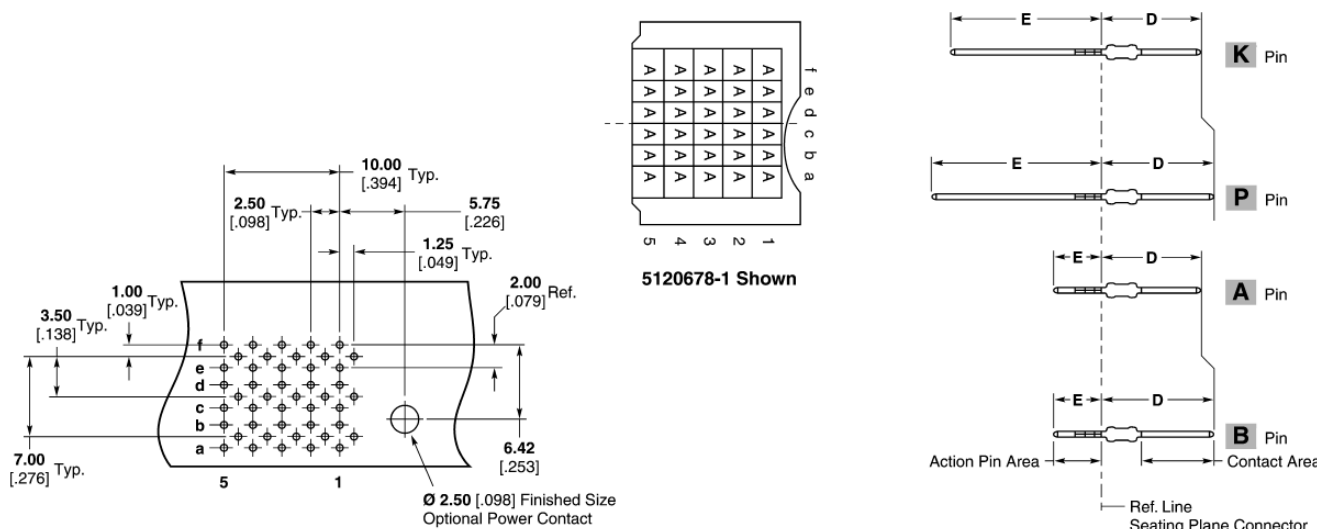
- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.



**Pin Header Assemblies**

| Number of Positions | Dimensions    |               |               |              |               | Pin Ref. | Part Numbers | Application Tooling |          |            |          |              |          |
|---------------------|---------------|---------------|---------------|--------------|---------------|----------|--------------|---------------------|----------|------------|----------|--------------|----------|
|                     | A             | B             | C             | D            | E             |          |              | Seating             | IS Sheet | Signal Pin |          | Ground Blade |          |
|                     | Repair Kit    | IS Sheet      | Repair Kit    | IS Sheet     | Repair Kit    |          |              |                     |          | IS Sheet   |          |              |          |
| 30                  | 13.70<br>.539 | 10.00<br>.393 | 14.80<br>.583 | 8.20<br>.322 | 3.70<br>.145  | <b>A</b> | 5120678-1    | 91313-1             | 408-4546 | 354687-2   | 408-9979 | 1320534-1    | 408-4573 |
|                     | 13.70<br>.539 | 10.00<br>.393 | 14.80<br>.583 | 9.70<br>.381 | 3.70<br>.145  | <b>B</b> | 5120678-2    | 91313-1             | 408-4546 | 354687-2   | 408-9979 | 1320534-1    | 408-4573 |
|                     | 13.70<br>.539 | 10.00<br>.393 | 14.80<br>.583 | 8.20<br>.322 | 13.00<br>.511 | <b>K</b> | 5120681-1    | 91313-1             | 408-4546 | 354687-2   | 408-9979 | 1320534-1    | 408-4573 |
|                     | 13.70<br>.539 | 10.00<br>.393 | 14.80<br>.583 | 9.70<br>.381 | 14.50<br>.570 | <b>P</b> | 5120681-2    | 91313-1             | 408-4546 | 354687-2   | 408-9979 | 1320534-1    | 408-4573 |



**Recommended PC Board Layout**  
**(Component Side Shown)**  
**For Non-Midplane Applications**  
**For Midplane Applications Reference Page 112**

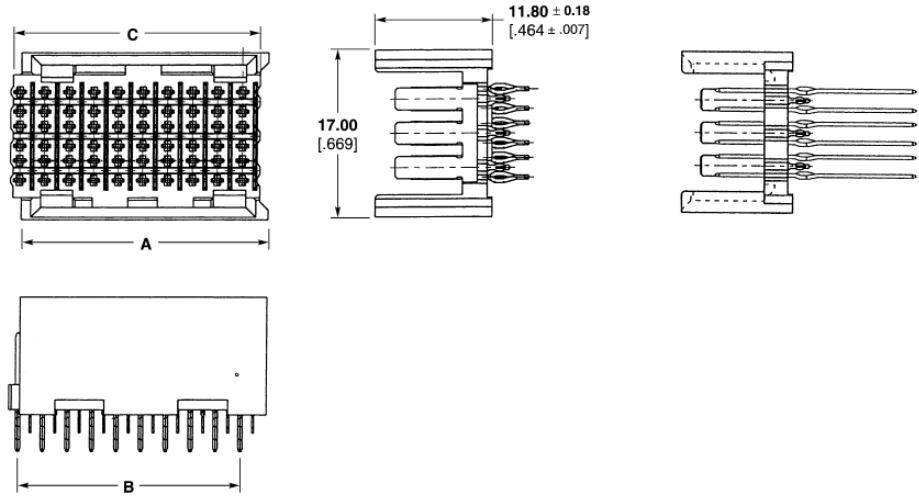
**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

**Z-PACK HS3 Connector (Continued)**

**Vertical Pin Header Assemblies (Continued)  
6 Row, Center Module**

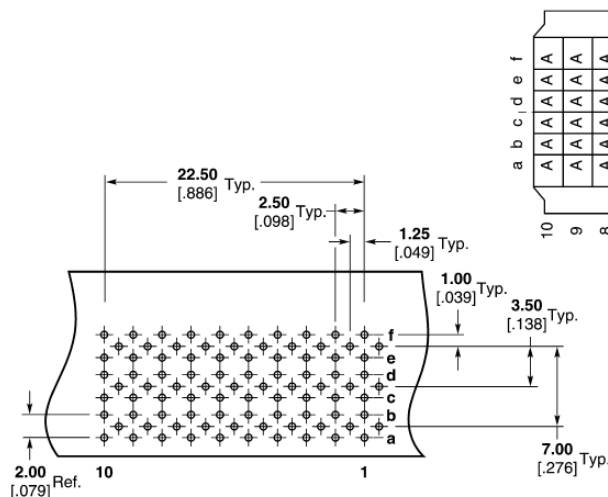
**P.C.B. Hole Dimensions**  
**Drilled Hole** — 0.7±0.025mm  
**Fin. Hole** — 0.55 to 0.65mm  
**Cu-thickness** — 0.025 to 0.050mm  
**SnPb-thickness** — 0.004 to 0.010mm

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.

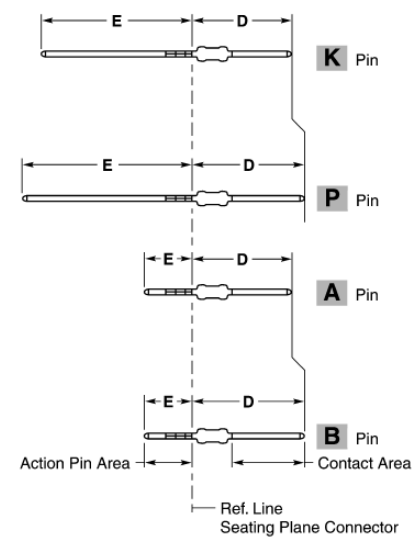
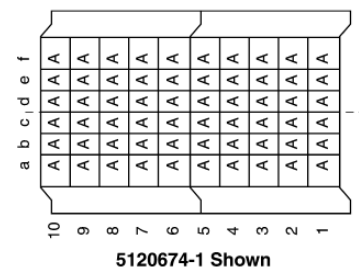


**Pin Header Assemblies**

| Number of Positions | Dimensions |       |       |       |          | Pin Ref.  | Part Numbers | Application Tooling |          |            |           |              |          |
|---------------------|------------|-------|-------|-------|----------|-----------|--------------|---------------------|----------|------------|-----------|--------------|----------|
|                     | A          | B     | C     | D     | E        |           |              | Seating             | IS Sheet | Signal Pin |           | Ground Blade |          |
|                     |            |       |       |       |          |           |              |                     |          | Repair Kit | IS Sheet  | Repair Kit   | IS Sheet |
| 60                  | 24.90      | 22.50 | 24.90 | 8.20  | 3.70     | <b>A</b>  | 5120674-1    | 91313-2             | 408-4546 | 354687-2   | 408-9979  | 1320534-1    | 408-4573 |
|                     | .980       | .885  | .980  | .322  | .145     |           |              |                     |          |            |           |              |          |
|                     | 24.90      | 22.50 | 24.90 | 9.70  | 3.70     | <b>B</b>  | 5120674-2    | 91313-2             | 408-4546 | 354687-2   | 408-9979  | 1320534-1    | 408-4573 |
|                     | .980       | .885  | .980  | .381  | .145     |           |              |                     |          |            |           |              |          |
| 24.90               | 22.50      | 24.90 | 8.20  | 13.00 | <b>K</b> | 5120679-1 | 91313-2      | 408-4546            | 354687-2 | 408-9979   | 1320534-1 | 408-4573     |          |
| .980                | .885       | .980  | .322  | .511  |          |           |              |                     |          |            |           |              |          |
| 24.90               | 22.50      | 24.90 | 9.70  | 14.50 | <b>P</b> | 5120679-2 | 91313-2      | 408-4546            | 354687-2 | 408-9979   | 1320534-1 | 408-4573     |          |
| .980                | .885       | .980  | .381  | .570  |          |           |              |                     |          |            |           |              |          |
| 30                  | 12.41      | 10.00 | 12.40 | 8.20  | 3.70     | <b>A</b>  | 5120732-1    | 91313-1             | 408-4546 | 354687-2   | 408-9979  | 1320534-1    | 408-4573 |
|                     | .488       | .393  | .488  | .322  | .145     |           |              |                     |          |            |           |              |          |
|                     | 12.41      | 10.00 | 12.40 | 9.70  | 3.70     | <b>B</b>  | 5120732-2    | 91313-1             | 408-4546 | 354687-2   | 408-9979  | 1320534-1    | 408-4573 |
|                     | .488       | .393  | .488  | .381  | .145     |           |              |                     |          |            |           |              |          |
| 12.41               | 10.00      | 12.40 | 8.20  | 13.00 | <b>K</b> | 5120742-1 | 91313-1      | 408-4546            | 354687-2 | 408-9979   | 1320534-1 | 408-4573     |          |
| .488                | .393       | .488  | .322  | .511  |          |           |              |                     |          |            |           |              |          |
| 12.41               | 10.00      | 12.40 | 9.70  | 14.50 | <b>P</b> | 5120742-2 | 91313-1      | 408-4546            | 354687-2 | 408-9979   | 1320534-1 | 408-4573     |          |
| .488                | .393       | .488  | .381  | .570  |          |           |              |                     |          |            |           |              |          |



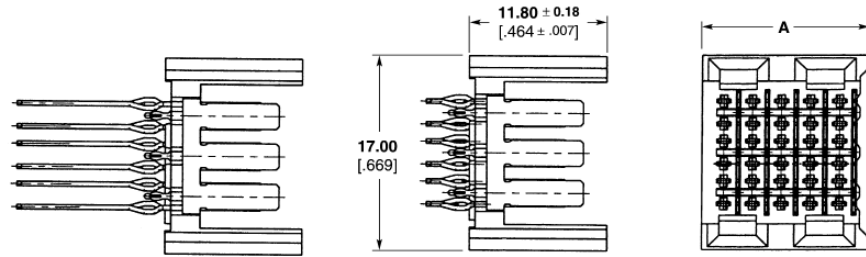
**Recommended PC Board Layout (Component Side Shown)  
For Non-Midplane Applications  
For Midplane Applications Reference Page 112**



**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

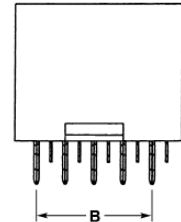
**Z-PACK HS3 Connector (Continued)**

**Vertical Pin Header Assemblies (Continued)**  
**6 Row, Right Module (accepts ESD Guide Pin)**



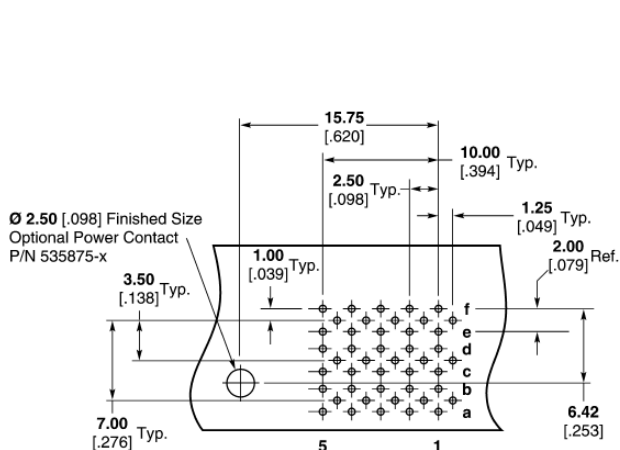
**P.C.B. Hole Dimensions**  
**Drilled Hole** — 0.7±0.025mm  
**Fin. Hole** — 0.55 to 0.65mm  
**Cu-thickness** — 0.025 to 0.050mm  
**SnPb-thickness** — 0.004 to 0.010mm

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.

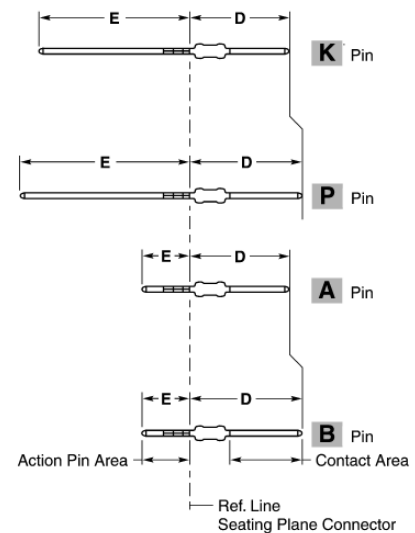
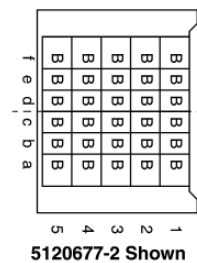


**Pin Header Assemblies**

| Number of Positions | Dimensions    |               |              |               | Pin Ref. | Part Numbers | Application Tooling |          |            |          |              |          |
|---------------------|---------------|---------------|--------------|---------------|----------|--------------|---------------------|----------|------------|----------|--------------|----------|
|                     | A             | B             | D            | E             |          |              | Seating             | IS Sheet | Signal Pin |          | Ground Blade |          |
|                     |               |               |              |               |          |              |                     |          | Repair Kit | IS Sheet | Repair Kit   | IS Sheet |
| 30                  | 14.45<br>.568 | 10.00<br>.393 | 8.20<br>.322 | 3.70<br>.145  | <b>A</b> | 5120677-1    | 91313-1             | 408-4546 | 354687-2   | 408-9979 | 1320534-1    | 408-4573 |
|                     | 14.45<br>.568 | 10.00<br>.393 | 9.70<br>.381 | 3.70<br>.145  | <b>B</b> | 5120677-2    | 91313-1             | 408-4546 | 354687-2   | 408-9979 | 1320534-1    | 408-4573 |
|                     | 14.45<br>.568 | 10.00<br>.393 | 8.20<br>.322 | 13.00<br>.511 | <b>K</b> | 5120680-1    | 91313-1             | 408-4546 | 354687-2   | 408-9979 | 1320534-1    | 408-4573 |
|                     | 14.45<br>.568 | 10.00<br>.393 | 9.70<br>.381 | 14.50<br>.570 | <b>P</b> | 5120680-2    | 91313-1             | 408-4546 | 354687-2   | 408-9979 | 1320534-1    | 408-4573 |



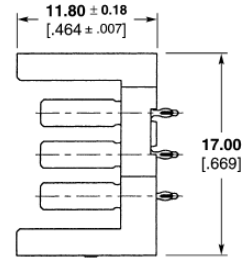
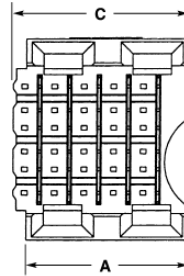
**Recommended PC Board Layout (Component Side Shown) For Non-Midplane Applications For Midplane Applications Reference Page 112**



**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

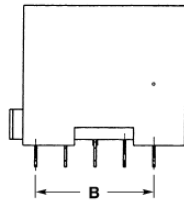
**Z-PACK HS3 Connector (Continued)**

**Vertical Pin Header Shrouds  
6 Row, Left Module**



**P.C.B. Hole Dimensions**

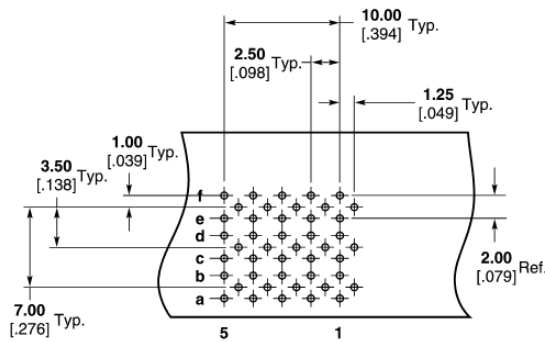
- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm



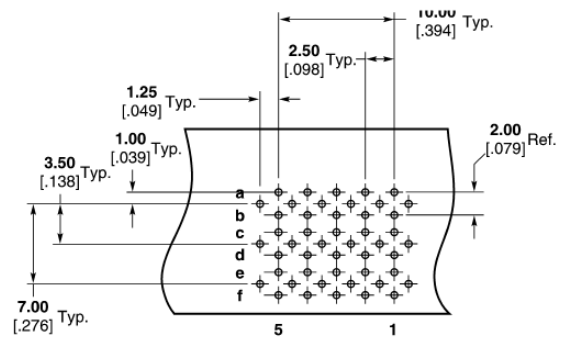
**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.

**Pin Header Assemblies**

| Number of Positions | Dimensions    |               |               | Part Number | Application Tooling |          |              |          |
|---------------------|---------------|---------------|---------------|-------------|---------------------|----------|--------------|----------|
|                     | A             | B             | C             |             | Insertion           | IS Sheet | Ground Blade |          |
|                     |               |               |               |             |                     |          | Repair Kit   | IS Sheet |
| 30                  | 13.70<br>.537 | 10.00<br>.393 | 14.80<br>.582 | 5120684-1   | 91313-1             | 408-4546 | 1320534-1    | 408-4573 |



**Non-Coplanar Daughtercards  
(Pin 1a Header = Pin 1f Shroud Side)  
Recommended PC Board Layout — Reference Page 112  
(Shroud Side Shown)**

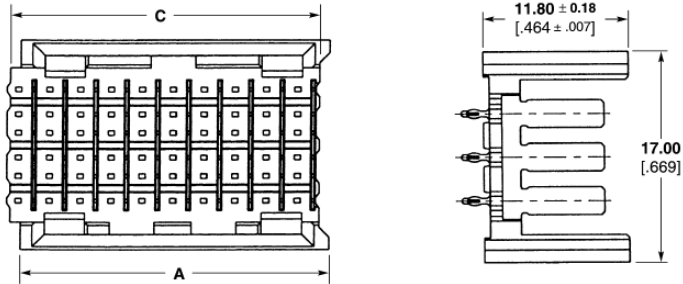


**Coplanar Daughtercards  
(Pin 1a Header = Pin 5a Shroud Side)  
Recommended PC Board Layout — Reference Page 112  
(Shroud Side Shown)**

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

**Z-PACK HS3 Connector (Continued)**

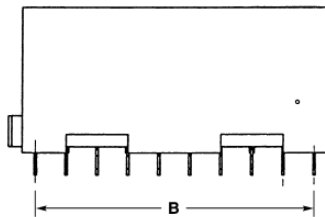
**Vertical Pin Header Shrouds (Continued)  
6 Row, Center Module**



**P.C.B. Hole Dimensions**

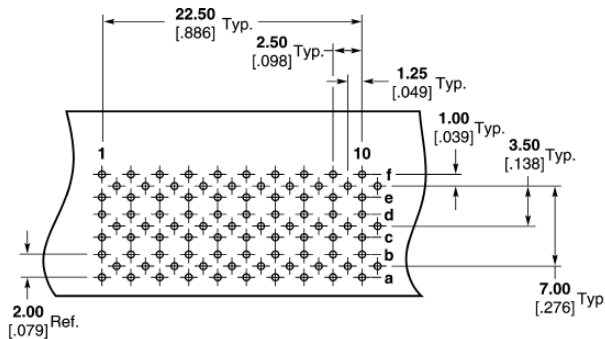
- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.

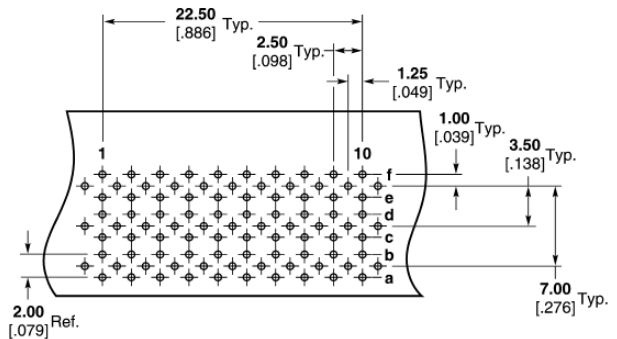


**Pin Header Assemblies**

| Number of Positions | Dimensions      |                 |                 | Part Number | Application Tooling |          |              |          |
|---------------------|-----------------|-----------------|-----------------|-------------|---------------------|----------|--------------|----------|
|                     | A               | B               | C               |             | Insertion           | IS Sheet | Ground Blade |          |
|                     |                 |                 |                 |             |                     |          | Repair Kit   | IS Sheet |
| 60                  | 24.90<br>[.980] | 22.50<br>[.885] | 24.90<br>[.980] | 5120682-1   | 91313-2             | 408-4546 | 1320534-1    | 408-4573 |
| 30                  | 12.57<br>[.494] | 10.00<br>[.393] | 12.40<br>[.488] | 5120743-1   | 91313-1             | 408-4546 | 1320534-1    | 408-4573 |



**Non-Coplanar Daughtercards**  
(Pin 1a Header = Pin 1f Shroud Side)  
Recommended PC Board Layout — Reference Page 112  
(Shroud Side Shown)



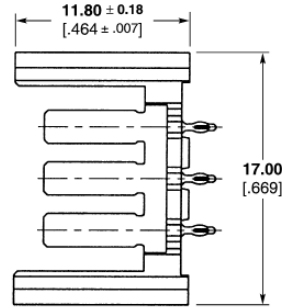
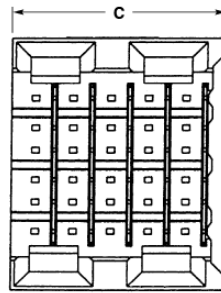
**Coplanar Daughtercards**  
(Pin 1a Header = Pin 5a Shroud Side)  
Recommended PC Board Layout — Reference Page 112  
(Shroud Side Shown)

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.



**Z-PACK HS3 Connector** (Continued)

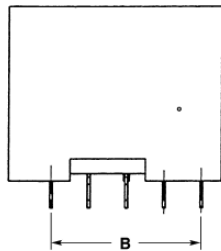
**Vertical Pin Header Shrouds** (Continued)  
**6 Row, Right Module**



**P.C.B. Hole Dimensions**

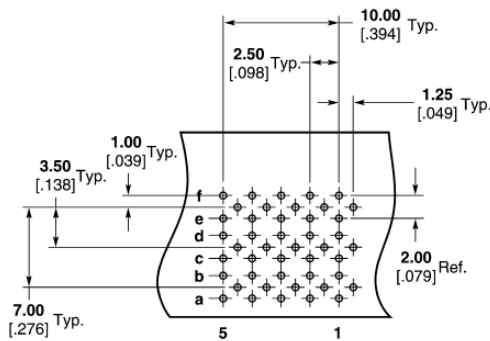
- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.

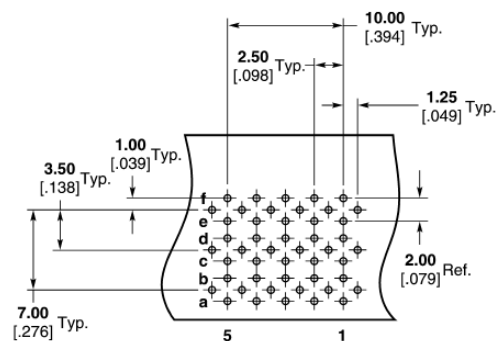


**Pin Header Assemblies**

| Number of Positions | Dimensions |               |               | Part Number | Application Tooling |          |              |          |
|---------------------|------------|---------------|---------------|-------------|---------------------|----------|--------------|----------|
|                     | A          | B             | C             |             | Insertion           | IS Sheet | Ground Blade |          |
|                     |            |               |               |             |                     |          | Repair Kit   | IS Sheet |
| 30                  | —          | 10.00<br>.393 | 14.20<br>.559 | 5120683-1   | 91313-1             | 408-4546 | 1320534-1    | 408-4573 |



**Non-Coplanar Daughtercards**  
(Pin 1a Header = Pin 1f Shroud Side)  
Recommended PC Board Layout — Reference Page 112  
(Shroud Side Shown)



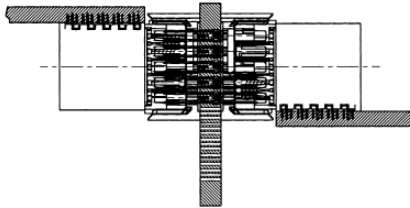
**Coplanar Daughtercards**  
(Pin 1a Header = Pin 5a Shroud Side)  
Recommended PC Board Layout — Reference Page 112  
(Shroud Side Shown)

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

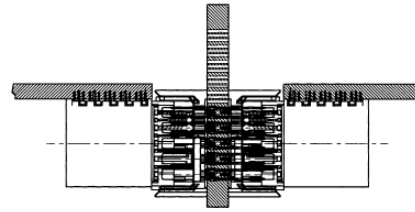
**Z-PACK HS3 Connector** (Continued)

**Layout Guide for Midplane Applications**  
**6 Row Connectors**

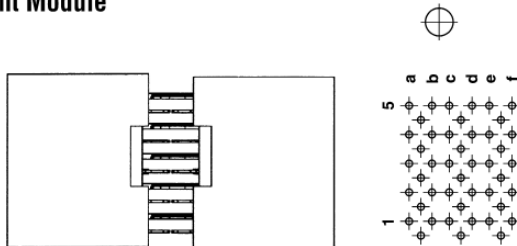
**Non-Coplanar Applications**



**Coplanar Applications**

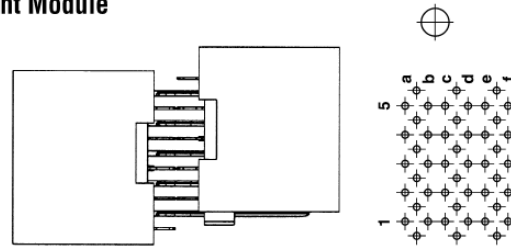


**Right Module**



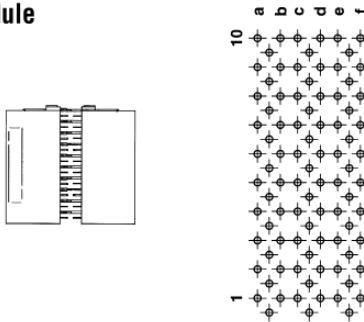
| Vertical Pin Header,<br>Feed-Through<br>Part No. | Shroud<br>Part No. |
|--|--------------------|
| 5120680  | 5120683-1          |

**Right Module**



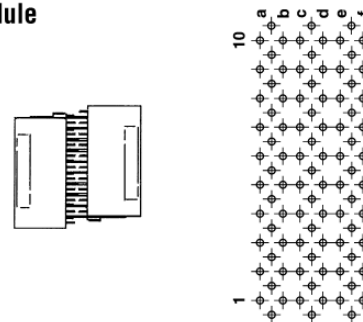
| Vertical Pin Header,<br>Feed-Through<br>Part No. | Shroud<br>Part No. |
|--|--------------------|
| 5120680  | 5120684-1          |

**Center Module**



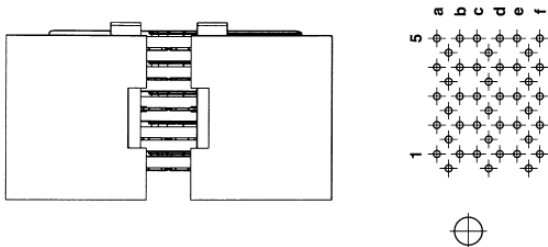
| Vertical Pin Header,<br>Feed-Through<br>Part No. | Shroud<br>Part No. |
|--|--------------------|
| 5120679  | 5120682-1          |

**Center Module**



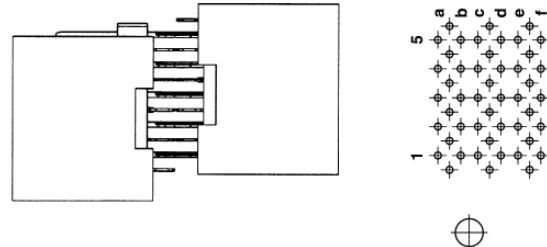
| Vertical Pin Header,<br>Feed-Through<br>Part No. | Shroud<br>Part No. |
|--|--------------------|
| 5120679  | 5120682-1          |

**Left Module**



| Vertical Pin Header,<br>Feed-Through<br>Part No. | Shroud<br>Part No. |
|--|--------------------|
| 5120681  | 5120684-1          |

**Left Module**



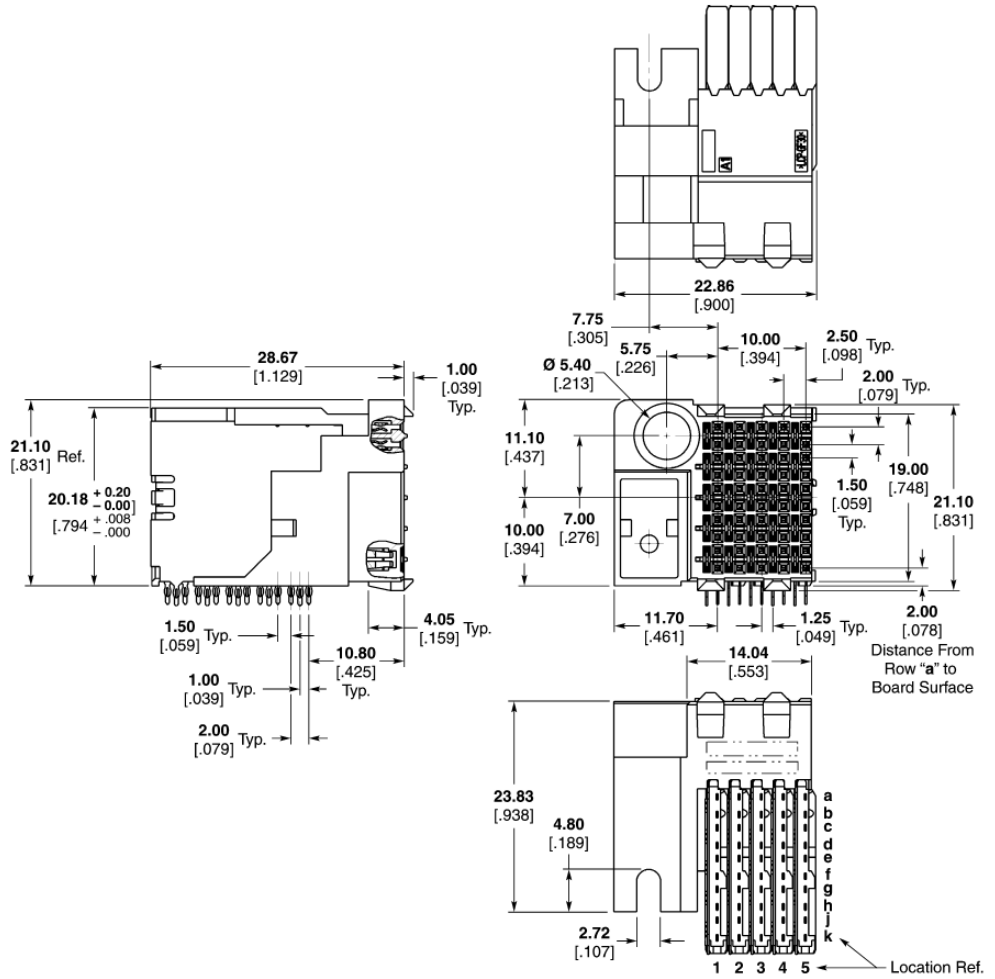
| Vertical Pin Header,<br>Feed-Through<br>Part No. | Shroud<br>Part No. |
|--|--------------------|
| 5120681  | 5120683-1          |

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

**Z-PACK HS3 Connector (Continued)**

**Right Angle Receptacle**

**10 Row, Left Module  
(accepts Universal Guide Pin)**



**4**  
Z-PACK HS3 Connector

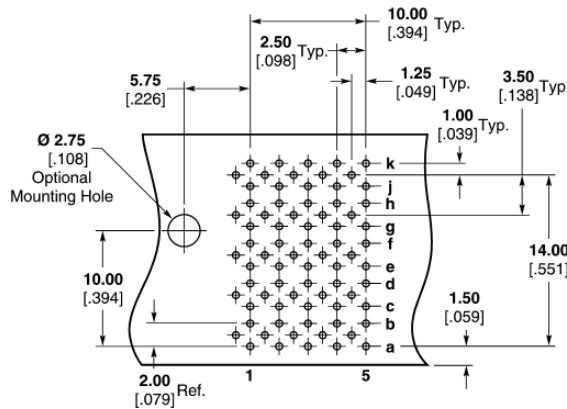
**Receptacle Assemblies**

| Number of Positions | Part Number | Application Tooling |          |             |          |                 |          |
|---------------------|-------------|---------------------|----------|-------------|----------|-----------------|----------|
|                     |             | Insertion           | IS Sheet | Hsg Removal | IS Sheet | Chiclet Removal | IS Sheet |
| 50                  | 5120875-1   | 1338743-1           | 408-8394 | 1338744-1   | 408-8393 | 1338746-1       | 408-8410 |

**P.C.B. Hole Dimensions**

- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.



**Recommended PC Board Layout  
(Component Side Shown)**

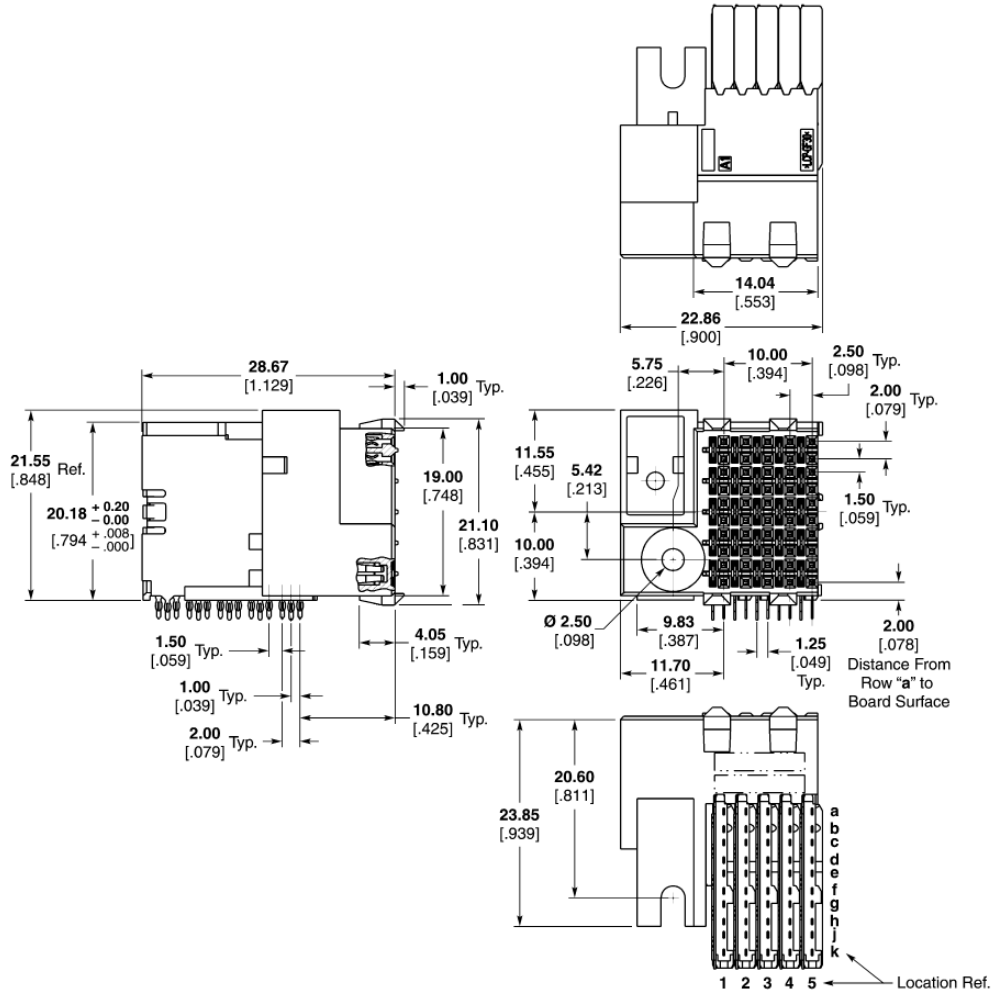
**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

**Z-PACK HS3 Connector** (Continued)

**Right Angle Receptacle**

(Continued)

**10 Row, Left Module**  
**(accepts ESD Guide Pin)**



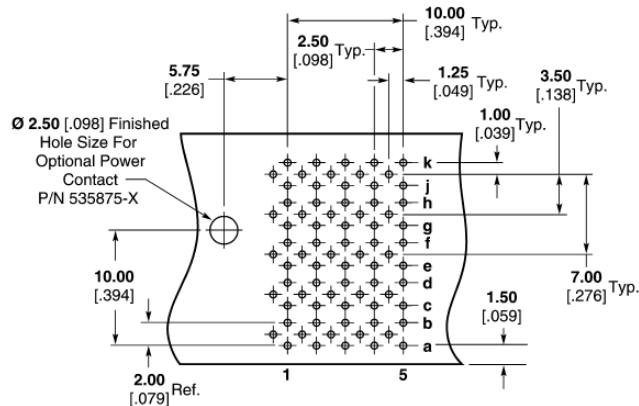
**Receptacle Assemblies**

| Number of Positions | Part Number | Application Tooling |          |             |          |                 |          |
|---------------------|-------------|---------------------|----------|-------------|----------|-----------------|----------|
|                     |             | Insertion           | IS Sheet | Hsg Removal | IS Sheet | Chiclet Removal | IS Sheet |
| 50                  | 5120793-1   | 1338743-1           | 408-8394 | 1338744-1   | 408-8393 | 1338746-1       | 408-8410 |

**P.C.B. Hole Dimensions**

- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.



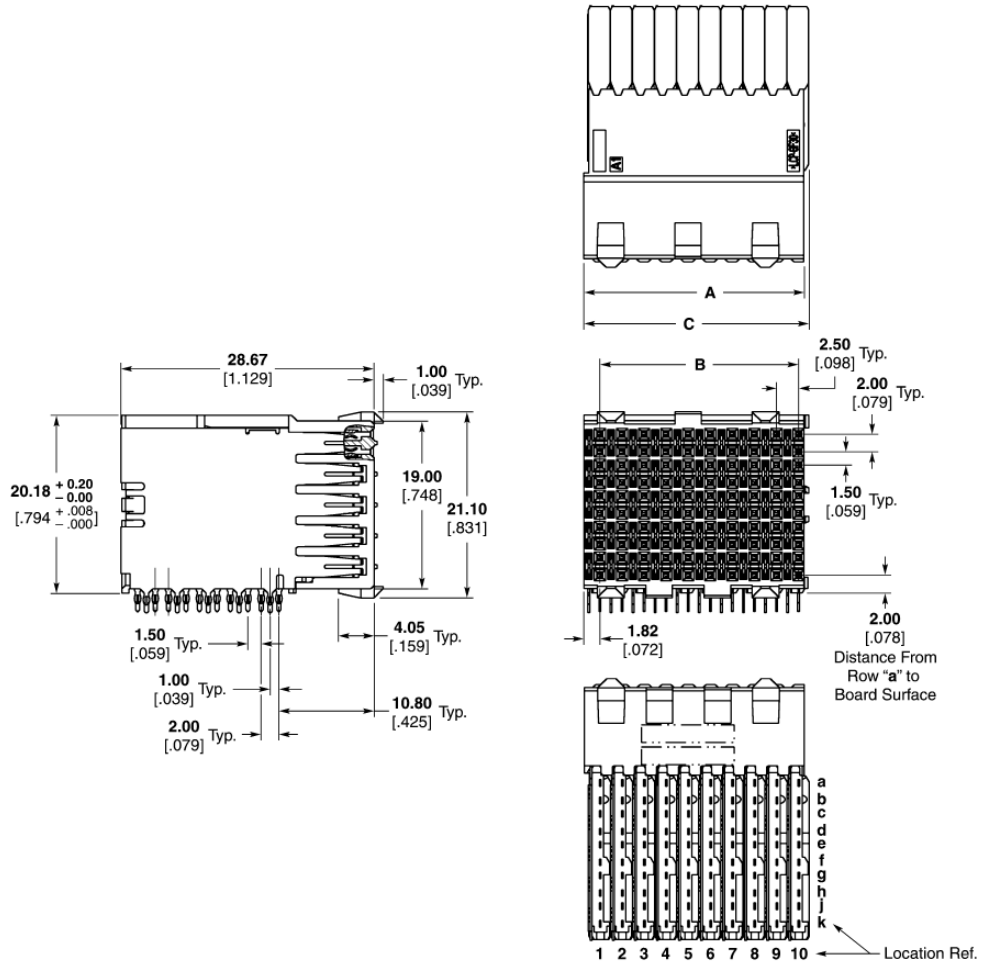
**Recommended PC Board Layout**  
**(Component Side Shown)**

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

**Z-PACK HS3 Connector (Continued)**

**Right Angle Receptacle**  
(Continued)

**10 Row, Center Module**



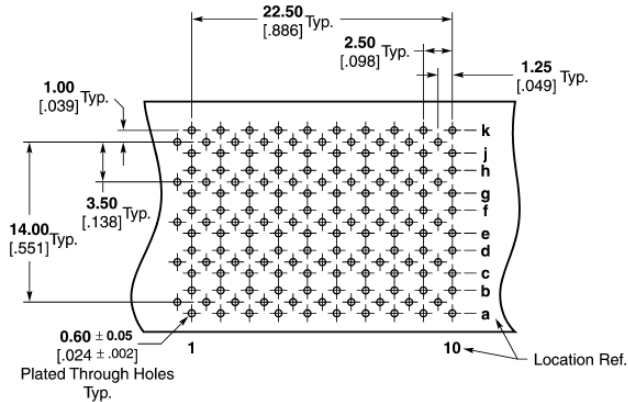
**Receptacle Assemblies**

| Number of Positions | Dimensions    |               |               | Part Number | Application Tooling |          |             |          |                 |          |
|---------------------|---------------|---------------|---------------|-------------|---------------------|----------|-------------|----------|-----------------|----------|
|                     | A             | B             | C             |             | Insertion           | IS Sheet | Hsg Removal | IS Sheet | Chiclet Removal | IS Sheet |
| 100                 | 24.94<br>.982 | 22.50<br>.886 | 25.48<br>1.03 | 5120790-1   | 1338743-2           | 408-8394 | 1338744-1   | 408-8393 | 1338746-1       | 408-8410 |
| 50                  | 12.44<br>.490 | 10.00<br>.394 | 12.90<br>.508 | 5120791-1   | 1338743-1           | 408-8394 | 1338744-1   | 408-8393 | 1338746-1       | 408-8410 |

**P.C.B. Hole Dimensions**

- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.



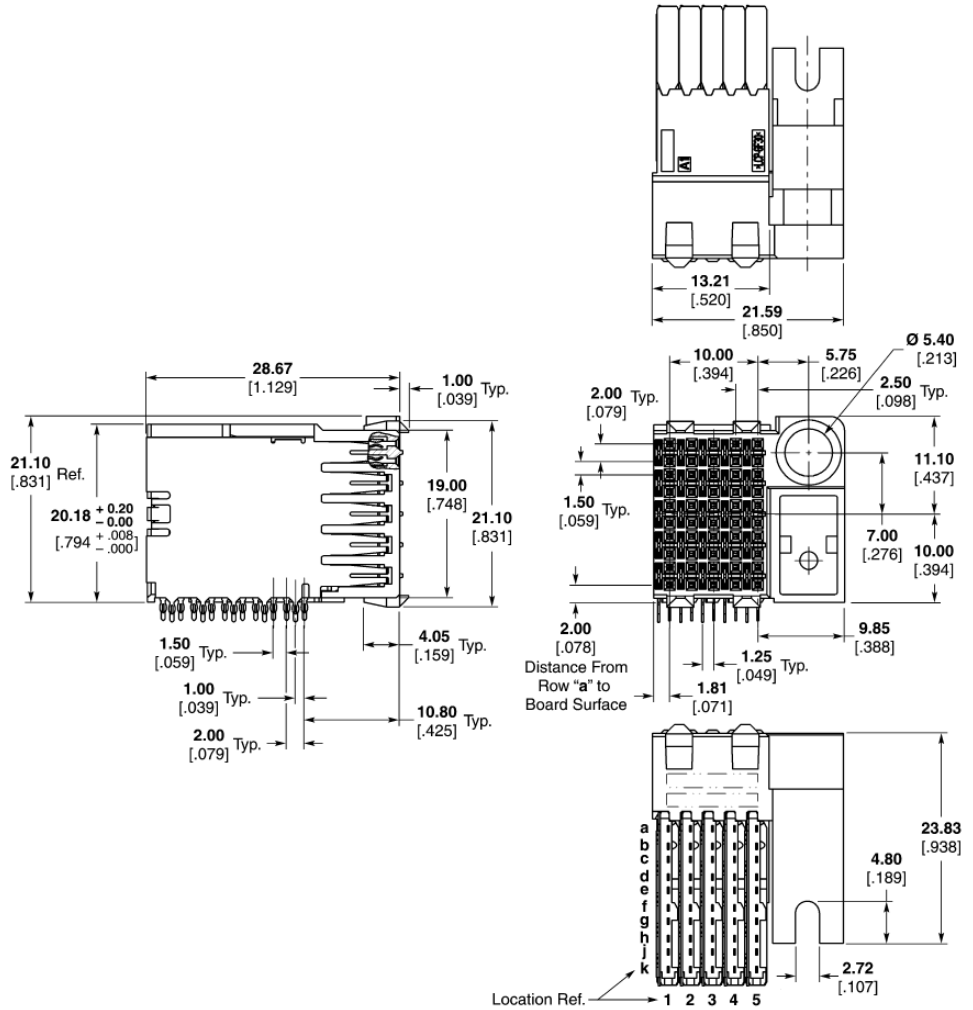
**Recommended PC Board Layout (Component Side Shown)**

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

**Z-PACK HS3 Connector (Continued)**

**Right Angle Receptacle**  
(Continued)

**10 Row, Right Module**  
(accepts Universal Guide Pin)



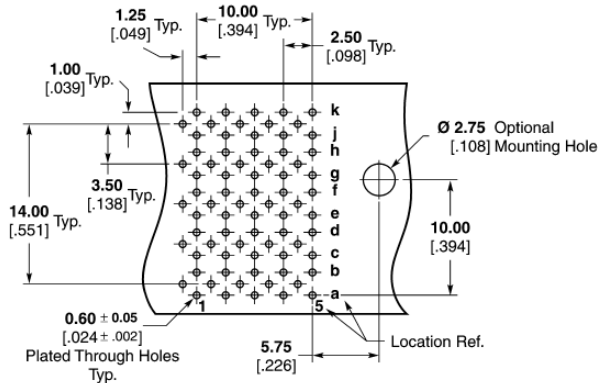
**Receptacle Assemblies**

| Number of Positions | Part Number | Application Tooling |          |             |          |                 |          |
|---------------------|-------------|---------------------|----------|-------------|----------|-----------------|----------|
|                     |             | Insertion           | IS Sheet | Hsg Removal | IS Sheet | Chiclet Removal | IS Sheet |
| 50                  | 5120874-1   | 1338743-1           | 408-8394 | 1338744-1   | 408-8393 | 1338746-1       | 408-8410 |

**P.C.B. Hole Dimensions**

- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.



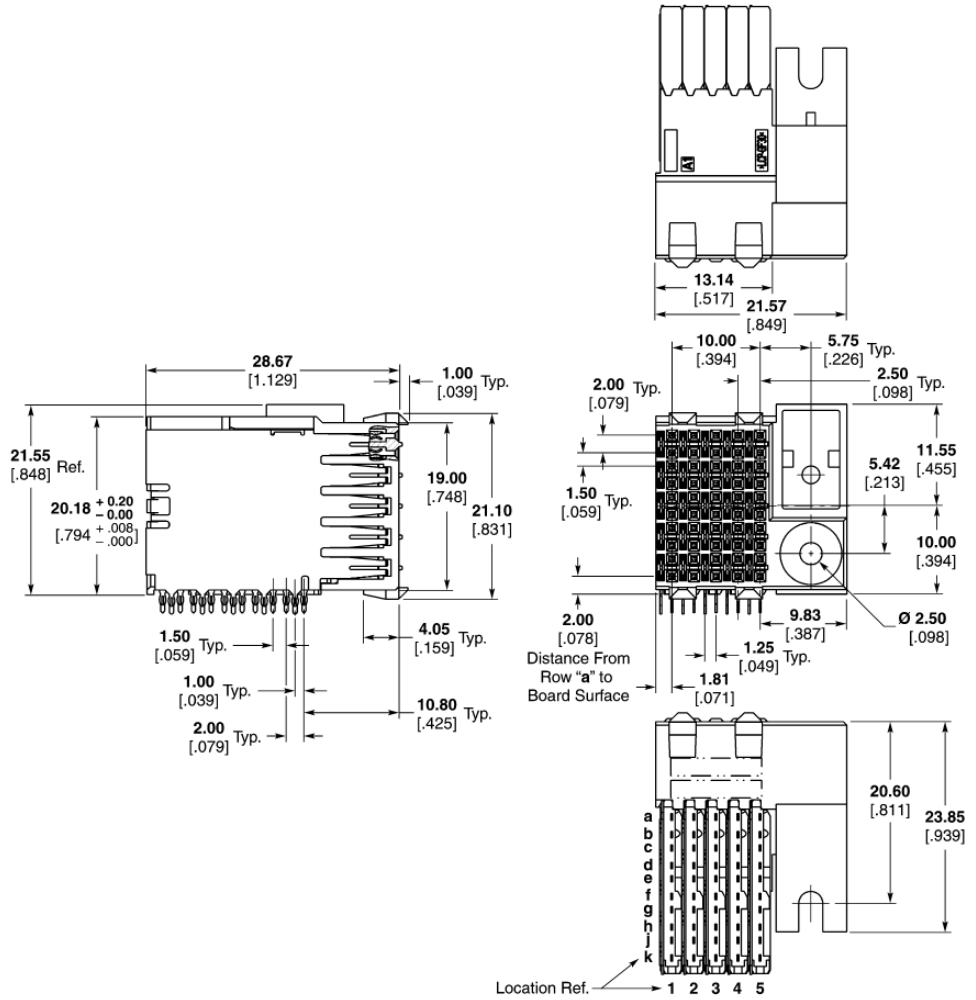
**Recommended PC Board Layout (Component Side Shown)**

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

**Z-PACK HS3 Connector (Continued)**

**Right Angle Receptacle**  
(Continued)

**10 Row, Right Module**  
(accepts ESD Guide Pin)



**4**  
Z-PACK HS3 Connector

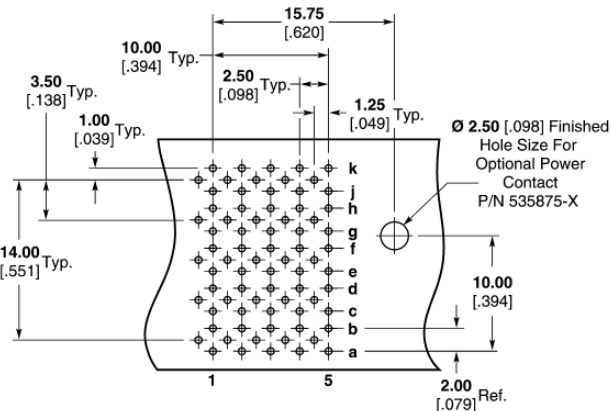
**Receptacle Assemblies**

| Number of Positions | Part Number | Application Tooling |          |             |          |                 |          |
|---------------------|-------------|---------------------|----------|-------------|----------|-----------------|----------|
|                     |             | Insertion           | IS Sheet | Hsg Removal | IS Sheet | Chiclet Removal | IS Sheet |
| 50                  | 5120792-1   | 1338743-1           | 408-8394 | 1338744-1   | 408-8393 | 1338746-1       | 408-8410 |

**P.C.B. Hole Dimensions**

- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.



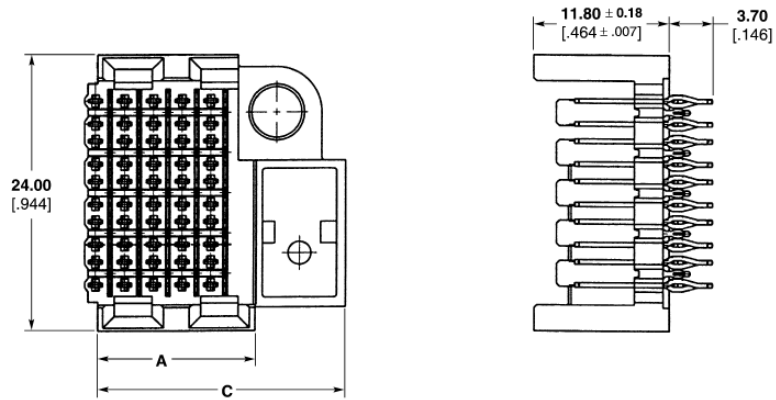
**Recommended PC Board Layout (Component Side Shown)**

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

**Z-PACK HS3 Connector (Continued)**

**Vertical Pin Header Assemblies**

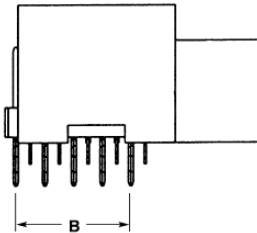
**10 Row, Left Module (accepts Universal Guide Pin)**



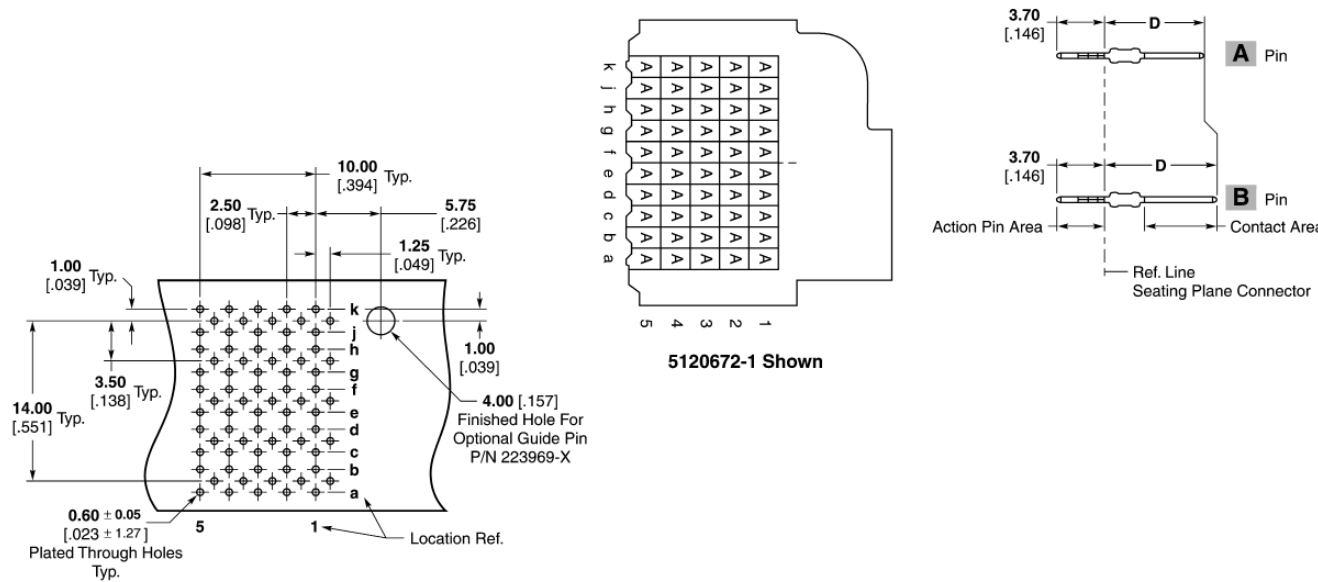
**P.C.B. Hole Dimensions**

- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.



| Number of Positions | Dimensions    |               |               |              | Pin Ref. | Part Numbers | Application Tooling |          |            |          |              |          |
|---------------------|---------------|---------------|---------------|--------------|----------|--------------|---------------------|----------|------------|----------|--------------|----------|
|                     | A             | B             | C             | D            |          |              | Seating             |          | Signal Pin |          | Ground Blade |          |
|                     |               |               |               |              |          |              | Seating             | IS Sheet | Repair Kit | IS Sheet | Repair Kit   | IS Sheet |
| 50                  | 13.70<br>.539 | 10.00<br>.394 | 21.61<br>.851 | 8.20<br>.323 | <b>A</b> | 5120672-1    | 91312-1             | 408-4546 | 354687-2   | 408-9979 | 1320534-2    | 408-4573 |
|                     | 13.70<br>.539 | 10.00<br>.394 | 21.61<br>.851 | 9.70<br>.383 | <b>B</b> | 5120672-2    | 91312-1             | 408-4546 | 354687-2   | 408-9979 | 1320534-2    | 408-4573 |



**Recommended PC Board Layout (Component Side Shown) For Non-Midplane Applications For Midplane Applications Reference Page 126**

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.



**Z-PACK HS3 Connector (Continued)**

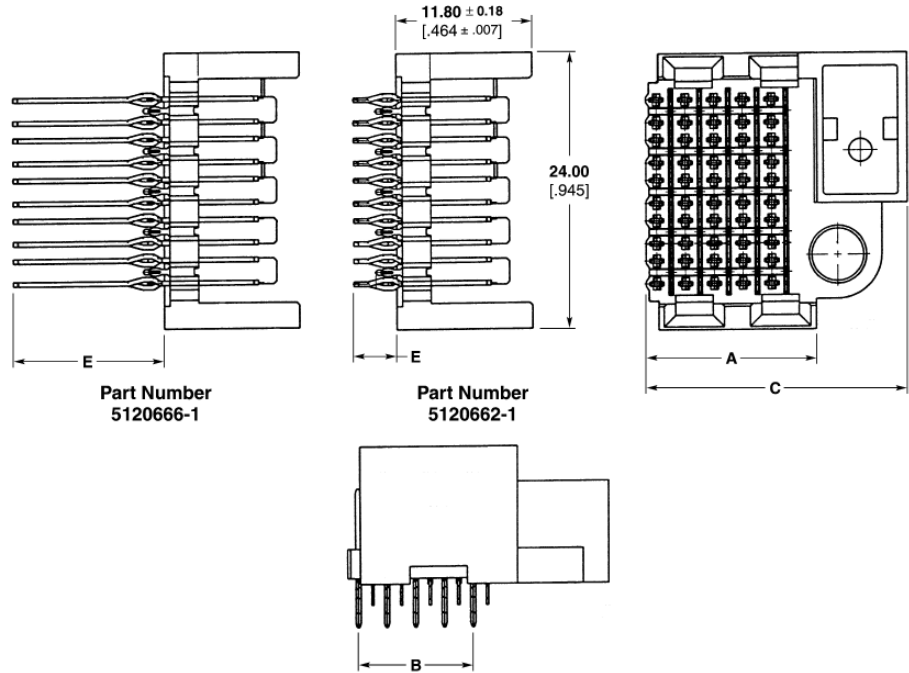
**Vertical Pin Header Assemblies (Continued)**

**10 Row, Left Module (accepts ESD Guide Pin)**

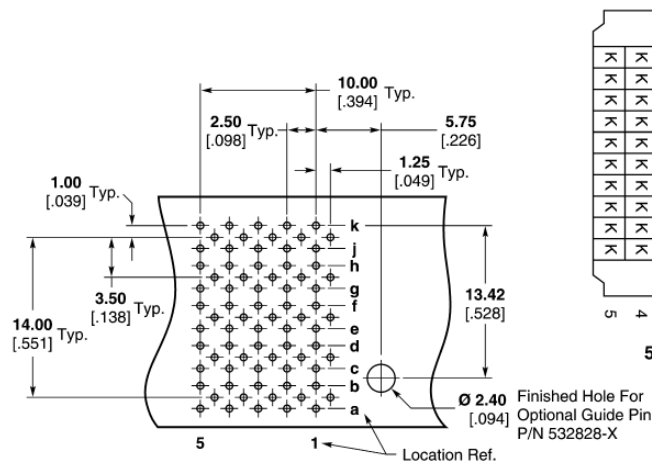
**P.C.B. Hole Dimensions**

- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

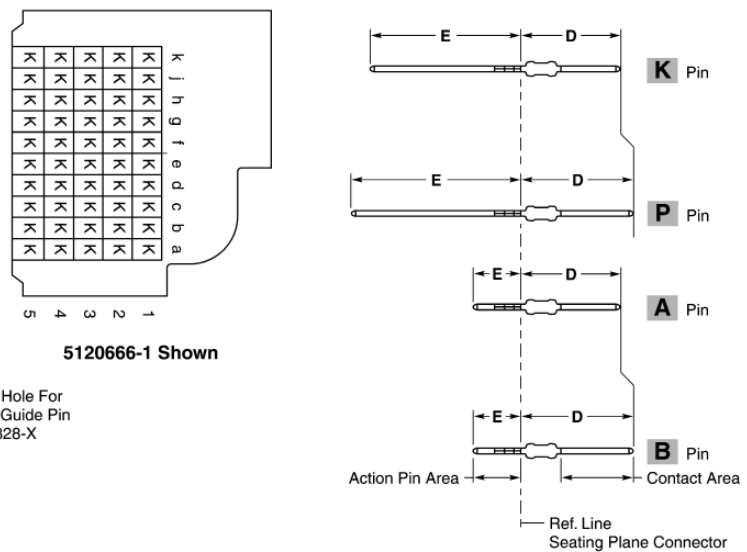
**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.



| Number of Positions | Dimensions    |               |               |              |               | Pin Ref. | Part Numbers | Application Tooling |          |            |          |              |          |
|---------------------|---------------|---------------|---------------|--------------|---------------|----------|--------------|---------------------|----------|------------|----------|--------------|----------|
|                     | A             | B             | C             | D            | E             |          |              | Seating             | IS Sheet | Signal Pin |          | Ground Blade |          |
|                     | Repair Kit    | IS Sheet      | Repair Kit    | IS Sheet     |               |          |              |                     |          |            |          |              |          |
| 50                  | 14.80<br>.583 | 10.00<br>.394 | 22.71<br>.894 | 8.20<br>.323 | 3.70<br>.146  | <b>A</b> | 5120662-1    | 91312-1             | 408-4546 | 354687-2   | 408-9979 | 1320534-2    | 408-4573 |
|                     | 14.80<br>.583 | 10.00<br>.394 | 22.71<br>.894 | 9.70<br>.382 | 3.70<br>.146  | <b>B</b> | 5120662-2    | 91312-1             | 408-4546 | 354687-2   | 408-9979 | 1320534-2    | 408-4573 |
|                     | 14.80<br>.583 | 10.00<br>.394 | 22.71<br>.894 | 8.20<br>.323 | 13.00<br>.512 | <b>K</b> | 5120666-1    | 91312-1             | 408-4546 | 354687-2   | 408-9979 | 1320534-2    | 408-4573 |
|                     | 14.80<br>.583 | 10.00<br>.394 | 22.71<br>.894 | 9.70<br>.382 | 14.50<br>.571 | <b>P</b> | 5120666-2    | 91312-1             | 408-4546 | 354687-2   | 408-9979 | 1320534-2    | 408-4573 |



**Recommended PC Board Layout (Component Side Shown) For Non-Midplane Applications For Midplane Applications Reference Page 126**



**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

**Z-PACK HS3 Connector (Continued)**

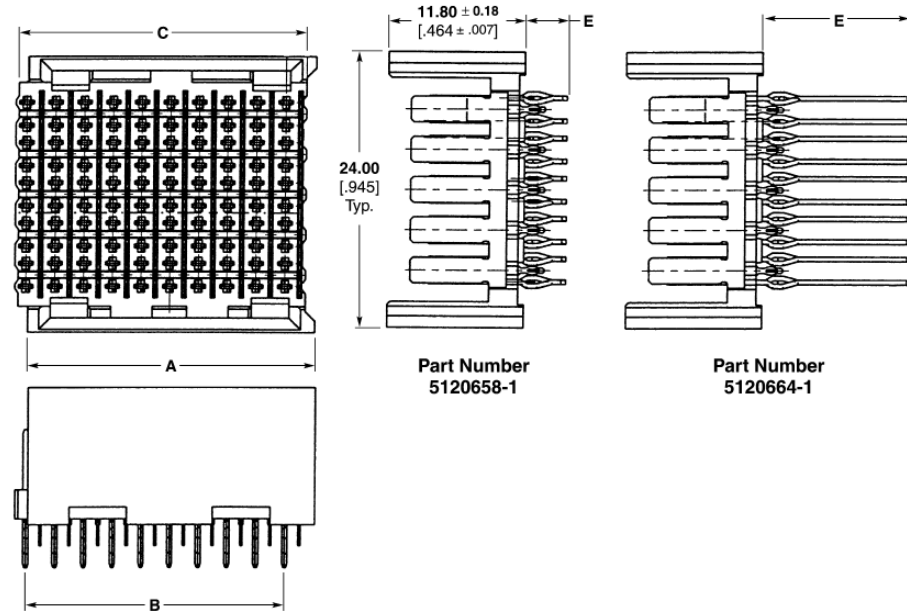
**Vertical Pin Header Assemblies (Continued)**

**10 Row, Center Module**

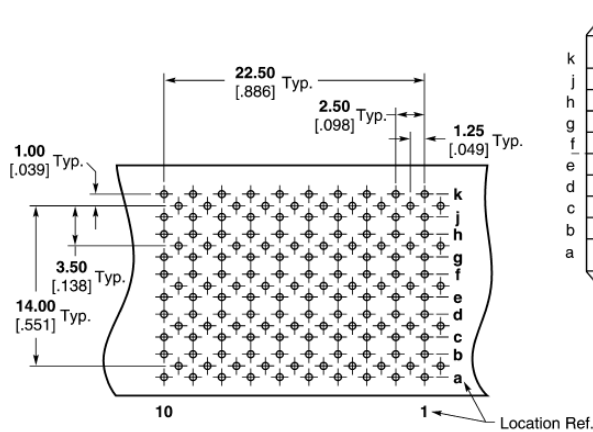
**P.C.B. Hole Dimensions**

- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

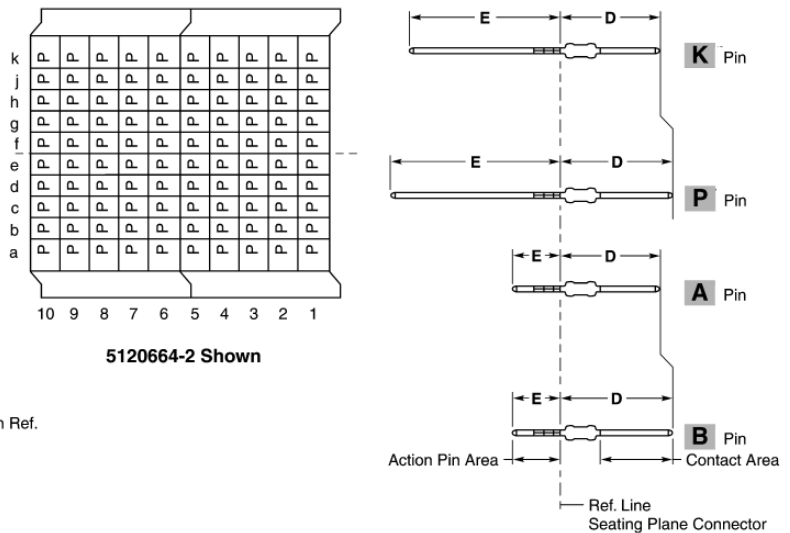
**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.



| Number of Positions | Dimensions    |               |               |              |               | Pin Ref. | Part Numbers | Seating | IS Sheet | Application Tooling |          |              |          |
|---------------------|---------------|---------------|---------------|--------------|---------------|----------|--------------|---------|----------|---------------------|----------|--------------|----------|
|                     | A             | B             | C             | D            | E             |          |              |         |          | Signal Pin          |          | Ground Blade |          |
|                     | Repair Kit    | IS Sheet      | Repair Kit    | IS Sheet     |               |          |              |         |          |                     |          |              |          |
| 100                 | 24.90<br>.980 | 22.50<br>.885 | 24.90<br>.980 | 8.20<br>.322 | 3.70<br>.145  | <b>A</b> | 5120658-1    | 91312-2 | 408-4546 | 354687-2            | 408-9979 | 1320534-2    | 408-4573 |
|                     | 24.90<br>.980 | 22.50<br>.885 | 24.90<br>.980 | 9.70<br>.381 | 3.70<br>.145  | <b>B</b> | 5120658-2    | 91312-2 | 408-4546 | 354687-2            | 408-9979 | 1320534-2    | 408-4573 |
|                     | 24.90<br>.980 | 22.50<br>.885 | 24.90<br>.980 | 8.20<br>.322 | 13.00<br>.511 | <b>K</b> | 5120664-1    | 91312-2 | 408-4546 | 354687-2            | 408-9979 | 1320534-2    | 408-4573 |
|                     | 24.90<br>.980 | 22.50<br>.885 | 24.90<br>.980 | 9.70<br>.381 | 14.50<br>.570 | <b>P</b> | 5120664-2    | 91312-2 | 408-4546 | 354687-2            | 408-9979 | 1320534-2    | 408-4573 |
| 50                  | 12.41<br>.488 | 10.00<br>.393 | 12.40<br>.488 | 8.20<br>.322 | 3.70<br>.145  | <b>A</b> | 5120747-1    | 91312-1 | 408-4546 | 354687-2            | 408-9979 | 1320534-2    | 408-4573 |
|                     | 12.41<br>.488 | 10.00<br>.393 | 12.40<br>.488 | 9.70<br>.381 | 3.70<br>.145  | <b>B</b> | 5120747-2    | 91312-1 | 408-4546 | 354687-2            | 408-9979 | 1320534-2    | 408-4573 |
|                     | 12.41<br>.488 | 10.00<br>.393 | 12.40<br>.488 | 8.20<br>.322 | 13.00<br>.511 | <b>K</b> | 5120748-1    | 91312-1 | 408-4546 | 354687-2            | 408-9979 | 1320534-2    | 408-4573 |
|                     | 12.41<br>.488 | 10.00<br>.393 | 12.40<br>.488 | 9.70<br>.381 | 14.50<br>.570 | <b>P</b> | 5120748-2    | 91312-1 | 408-4546 | 354687-2            | 408-9979 | 1320534-2    | 408-4573 |



**Recommended PC Board Layout (Component Side Shown)**  
For Non-Midplane Applications  
For Midplane Applications Reference Page 126



**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

**Z-PACK HS3 Connector (Continued)**

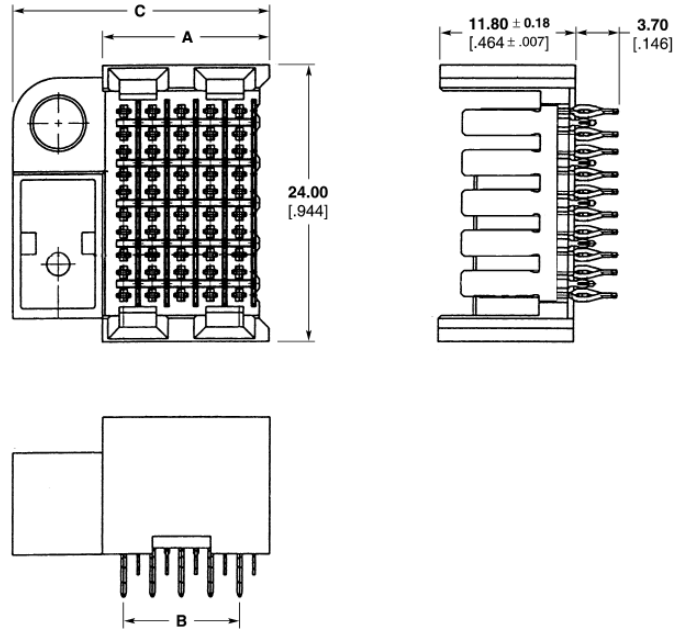
**Vertical Pin Header Assemblies (Continued)**

**10 Row, Right Module (accepts Universal Guide Pin)**

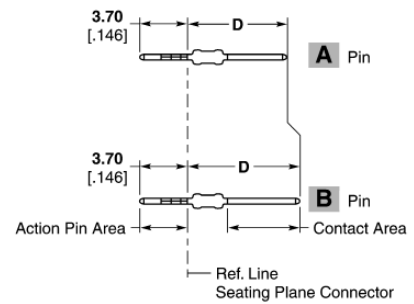
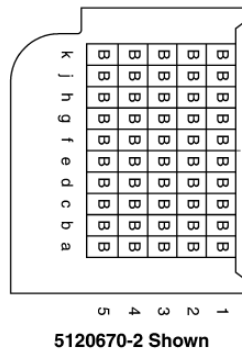
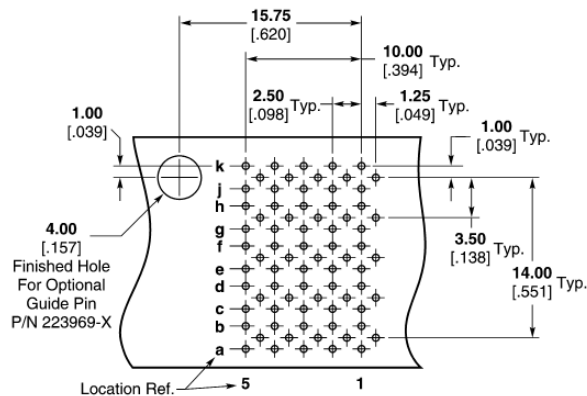
**P.C.B. Hole Dimensions**

- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.



| Number of Positions | Dimensions    |               |               |              | Pin Ref. | Part Numbers | Seating | IS Sheet | Application Tooling |          |              |          |
|---------------------|---------------|---------------|---------------|--------------|----------|--------------|---------|----------|---------------------|----------|--------------|----------|
|                     | A             | B             | C             | D            |          |              |         |          | Signal Pin          |          | Ground Blade |          |
|                     | Repair Kit    | IS Sheet      | Repair Kit    | IS Sheet     |          |              |         |          |                     |          |              |          |
| 50                  | 14.45<br>.568 | 10.00<br>.393 | 22.28<br>.877 | 8.20<br>.322 | <b>A</b> | 5120670-1    | 91312-1 | 408-4546 | 354687-2            | 408-9979 | 1320534-2    | 408-4573 |
|                     | 14.45<br>.568 | 10.00<br>.393 | 22.28<br>.877 | 9.70<br>.381 | <b>B</b> | 5120670-2    | 91312-1 | 408-4546 | 354687-2            | 408-9979 | 1320534-2    | 408-4573 |



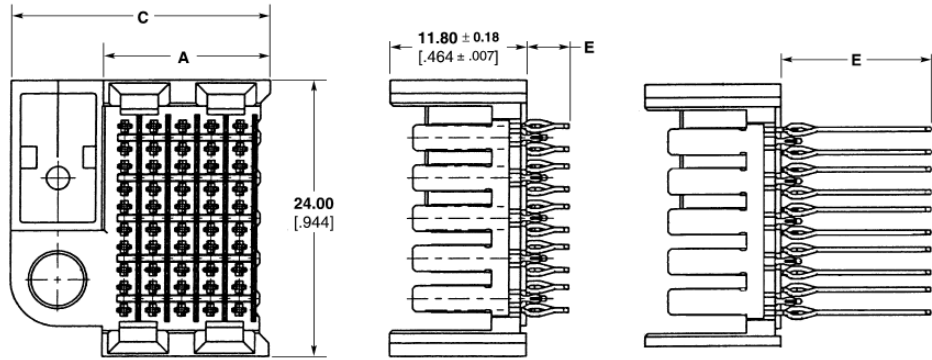
**Recommended PC Board Layout (Component Side Shown) For Non-Midplane Applications For Midplane Applications Reference Page 126**

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

**Z-PACK HS3 Connector (Continued)**

**Vertical Pin Header Assemblies (Continued)**

**10 Row, Right Module (accepts ESD Guide Pin)**

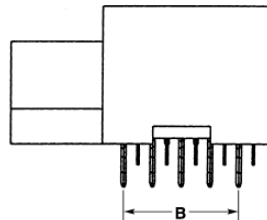


Part Number  
5120661-1

Part Number  
5120665-1

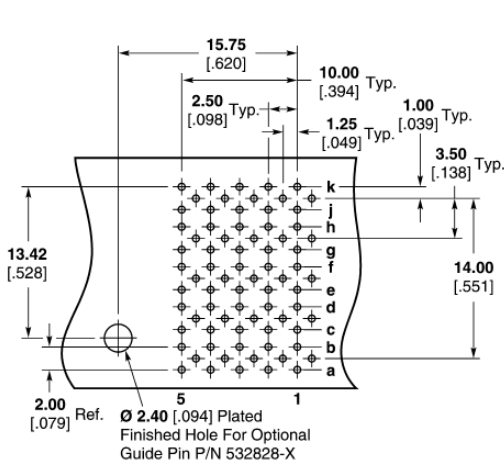
**P.C.B. Hole Dimensions**

- Drilled Hole — 0.7±0.025mm
- Fin. Hole — 0.55 to 0.65mm
- Cu-thickness — 0.025 to 0.050mm
- SnPb-thickness — 0.004 to 0.010mm

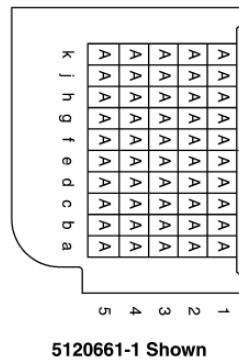


**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.

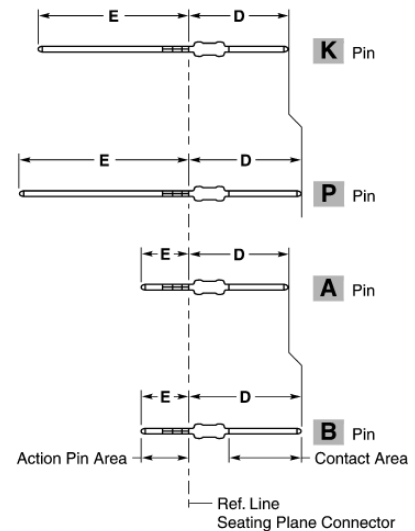
| Number of Positions | Dimensions    |               |               |              |               | Pin Ref. | Part Numbers | Application Tooling |          |            |          |              |          |
|---------------------|---------------|---------------|---------------|--------------|---------------|----------|--------------|---------------------|----------|------------|----------|--------------|----------|
|                     | A             | B             | C             | D            | E             |          |              | Seating             | IS Sheet | Signal Pin |          | Ground Blade |          |
|                     | Repair Kit    | IS Sheet      | Repair Kit    | IS Sheet     |               |          |              |                     |          |            |          |              |          |
| 50                  | 14.46<br>.569 | 10.00<br>.393 | 22.28<br>.877 | 8.20<br>.322 | 3.70<br>.145  | <b>A</b> | 5120661-1    | 91312-1             | 408-4546 | 354687-2   | 408-9979 | 1320534-2    | 408-4573 |
|                     | 14.46<br>.569 | 10.00<br>.393 | 22.28<br>.877 | 9.70<br>.381 | 3.70<br>.145  | <b>B</b> | 5120661-2    | 91312-1             | 408-4546 | 354687-2   | 408-9979 | 1320534-2    | 408-4573 |
|                     | 14.46<br>.569 | 10.00<br>.393 | 22.28<br>.877 | 8.20<br>.322 | 13.00<br>.511 | <b>K</b> | 5120665-1    | 91312-1             | 408-4546 | 354687-2   | 408-9979 | 1320534-2    | 408-4573 |
|                     | 14.46<br>.569 | 10.00<br>.393 | 22.28<br>.877 | 9.70<br>.381 | 14.50<br>.570 | <b>P</b> | 5120665-2    | 91312-1             | 408-4546 | 354687-2   | 408-9979 | 1320534-2    | 408-4573 |



**Recommended PC Board Layout (Component Side Shown) For Non-Midplane Applications For Midplane Applications Reference Page 126**



5120661-1 Shown

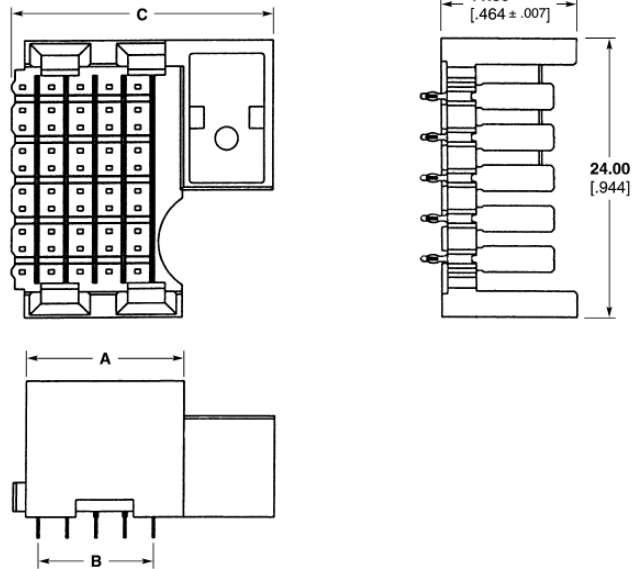


**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

**Z-PACK HS3 Connector (Continued)**

**Vertical Pin Header Shrouds**

**10 Row, Left Module**



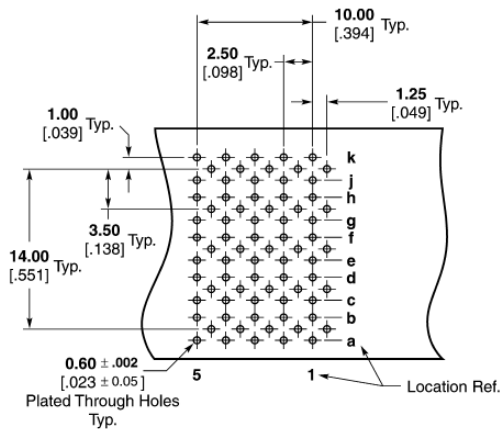
**P.C.B. Hole Dimensions**

- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

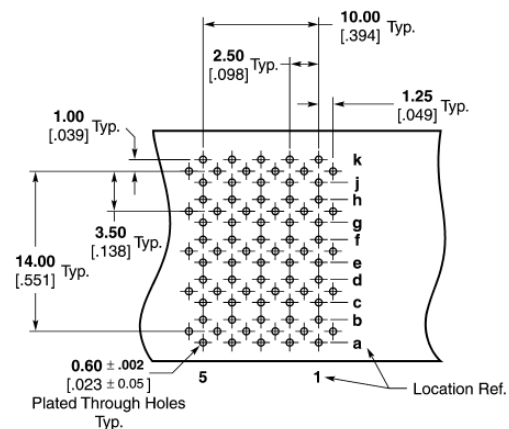
**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.

**Receptacle Assemblies**

| Number of Positions | Dimensions    |               |               | Part Number | Application Tooling |          |              |          |
|---------------------|---------------|---------------|---------------|-------------|---------------------|----------|--------------|----------|
|                     | A             | B             | C             |             | Seating             | IS Sheet | Ground Blade |          |
|                     |               |               |               |             |                     |          | Repair Kit   | IS Sheet |
| 50                  | 13.70<br>.539 | 10.00<br>.877 | 22.80<br>.322 | 5120668-1   | 91312-1             | 408-4546 | 1320534-2    | 408-4573 |



**Non-Coplanar Daughtercards**  
(Pin 1a Header = Pin 1k Shroud Side)  
Recommended PC Board Layout — Reference Page 126  
(Shroud Side Shown)



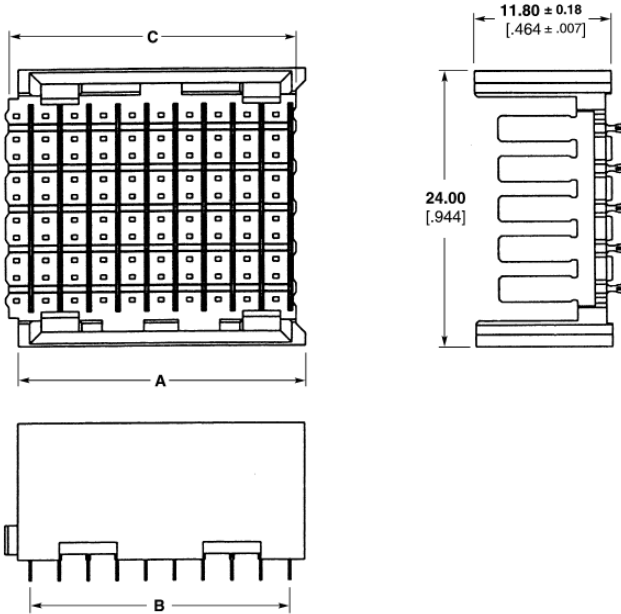
**Coplanar Daughtercards**  
(Pin 1a Header = Pin 5a Shroud Side)  
Recommended PC Board Layout — Reference Page 126  
(Shroud Side Shown)

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

**Z-PACK HS3 Connector** (Continued)

**Vertical Pin Header Shrouds** (Continued)

**10 Row, Center Module**



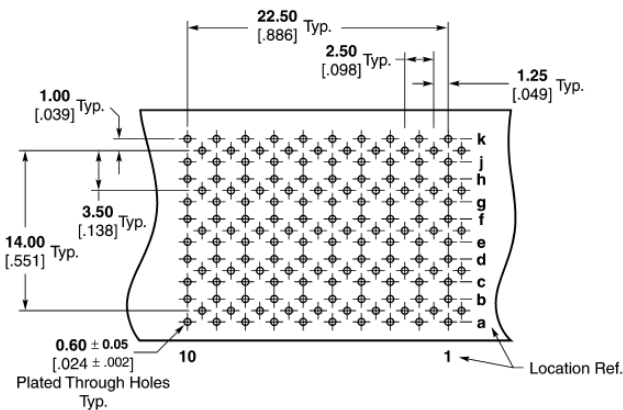
**P.C.B. Hole Dimensions**

- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

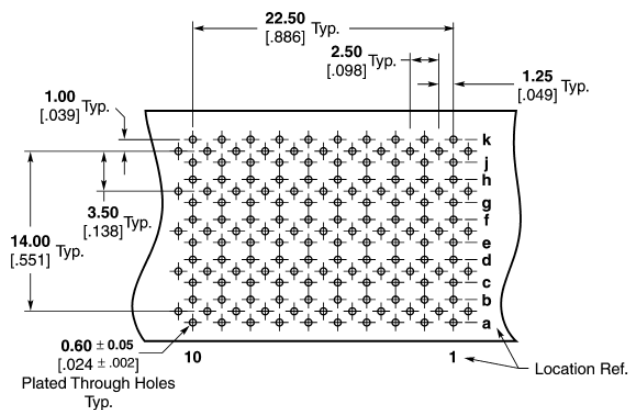
**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.

**Receptacle Assemblies**

| Number of Positions | Dimensions      |                 |                 | Part Number | Application Tooling |          |              |          |
|---------------------|-----------------|-----------------|-----------------|-------------|---------------------|----------|--------------|----------|
|                     | A               | B               | C               |             | Seating             | IS Sheet | Ground Blade |          |
|                     |                 |                 |                 |             |                     |          | Repair Kit   | IS Sheet |
| 100                 | 24.90<br>[.980] | 22.50<br>[.886] | 24.90<br>[.980] | 5120663-1   | 91312-2             | 408-4546 | 1320534-2    | 408-4573 |
| 50                  | 12.41<br>[.488] | 10.00<br>[.394] | 12.40<br>[.488] | 5120750-1   | 91312-1             | 408-4546 | 1320534-2    | 408-4573 |



**Non-Coplanar Daughtercards**  
(Pin 1a Header = Pin 1k Shroud Side)  
**Recommended PC Board Layout — Reference Page 126**  
(Shroud Side Shown)



**Coplanar Daughtercards**  
(Pin 1a Header = Pin 10a Shroud Side)  
**Recommended PC Board Layout — Reference Page 126**  
(Shroud Side Shown)

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

**Z-PACK HS3 Connector** (Continued)

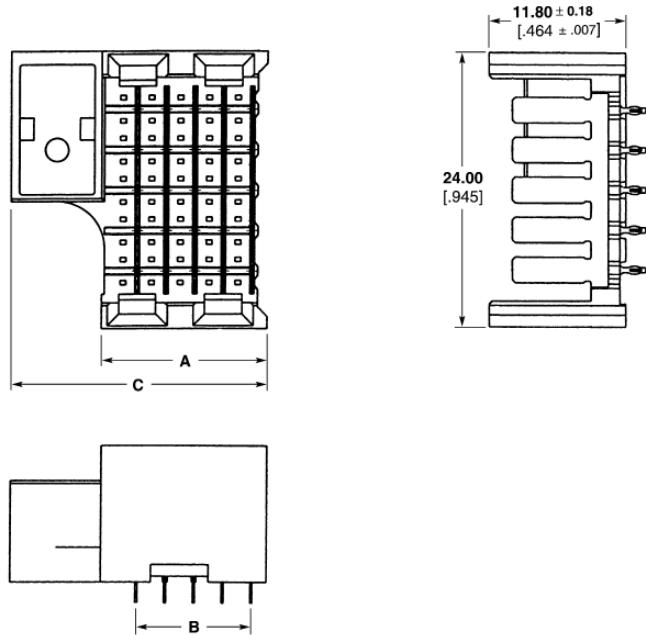
**Vertical Pin Header Shrouds** (Continued)

**10 Row, Right Module**

**P.C.B. Hole Dimensions**

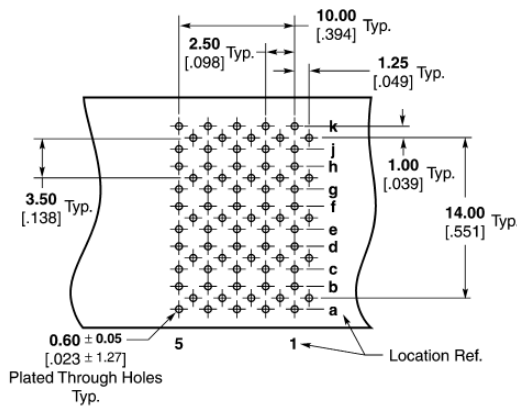
- Drilled Hole** — 0.7±0.025mm
- Fin. Hole** — 0.55 to 0.65mm
- Cu-thickness** — 0.025 to 0.050mm
- SnPb-thickness** — 0.004 to 0.010mm

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-13020.

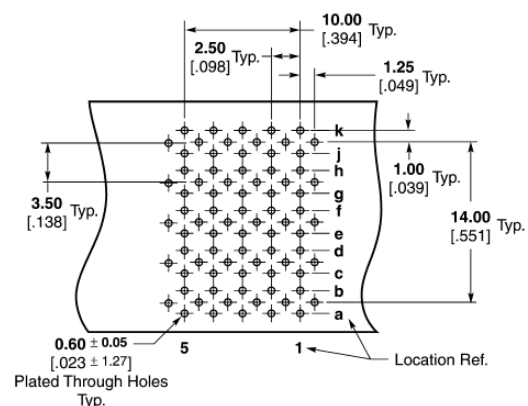


**Receptacle Assemblies**

| Number of Positions | Dimensions    |               |               | Part Number | Application Tooling |          |              |          |
|---------------------|---------------|---------------|---------------|-------------|---------------------|----------|--------------|----------|
|                     | A             | B             | C             |             | Seating             | IS Sheet | Ground Blade |          |
|                     |               |               |               |             |                     |          | Repair Kit   | IS Sheet |
| 50                  | 14.46<br>.569 | 10.00<br>.394 | 22.28<br>.877 | 5120667-1   | 91312-1             | 408-4546 | 1320534-2    | 408-4573 |



**Non-Coplanar Daughtercards**  
(Pin 1a Header = Pin 1k Shroud Side)  
Recommended PC Board Layout — Reference Page 126  
(Shroud Side Shown)



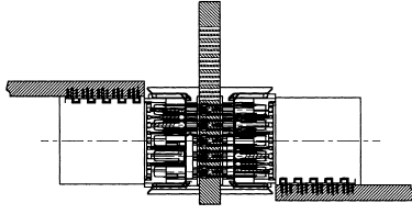
**Coplanar Daughtercards**  
(Pin 1a Header = Pin 5a Shroud Side)  
Recommended PC Board Layout — Reference Page 126  
(Shroud Side Shown)

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

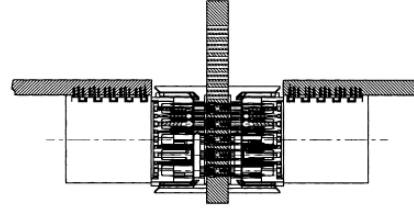
**Z-PACK HS3 Connector (Continued)**

**Layout Guide for Midplane Applications  
10 Row Connectors**

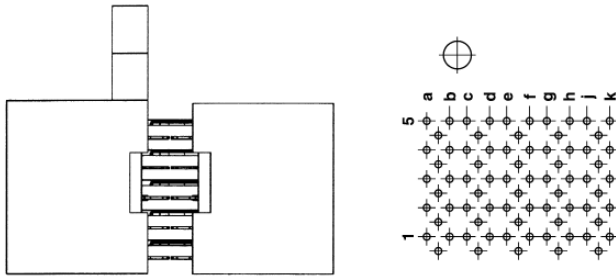
**Non-Coplanar Applications**



**Coplanar Applications**

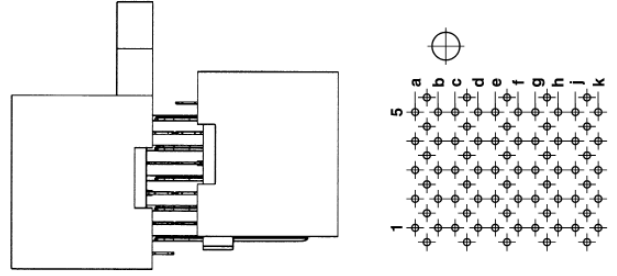


**Right Module**



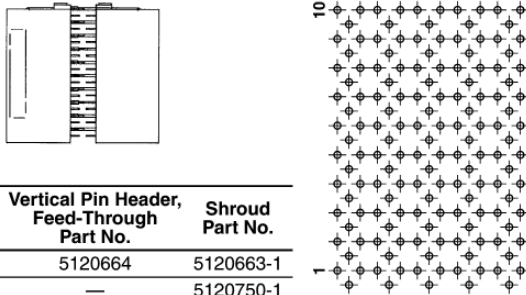
| Vertical Pin Header, Feed-Through Part No. | Shroud Part No. |
|--|-----------------|
| 5120665                                    | 5120667-1       |

**Right Module**



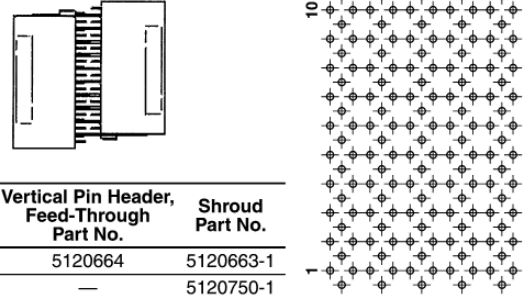
| Vertical Pin Header, Feed-Through Part No. | Shroud Part No. |
|--|-----------------|
| 5120665                                    | 5120668-1       |

**Center Module**



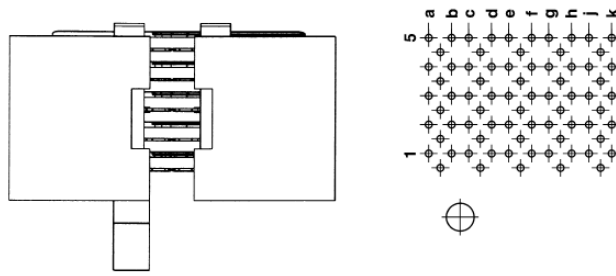
| No. of Pos. | Vertical Pin Header, Feed-Through Part No. | Shroud Part No. |
|-------------|--|-----------------|
| 100         | 5120664                                    | 5120663-1       |
| 50          | —  | 5120750-1       |

**Center Module**



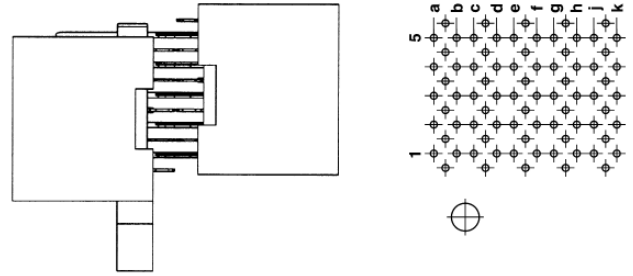
| No. of Pos. | Vertical Pin Header, Feed-Through Part No. | Shroud Part No. |
|-------------|--|-----------------|
| 100         | 5120664                                    | 5120663-1       |
| 50          | —  | 5120750-1       |

**Left Module**



| Vertical Pin Header, Feed-Through Part No. | Shroud Part No. |
|--|-----------------|
| 5120666                                    | 5120667-1       |

**Left Module**



| Vertical Pin Header, Feed-Through Part No. | Shroud Part No. |
|--|-----------------|
| 5120666                                    | 5120668-1       |

**Note:** All part numbers are RoHS compliant.



**Z-PACK HS3 Connector (Continued)**

**Coding Keys (10 Row Only)**

**Compatibility** — Z-PACK HS3, Z-PACK 12 row connectors  
Part Number 120639-3 (white)  
Part Number 120639-6 (red)

**Material & Finish** — Valox

**Power and Guide Hardware  
Universal Power Module  
Vertical Receptacle (3 Pos.)**

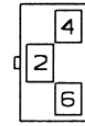
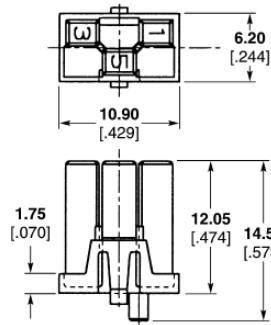
The Tyco Electronics Universal Power Module is a multi-position, modular, hard metric board-to-board power connector designed to be compatible with Z-PACK 2mm HM connectors. The design is in an "inverse-sex" orientation and the vertical receptacle module meets the IEC 950 safety requirements for finger probe protection.

Both the headers and receptacle utilize Tyco Electronics ACTION PIN press-fit leads for ease of assembly onto printed circuit boards. Additionally, the vertical receptacle leads are polarized to allow only one orientation onto the printed circuit board, eliminating the possibility of reverse placement.

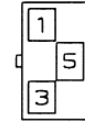
The Universal Power Module is compatible with a wide variety of other Tyco Electronics board-to-board connectors including Z-PACK HS3, Z-PACK HM-Zd and Z-PACK TinMan connectors.

The right angle header contacts are available with sequenced lengths for "make-first/break-last" applications.

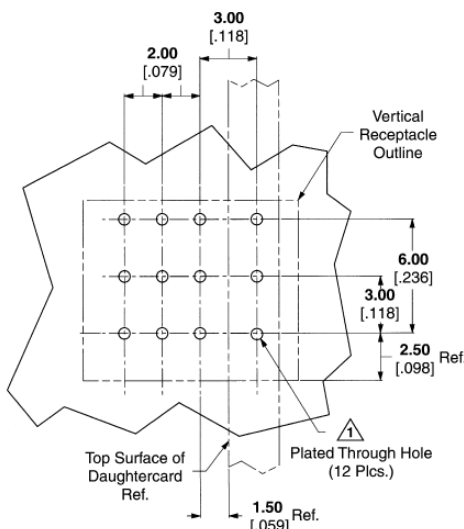
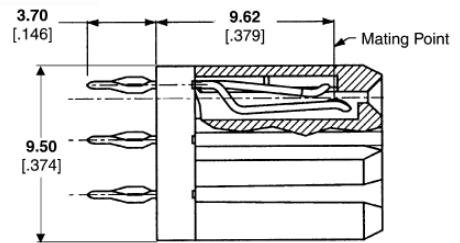
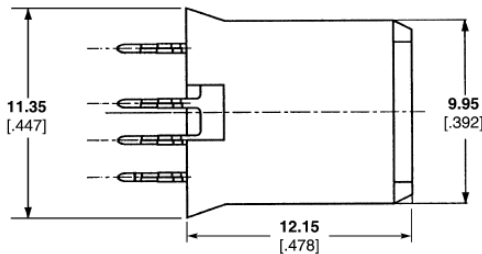
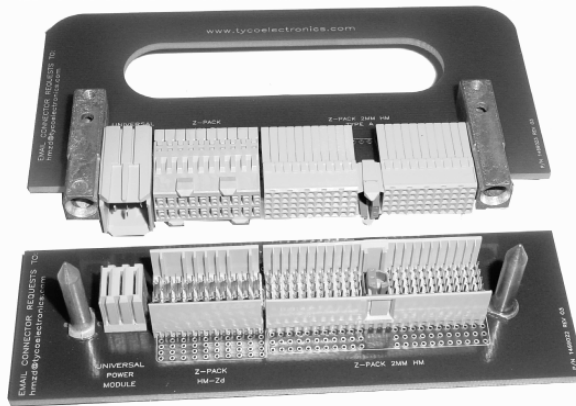
Generous alignment features designed into the housings and optional guide pins and receptacles make the Tyco Electronics Universal Power Module ideal for "blind mating" applications.



**Part Number 120639-6**



**Part Number 120639-3**



**Recommended PC Board Hole Layout**

|                     | Position Loaded | Part Numbers |
|---------------------|-----------------|--------------|
| Vertical Receptacle | ABC             | 5223955-2    |
|                     | AC              | 5223984-1    |
| High Current        | ABC             | 5-5223955-2  |

**PCB Hole Dim.**  
Drilled Hole =  $0.7000 \pm 0.025$  [0.02756 ± .0010]  
Finished Hole =  $0.60 \pm 0.05$  [0.024 ± .002]  
Cu Thickness =  $0.375 \pm 0.0125$  [0.0148 ± .00049]  
SnPb Thickness =  $0.007 \pm 0.003$  [0.0003 ± .0001]

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-1103.

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

**Z-PACK HS3 Connector (Continued)**

**Power and Guide Hardware**  
(Continued)

**Expanded Universal Power Module Vertical Receptacles**

**Material and Finish**

**Housing** — Polyester, gray  
**Contact** — Copper alloy, plated 0.00127 [.000050] min. gold in mating area, 0.00050 [.000020] min. Tin-Lead on ACTION PIN product area, with entire contact underplated 0.00127 [.000050] min. nickel

**Related Product Data**

**Guiding Hardware** (Optional) — pages 132 and 133

**Application Tooling**

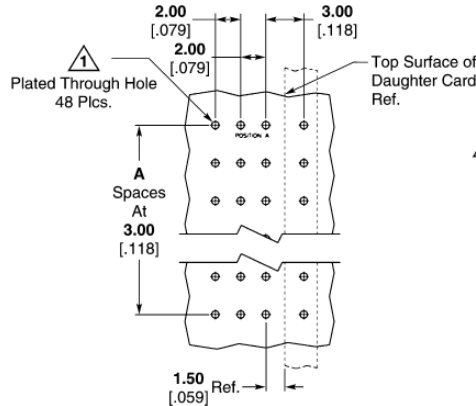
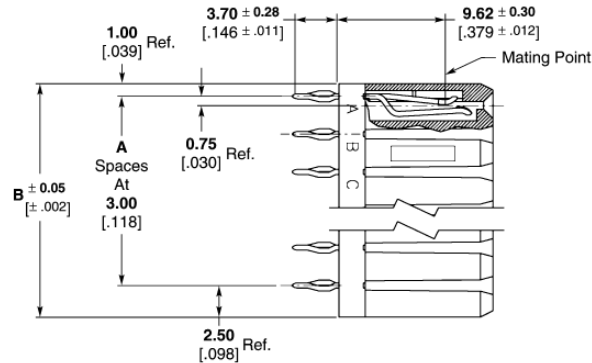
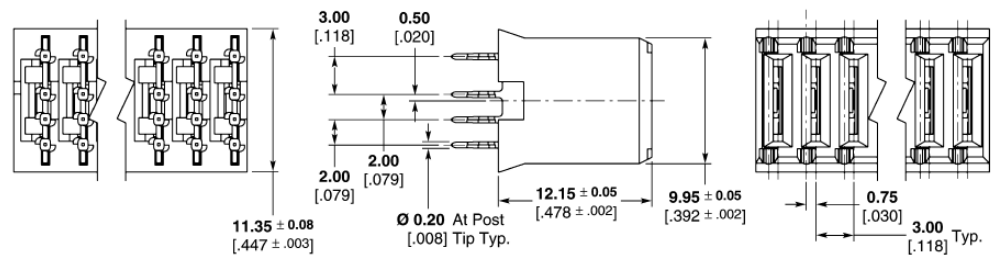
**Header**  
 Seating Tool, 224441-1  
 Board Support Fixture, 224442-1  
**Receptacle**  
 Seating Tool, 224421-1  
 Board Support Fixture, 217602-1

**Technical Documents**

**Product Specification**  
 108-1651  
**Application Specification**  
 114-1103

**Tyco Electronics Instruction Sheet**

408-4169 (Receptacle)  
 Seating Tool 224421-1)



**PCB Hole Dim.**  
 Drilled Hole =  $0.7000 \pm 0.025$  [.02756 ± .0010]  
 Finished Hole =  $0.60 \pm 0.05$  [.024 ± .002]  
 Cu Thickness =  $0.375 \pm 0.0125$  [.0148 ± .00049]  
 SnPb Thickness =  $0.007 \pm 0.003$  [.0003 ± .0001]

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-1103.

**Recommended PCB Hole Layout**

| Position | A | B Ref.        | Standard *10A Part Number | High Current *15A Part Number |
|----------|---|---------------|---------------------------|-------------------------------|
| 4        | 3 | 12.50<br>.492 | 5223995-1                 | 120953-1                      |
| 5        | 4 | 15.50<br>.610 | 5223995-2                 | 120953-2                      |
| 6        | 5 | 18.50<br>.728 | 5223995-3                 | 120953-3                      |
| 7        | 6 | 21.50<br>.846 | 5223995-4                 | 120953-4                      |
| 8        | 7 | 24.50<br>.965 | 5223995-5                 | 120953-5                      |

\*Reference Product Specification 108-1651.

**Note:** For additional Power Module options reference Catalog 1773096, "Power Connectors and Interconnection Systems," or contact your Tyco Electronics Sales Representative.

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

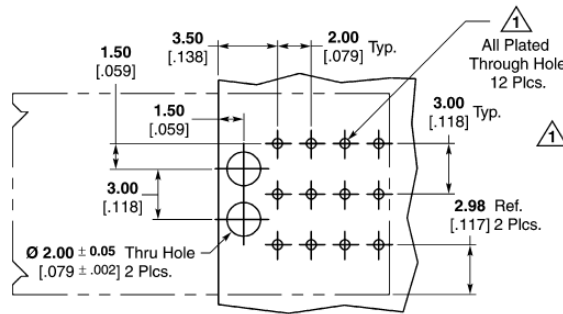
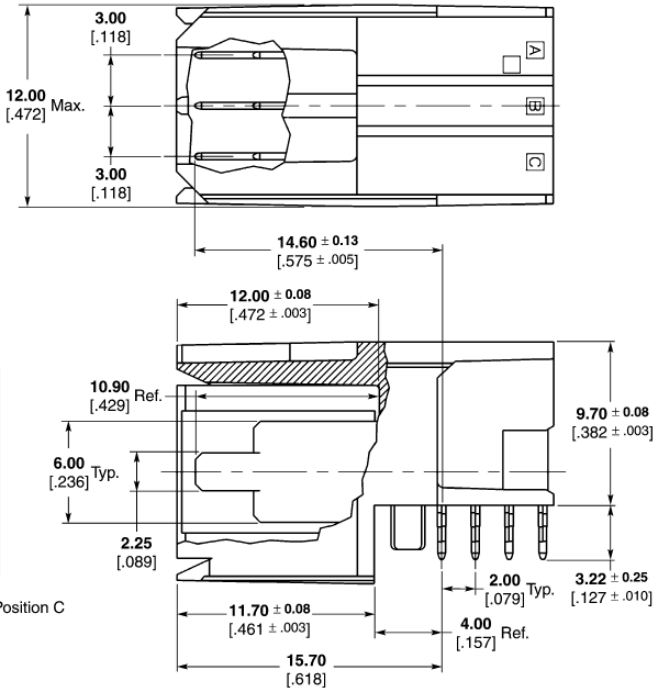
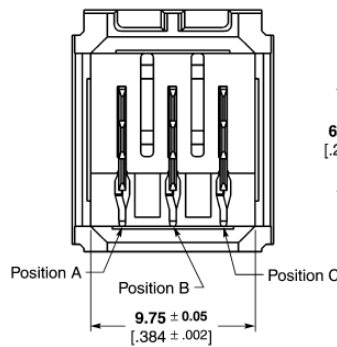
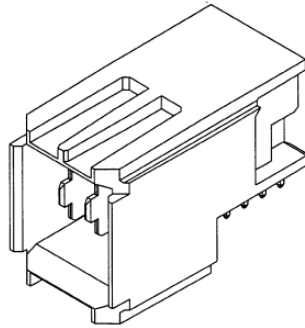
**Z-PACK HS3 Connector (Continued)**

**Power and Guide Hardware**  
(Continued)

**Universal Power Module Right Angle Headers (3 Pos.)**

**Material and Finish**

**Housing** — polyester, natural color  
**Contacts** — Copper alloy, plated 0.00127 [.000050] min. gold in mating area, 0.00050 [.000020] min. Tin-Lead on ACTION PIN post area, with entire contact underplated 0.00127 [.000050] min. nickel



1 All Plated Through Hole 12 Plcs.  
 1 PCB Hole Dim.  
 Drilled Hole = 0.7000 ± 0.025 [.02756 ± .0010]  
 Finished Hole = 0.60 ± 0.05 [.024 ± .002]  
 Cu Thickness = 0.375 ± 0.0125 [.0148 ± .00049]  
 SnPb Thickness = 0.007 ± 0.003 [.0003 ± .0001]

**Note:** For finishes other than Tin-Lead, reference Application Specification 114-1103.

**Recommended PC Board Hole Layout**

**Note:** For additional Power Module options reference Catalog 1773096, "Power Connectors and Interconnection Systems," or contact your Tyco Electronics Sales Representative.

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

| Blade Length Dimensions |              |              | Standard *10A Right Angle Header Part Numbers | High Current *15A Right Angle Header Part Numbers |
|-------------------------|--------------|--------------|---|---|
| Position A              | Position B   | Position C   |   |   |
| 10.90 [.429]            | 10.90 [.429] | 10.90 [.429] | 5223961-1                                     | 5-5223961-1                                       |
| 10.90 [.429]            | 9.30 [.366]  | 10.90 [.429] | 5223962-1                                     | —   |
| 10.90 [.429]            | 9.30 [.366]  | 9.30 [.366]  | 5223968-1                                     | —   |
| 10.90 [.429]            | 7.68 [.302]  | 10.90 [.429] | 5223972-1                                     | —   |
| 10.90 [.429]            | 7.68 [.302]  | 9.30 [.366]  | 5223971-1                                     | —   |
| 10.90 [.429]            | 7.68 [.302]  | 7.68 [.302]  | 5223970-1                                     | —   |
| 9.30 [.429]             | 10.90 [.429] | 9.30 [.366]  | 5223963-1                                     | —   |
| 9.30 [.366]             | 10.90 [.429] | 7.68 [.302]  | 5223964-1                                     | —   |
| 9.30 [.366]             | 9.30 [.366]  | 9.30 [.366]  | 5223967-1                                     | —   |
| 9.30 [.366]             | —            | 9.30 [.366]  | 5223975-1                                     | —   |
| 9.30 [.366]             | 9.30 [.366]  | 7.68 [.302]  | 5223981-1                                     | —   |
| 9.30 [.366]             | 7.68 [.302]  | 9.30 [.366]  | 5223965-1                                     | —   |
| 7.68 [.302]             | 9.30 [.366]  | 7.68 [.302]  | 5223983-1                                     | —   |
| 7.68 [.302]             | 7.68 [.302]  | 9.30 [.366]  | 5223980-1                                     | —   |
| 7.68 [.302]             | 7.68 [.302]  | 7.68 [.302]  | 5223974-1                                     | 5-5223974-1                                       |

\*Reference Product Specification 108-1651.

**Z-PACK HS3 Connector (Continued)**

**Power and Guide Hardware**  
(Continued)

**Expanded Universal Power Module Right Angle Headers**

**Material and Finish**

**Housing** — Polyester, gray

**Contacts** — Phosphor bronze, plated 0.00127 [.000050] min. gold in mating area, 0.00054 [.000021] min. Tin-Lead on ACTION PIN product area, with entire contact underplated 0.00127 [.000050] min. nickel

**Related Product Data**

**Guiding Hardware** (Optional) — pages 132 and 133

**Application Tooling**

**Header**

Seating Tool, 224441-1  
Board Support Fixture, 224442-1

**Receptacle**

Seating Tool, 224421-1  
Board Support Fixture, 217602-1

**Technical Documents**

**Product Specification**

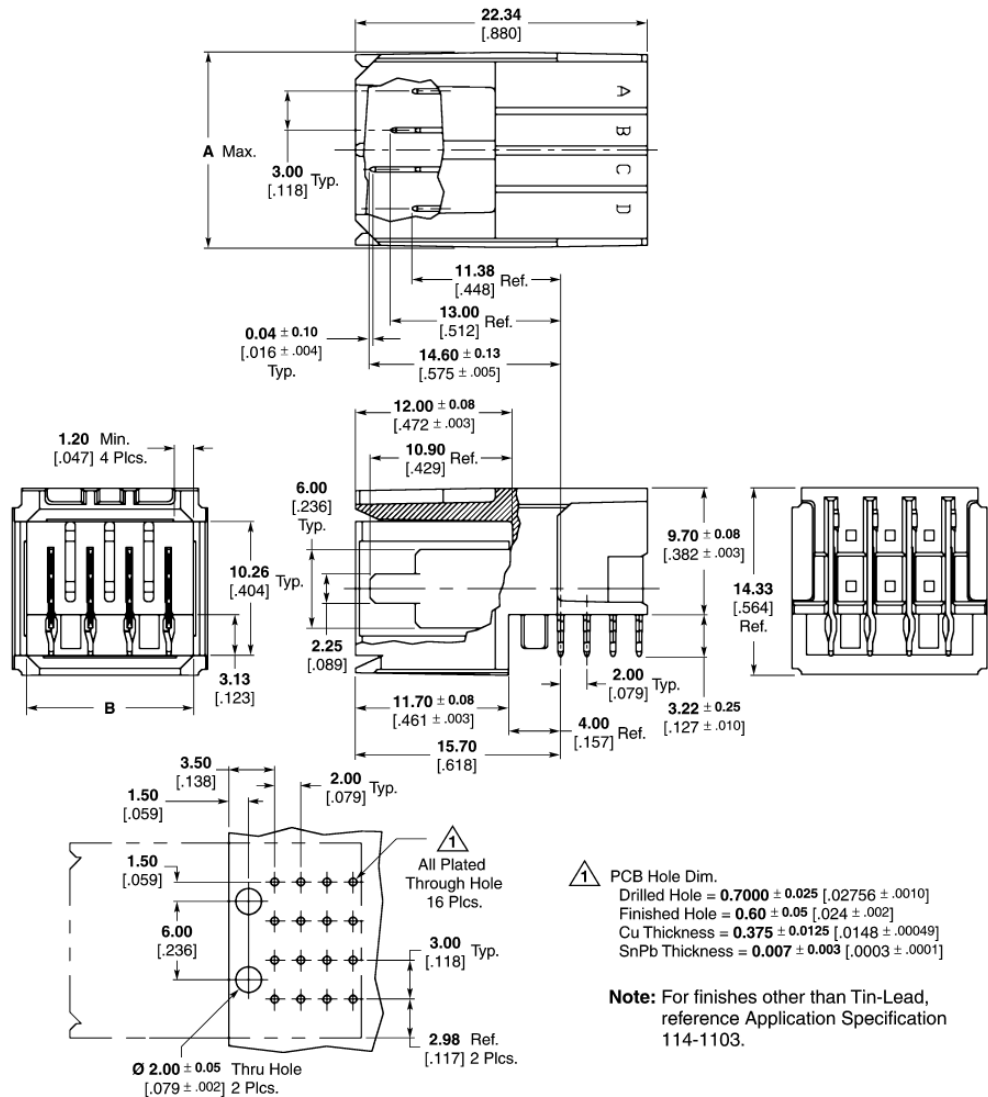
108-1651

**Application Specification**

114-1103

**Tyco Electronics Instruction Sheet**

408-4169 (Receptacle Seating Tool 224421-1)



Recommended PC Board Hole Layout

| Positions | Dimensions     |               | Standard *10A Base Part Number <sup>1</sup> | High Current *15A Base Part Number <sup>1</sup> |
|-----------|----------------|---------------|---|---|
|           | A              | B             |   |   |
| 4         | 15.00<br>.591  | 12.75<br>.502 | 5646954                                     | 120954  |
| 5         | 18.00<br>.709  | 15.75<br>.620 | 5646955                                     | 120955  |
| 6         | 21.00<br>.827  | 18.75<br>.738 | 5646956                                     | 120956  |
| 7         | 24.00<br>.945  | 21.75<br>.856 | 5646957                                     | 120957  |
| 8         | 27.00<br>1.063 | 24.75<br>.974 | 5646958                                     | 120958  |

<sup>1</sup> Dash number indicates sequence pattern. See customer drawing for specific dash numbers.

\*Reference Product Specification 108-1651.

**Note:** All part numbers are RoHS compliant. Tin-Lead parts are RoHS compliant through exemption for lead in press-fit connectors.

**Note:** For additional Power Module options reference Catalog 1773096, "Power Connectors and Interconnection Systems," or contact your Tyco Electronics Sales Representative.

**Z-PACK HS3 Connector** (Continued)

**Power and Guide Hardware**

(Continued)

**AMP-HDI Static Discharge  
Guide/Power Pins**

**Compatibility** — Z-PACK HS3,  
Z-PACK 2mm HM connectors

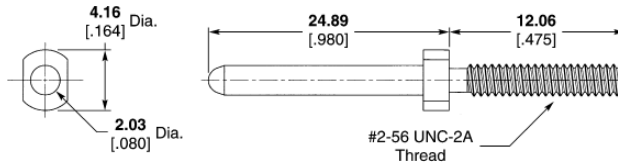
**Part Number** — 532828-5\*

**Nut** — 21124-4

**Washer** — 986794-1

**Max. Current Rating** — 10 Amperes

\*Additional sequence lengths are available, contact Tyco Electronics



**Material and Finish**

Brass, plated 0.00076 [0.00030] gold over 0.00127-0.00254 [0.00050-0.00100] nickel

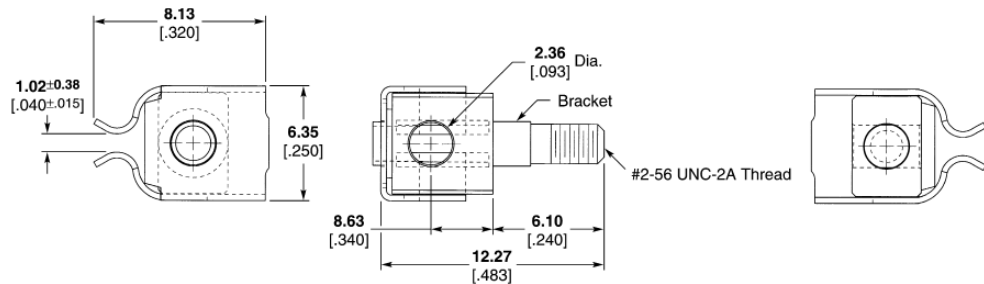
**AMP-HDI Guide Pin/Power  
Receptacles**

**Compatibility** — Z-PACK HS3  
connector

**Part Number** — 535875-1\*

**Max. Current Rating** — 10 Amperes

\*Additional lengths are available, see customer drawing.



**Material and Finish**

**Contact Finish** — 0.00076 [0.00030] gold in contact area, over 0.00127 [0.00050] min. nickel underplate. Gold flash on remainder of the contact.

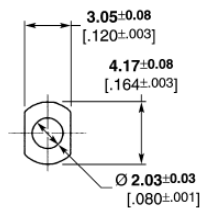
**ESD-Guide Pin/Feed-through**

**Compatibility** — Z-PACK HS3  
connector

**Part Number** — 120759-2\*

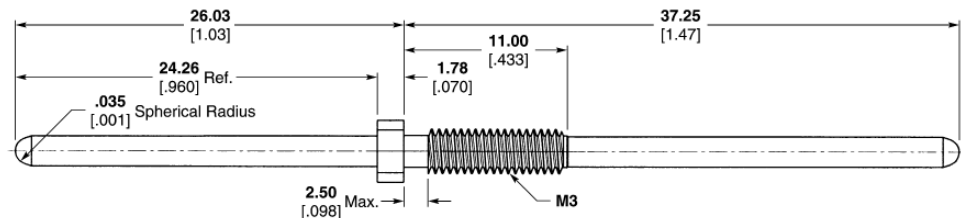
**Max. Current Rating** — 10 Amperes

\*Additional sequence lengths are available, contact Tyco Electronics



**Material and Finish**

Brass, plated 0.00076 [0.00030] gold all over 0.001427-0.00254 [0.00050-0.00100] nickel underplate



**Note:** All part numbers are RoHS compliant.

**Z-PACK HS3 Connector** (Continued)

**Power and Guide Hardware**

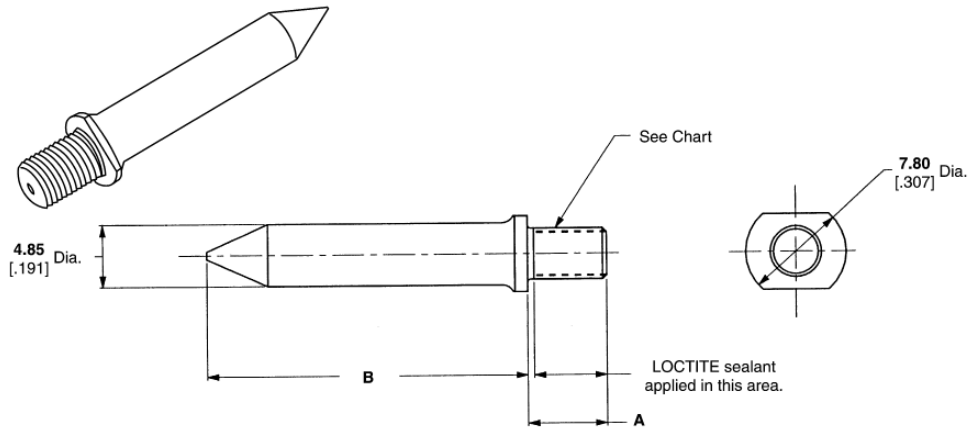
(Continued)

**Guide Pin (Unkeyed)**

**Material and Finish**

**Guide Pin** — Passivated stainless steel

**Part Number 223956-1**



| Dimension      |               | Thread      | Part Numbers |
|----------------|---------------|-------------|--------------|
| A              | B             |             |              |
| 7.50 [0.295]   | 24.73 [0.974] | M4 x 7-6g   | 223982-1*    |
| 9.20 [0.362]   | 25.16 [0.991] | M4 x 7-6g   | 223969-7     |
| 12.70 [0.500]  | 25.16 [0.991] | 8-32 UNC-2A | 223969-4     |
| 12.70 [0.500]  | 25.16 [0.991] | M4 x 7-6g   | 223969-1     |
| 6.20 [0.244]   | 25.16 [0.991] | M4 x 7-6g   | 223956-1     |
| 12.70 [0.500]  | 31.25 [1.230] | 8-32 UNC-2A | 1-223969-0   |
| 3.80** [0.150] | 27.16 [1.069] | M4 x 7-6h   | 120646-1     |
| 2.00** [0.079] | 27.16 [1.069] | M3 x 0.5    | 223988-1     |

\*6.35 Hex Base  
\*\*Internal Thread

**Female Guide Module (Unkeyed)**

**Material and Finish**

**Guide Module** — Zinc alloy, chromate conversion coated

**Related Product Data**

**Application Tooling** —

Seating Tool, 224440-1  
Board Support Fixture, 217603-1

**Technical Documents**

**Product Specification**

108-1651

**Application Specification**

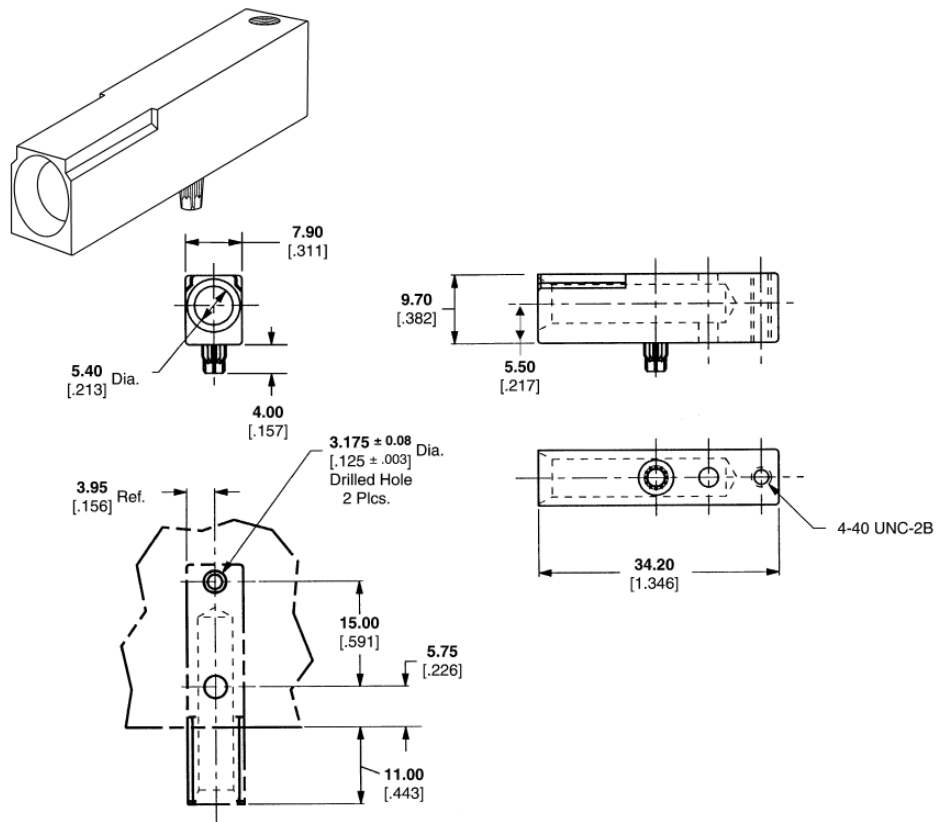
114-1103

**Part Number 223957-1**

(as shown)

**Part Number 223979-1**

(dual alignment posts)



**Recommended PC Board Hole Layout**

LOCTITE is a trademark of Henkel Corp.

**Note:** All part numbers are RoHS compliant.

**Z-PACK HS3 Connector (Continued)**

**Power and Guide Hardware**  
(Continued)

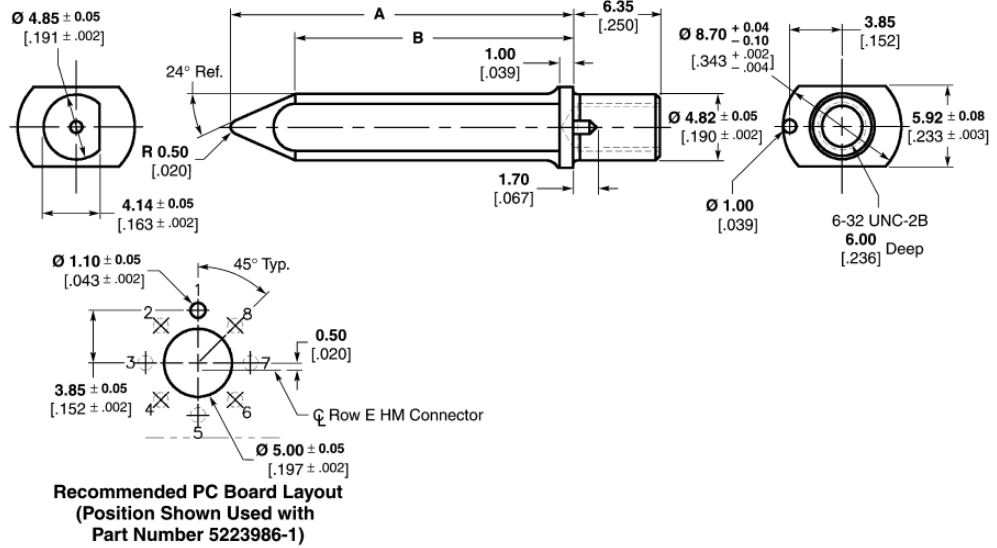
**Guide Pin (Keyed)**

**Material and Finish**

**Guide Pin** — Zinc alloy, chromate conversion coated

**Part Number 223985**

| Dimension      |               | Part Number |
|----------------|---------------|-------------|
| A              | B             |             |
| 25.16<br>.991  | 20.39<br>.803 | 223985-1    |
| 29.00<br>1.142 | 24.23<br>.954 | 223985-3    |



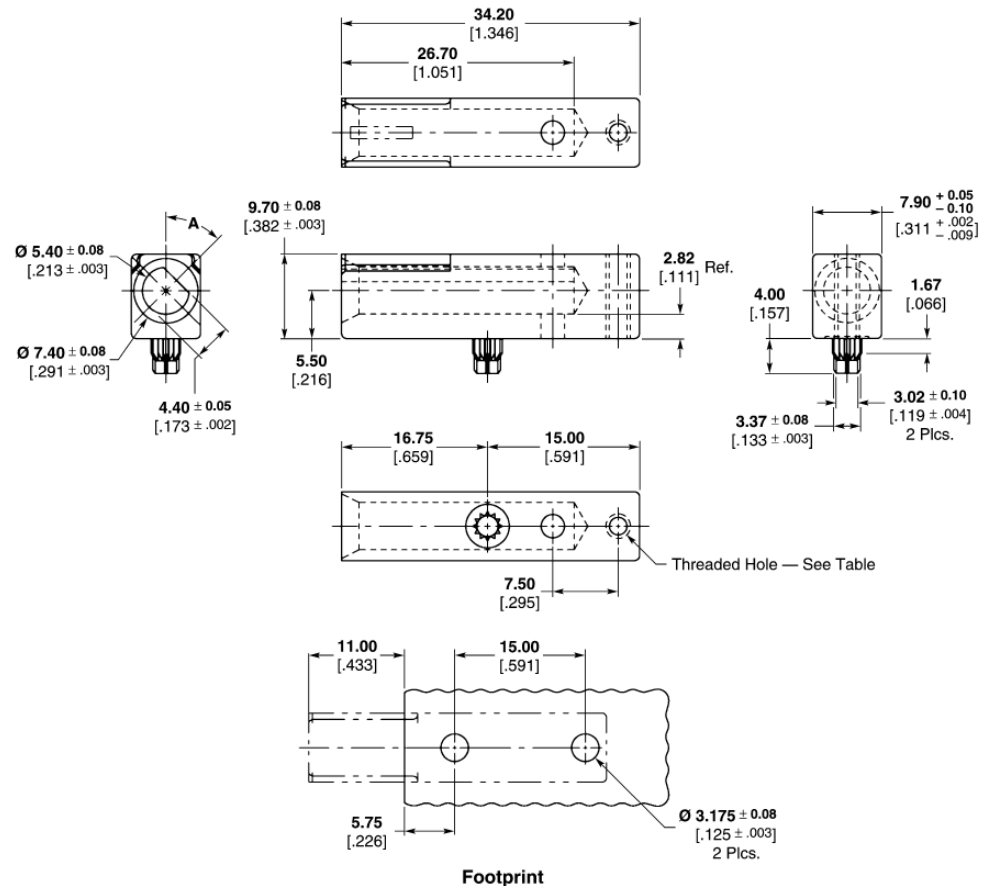
**Female Guide Module (Keyed)**

**Material and Finish**

**Guide Module** — Zinc alloy, chromate conversion coated

**Part Number 5223986**

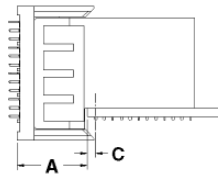
| Dim. A | Thread | Part Number |
|--------|--------|-------------|
| 0°     | 4-40   | 5223986-1   |
| 45°    | 4-40   | 5223986-2   |
| 90°    | 4-40   | 5223986-3   |
| 135°   | 4-40   | 5223986-4   |
| 180°   | 4-40   | 5223986-5   |
| 225°   | 4-40   | 5223986-6   |
| 270°   | 4-40   | 5223986-7   |
| 315°   | 4-40   | 5223986-8   |
| 0°     | M2.6   | 5120913-1   |
| 45°    | M2.6   | 5120913-2   |
| 90°    | M2.6   | 5120913-3   |
| 135°   | M2.6   | 5120913-4   |
| 180°   | M2.6   | 5120913-5   |
| 225°   | M2.6   | 5120913-6   |
| 270°   | M2.6   | 5120913-7   |
| 315°   | M2.6   | 5120913-8   |



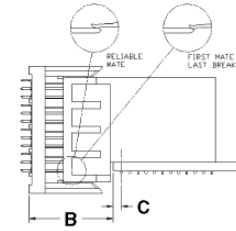
**Note:** All part numbers are RoHS compliant.

**Z-PACK HS3 Connector** (Continued)

**Z-PACK HS-3 Connector**  
**Mating Sequence Chart**



Fully Mated



Reliable Mate

| Product Family  | Dim. C       | Dim. A Fully Mated | Contact                   | Dim B.        |                       | Fully Mated Wipe Length |
|---|--------------|--------------------|---------------------------|---------------|-----------------------|-------------------------|
|   |              |                    |                           | Reliable Mate | First Mate Last Break |                         |
| Z-PACK HM-Zd Product                                    | 1.50<br>.059 | 12.50<br>.492      | Ground Shield             | 16.78 [.661]  | 17.55 [.691]          | 4.28 [.169]             |
|   |              |                    | Signal Level 2            | 15.41 [.607]  | 15.85 [.624]          | 2.91 [.115]             |
|   |              |                    | Signal Level 1            | 13.91 [.548]  | 14.35 [.565]          | 1.41 [.056]             |
| Z-PACK HM-Zd Guide Hardware                             | 3.00<br>.118 | 12.50<br>.492      | 24.0 mm Pin               | 27.50 [1.083] | 33.40 [1.315]         | N/A                     |
|   |              |                    | 22.2 mm Pin               | 25.70 [1.012] | 31.60 [1.244]         | N/A                     |
|   |              |                    | Key Blocking Point        | N/A           | 22.03 [.867]          | N/A                     |
| Z-PACK TinMan Product                                   | 1.50<br>.059 | 12.50<br>.492      | Ground Pins               | 16.44 [.647]  | 17.13 [.674]          | 3.94 [.155]             |
|   |              |                    | Signal Level 2            | 14.94 [.588]  | 15.63 [.615]          | 2.44 [.096]             |
|   |              |                    | Signal Level 1            | N/A           | N/A                   | N/A                     |
| Z-PACK 2mm HM Product                                   | 1.50<br>.059 | 12.50<br>.492      | Signal Level 3            | 18.27 [.719]  | 18.84 [.742]          | 5.77 [.227]             |
|   |              |                    | Signal Level 2            | 16.77 [.660]  | 17.34 [.683]          | 4.27 [.168]             |
|   |              |                    | Signal Level 1            | 15.27 [.601]  | 15.84 [.624]          | 2.77 [.109]             |
| MULTIGIG RT T1 Product                                  | 2.50<br>.098 | 12.50<br>.492      | Ground                    | 18.00 [.709]  | —                     | 5.50 [.217]             |
|   |              |                    | Signal Level 3            | 18.00 [.709]  | —                     | 5.50 [.217]             |
|   |              |                    | Signal Level 2            | 16.50 [.650]  | —                     | 4.00 [.157]             |
|   |              |                    | Signal Level 1            | 15.00 [.591]  | —                     | 2.50 [.098]             |
| MULTIGIG RT T2 Product                                  | 2.25<br>.089 | 12.50<br>.492      | Ground                    | 18.00 [.709]  | —                     | 5.50 [.217]             |
|   |              |                    | Signal Level 3            | 18.00 [.709]  | —                     | 5.50 [.217]             |
|   |              |                    | Signal Level 2            | 16.50 [.650]  | —                     | 4.00 [.157]             |
| MULTIGIG RT Power Module                                | 5.50<br>.217 | 12.50<br>.492      | Power Level 3             | 23.75 [.935]  | —                     | 11.25 [.443]            |
|   |              |                    | Power Level 2             | 22.25 [.876]  | —                     | 9.75 [.384]             |
|   |              |                    | Power Level 1             | 20.75 [.817]  | —                     | 8.25 [.325]             |
| MULTIGIG RT Guide Hardware                              | N/A          | 12.50<br>.492      | Guide Pin Key             | 33.25 [1.309] | N/A                   | 20.75 [.817]            |
|   |              |                    | Guide ESD Contact         | 30.75 [1.211] | —                     | 18.25 [.719]            |
| <b>Z-PACK HS3 Product</b>                               | 1.50<br>.059 | 12.50<br>.492      | Ground                    | 17.08 [.672]  | 17.60 [.693]          | 4.78 [.188]             |
|   |              |                    | Signal Level 2            | 16.05 [.632]  | 16.47 [.648]          | 3.75 [.148]             |
|   |              |                    | Signal Level 1            | 14.55 [.573]  | 14.97 [.589]          | 2.25 [.089]             |
| UPM   | 3.50<br>.138 | 12.50<br>.492      | Power Level 3             | 20.25 [.797]  | 20.95 [.825]          | 8.10 [.319]             |
|   |              |                    | Power Level 2             | 18.65 [.734]  | 19.35 [.762]          | 6.50 [.256]             |
|   |              |                    | Power Level 1             | 17.03 [.670]  | 17.73 [.698]          | 4.88 [.192]             |
| UPM Guide Hardware                                      | 5.75<br>.226 | 12.50<br>.492      | Guide Pin Key             | 31.39 [1.236] | 36.16 [1.424]         | N/A                     |
|   |              |                    | Keyed Guide Pin           | 31.39 [1.236] | 36.16 [1.424]         | N/A                     |
|   |              |                    | Keyed Guide Pin           | 35.23 [1.387] | 40.00 [1.575]         | N/A                     |
| MULTI-BEAM XL Right Angle Header to Vertical Receptacle | 5.08<br>.200 | 14.73<br>.580      | PreMate Power — Level 1   | —             | 16.84 [.663]          | 5.61 [.221] Min.        |
|   |              |                    | PostMate Power — Level 2  | —             | 17.81 [.701]          | 4.34 [.171] Min.        |
|   |              |                    | PreMate Signal — Level 2  | —             | 18.26 [.719]          | 3.81 [.150] Min.        |
|   |              |                    | PostMate Signal — Level 3 | —             | 19.53 [.769]          | 2.54 [.100] Min.        |
| MULTI-BEAM XL Right Angle Receptacle to Vertical Header | 3.81<br>.150 | 13.21<br>.520      | PreMate Power — Level 1   | —             | 15.32 [.603]          | 5.61 [.221] Min.        |
|   |              |                    | PostMate Power — Level 2  | —             | 16.28 [.641]          | 4.34 [.171] Min.        |
|   |              |                    | PreMate Signal — Level 2  | —             | 16.74 [.659]          | 3.81 [.150] Min.        |
|   |              |                    | PostMate Signal — Level 3 | —             | 18.01 [.709]          | 2.54 [.100] Min.        |



**Z-PACK HS3 Connector** (Continued)

**Application Tooling and Equipment**



1585280-1 Model AP3

1585696-1 Model BMEP 5T

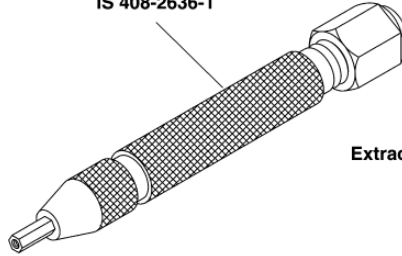
1585699-1 Model MEP 6T

Typical Manual Arbor Frame Assembly (Commercially Available)

Insertion Tool Assembly IS 408-9979

Contact Replacement Tool IS 408-2636-1

Replacement Pin Assembly IS 408-9979



Setscrew IS 408-9979

Extraction Tool Assembly IS 408-9979

Tool Tip IS 408-9979

Pusher IS 408-9979

Spacer

Pin Support Tube IS 408-9979

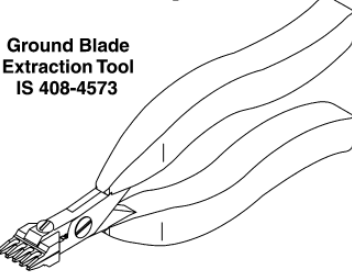
Pin Repair Kit IS 408-9979



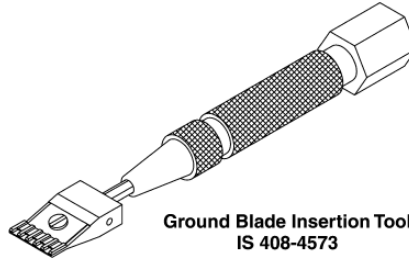
Chiclet Removal Tool IS 408-8410

Ground Blade Repair Kit IS 408-4573

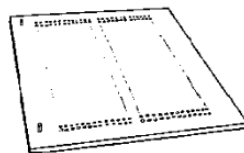
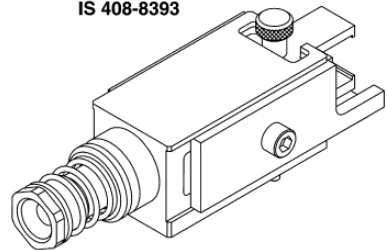
Housing Removal Tool Kit IS 408-8393



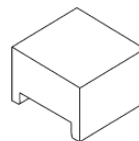
Ground Blade Extraction Tool IS 408-4573



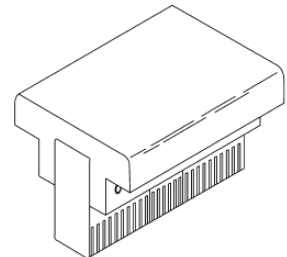
Ground Blade Insertion Tool IS 408-4573



Typical PC Board Support (Customer Supplied)



Typical Receptacle Seating Tool IS 408-8500



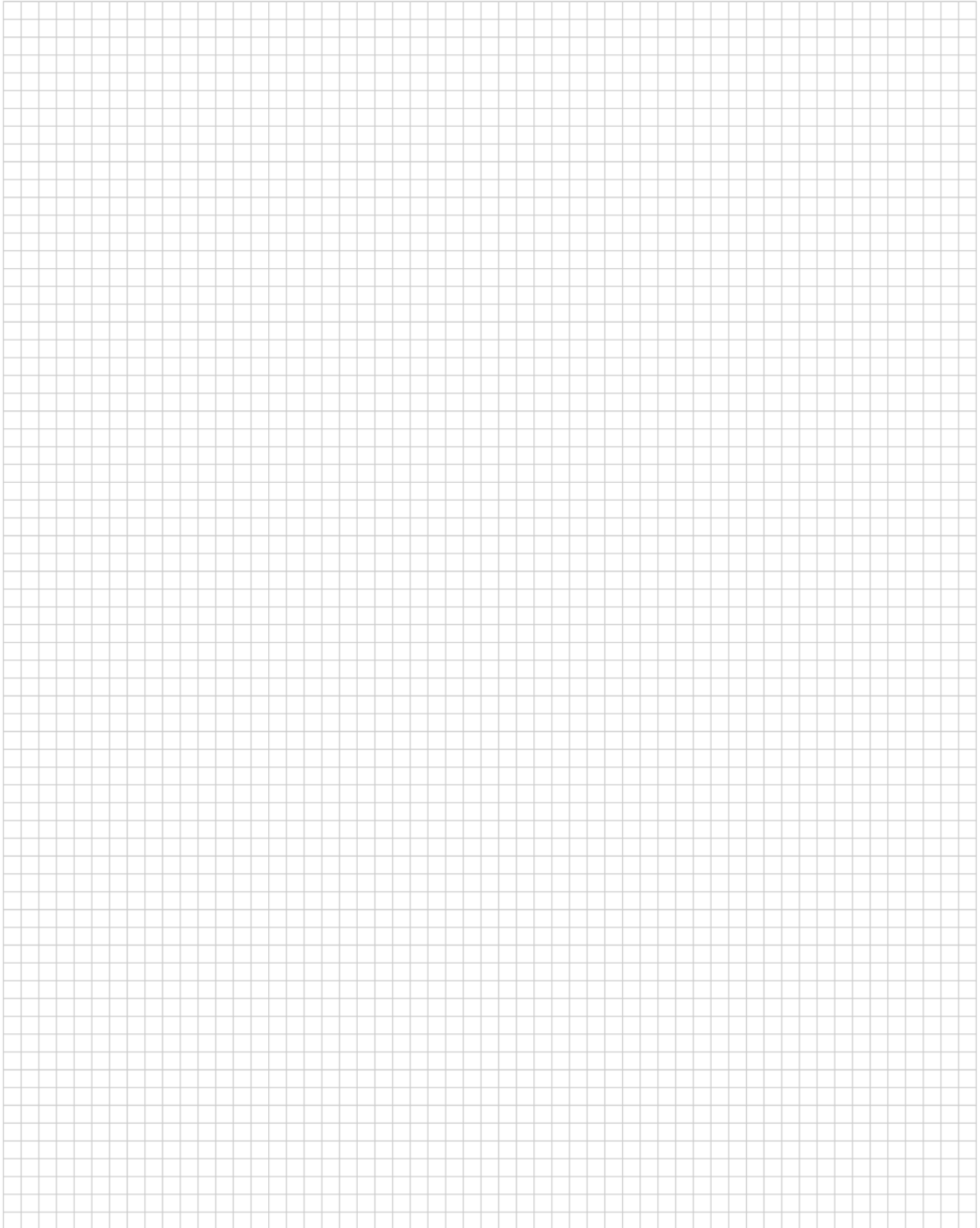
Typical Pin Header Seating Tool IS 408-8501

**Note:** All part numbers are RoHS compliant.

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**Engineering Notes**

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### Наши контакты:

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