

# CKH/CKE

## +105°C General Purpose Radial Lead Aluminum Electrolytic Capacitors



### Features

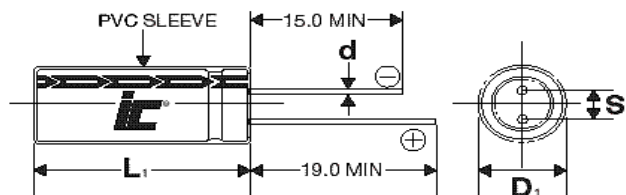
- Standard case sizes
- Multiple case sizes
- Lead free leads

### Applications

- Bypass
- Coupling
- Filtering
- De-coupling

### Specifications

| Operating Temperature Range                           |                | -55°C to +105°C (6.3 to 100 WVDC), -40°C to +105°C (160 to 400 WVDC)<br>-25°C to +85°C (450 WVDC) |                |     |      |                                    |                  |     |     |                 |     |     |     |     |     |
|-------------------------------------------------------|----------------|---------------------------------------------------------------------------------------------------|----------------|-----|------|------------------------------------|------------------|-----|-----|-----------------|-----|-----|-----|-----|-----|
| Capacitance Tolerance                                 |                | +20% at 120 Hz, 20°C                                                                              |                |     |      |                                    |                  |     |     |                 |     |     |     |     |     |
| Surge voltage                                         | WVDC           | 6.3                                                                                               | 10             | 16  | 25   | 35                                 | 50               | 63  | 100 | 160             | 200 | 250 | 350 | 400 | 450 |
|                                                       | SVDC           | 7.9                                                                                               | 13             | 20  | 32   | 44                                 | 63               | 79  | 125 | 200             | 250 | 300 | 400 | 450 | 500 |
| Dissipation Factor                                    | WVDC           | 6.3                                                                                               | 10             | 16  | 25   | 35                                 | 50               | 63  | 100 | 160             | 200 | 250 | 350 | 400 | 450 |
|                                                       | Tan δ          | .24                                                                                               | .2             | .17 | .15  | .12                                | .1               | .1  | .08 | .15             | .15 | .15 | .2  | .2  | .2  |
|                                                       |                | Add .02 for every 1000uF above 1000uF                                                             |                |     |      |                                    |                  |     |     |                 |     |     |     |     |     |
| Leakage current                                       |                | 6.3 to 100 WVDC                                                                                   |                |     |      |                                    |                  |     |     | 160 to 450 WVDC |     |     |     |     |     |
|                                                       |                | 1 Minutes                                                                                         |                |     |      | 2 Minutes                          |                  |     |     | 2 Minutes       |     |     |     |     |     |
|                                                       |                | .03CV or 4uA, Whichever is greater                                                                |                |     |      | .01CV or 3uA, Whichever is greater |                  |     |     | .03CV+40uA      |     |     |     |     |     |
| Low temperature stability<br>Impedance ratio (120 Hz) | WVDC           | 6.3                                                                                               | 10             | 16  | 25   | 35                                 | 50               | 63  | 100 | 160             | 200 | 250 | 350 | 400 | 450 |
|                                                       | -25°C to +20°C | 4                                                                                                 | 3              | 2   | 2    | 2                                  | 2                | 2   | 2   | 3               | 3   | 3   | 6   | 6   | 15  |
|                                                       | -40°C to +20°C | 5                                                                                                 | 10             | 8   | 6    | 4                                  | 3                | 3   | 3   | 3               | 4   | 4   | 10  | 10  | -   |
| Load Life                                             |                | 2000 hours at 105°C with rated WVDC and ripple current applied                                    |                |     |      |                                    |                  |     |     |                 |     |     |     |     |     |
|                                                       |                | Capacitance change                                                                                |                |     |      | ≤20% of initial measured value     |                  |     |     |                 |     |     |     |     |     |
|                                                       |                | Dissipation factor                                                                                |                |     |      | ≤150% of maximum specified value   |                  |     |     |                 |     |     |     |     |     |
|                                                       |                | Leakage current                                                                                   |                |     |      | ≥100% of maximum specified value   |                  |     |     |                 |     |     |     |     |     |
| Shelf Life                                            |                | 1000 hours at 105°C with no voltage applied                                                       |                |     |      |                                    |                  |     |     |                 |     |     |     |     |     |
|                                                       |                | Capacitance change                                                                                |                |     |      | ≤20% initial measured value        |                  |     |     |                 |     |     |     |     |     |
|                                                       |                | Dissipation factor                                                                                |                |     |      | ≤200% of maximum specified value   |                  |     |     |                 |     |     |     |     |     |
|                                                       |                | Leakage current                                                                                   |                |     |      | ≥100% of maximum specified value   |                  |     |     |                 |     |     |     |     |     |
| Ripple Current Multipliers                            |                |                                                                                                   | Frequency (Hz) |     |      |                                    | Temperature (°C) |     |     |                 |     |     |     |     |     |
|                                                       |                | WVDC                                                                                              | 50             | 120 | 1k   | 10k                                | +105             | +85 | +70 | +60             |     |     |     |     |     |
|                                                       |                | 6.3 to 25V                                                                                        | .85            | 1.0 | 1.10 | 1.20                               | 1.0              | 1.4 | 1.4 | 1.75            |     |     |     |     |     |
|                                                       |                | 35 to 100V                                                                                        | .8             | 1.0 | 1.15 | 1.25                               | 1.0              | 1.4 | 1.4 | 1.75            |     |     |     |     |     |
|                                                       |                | 160 to 250V                                                                                       | .75            | 1.0 | 1.25 | 1.40                               | 1.0              | 1.4 | 1.4 | 1.75            |     |     |     |     |     |
|                                                       |                | 350 to 450V                                                                                       | .7             | 1.0 | 1.30 | 1.80                               | 1.0              | 1.4 | 1.4 | 1.75            |     |     |     |     |     |



| D | 5   | 6.3 | 8   | 10  | 12.5 | 16  | 18  |
|---|-----|-----|-----|-----|------|-----|-----|
| S | 2.0 | 2.5 | 3.5 | 5.0 | 5.0  | 7.5 | 7.5 |
| d | 0.5 | 0.5 | 0.6 | 0.6 | 0.6  | 0.8 | 0.8 |

$L_1 = L + 1.5\text{mm Max.}$   
 $D_1 = D + 0.5\text{mm Max.}$   
 $S_1 = S + 0.5\text{ mm}$



| Capacitance<br>(µF) | WVDC | IC PART NUMBER | Maximum<br>ESR (mΩ)<br>120 Hz,<br>+20°C | Maximum<br>RMS Ripple<br>Current<br>(mA)<br>120 Hz,<br>+105°C | Dims DxL<br>(mm) |
|---------------------|------|----------------|-----------------------------------------|---------------------------------------------------------------|------------------|
| 0.1                 | 50   | 104CKH050M     | 1657.86                                 | 5                                                             | 5x11             |
| 0.15                | 50   | 154CKH050M     | 1105.24                                 | 5                                                             | 5x11             |
| 0.22                | 50   | 224CKH050M     | 753.575                                 | 7                                                             | 5x11             |
| 0.33                | 50   | 334CKH050M     | 502.38                                  | 10                                                            | 5x11             |
| 0.47                | 100  | 474CKH100M     | 282.19                                  | 12                                                            | 5x11             |
| 0.47                | 250  | 474CKH250M     | 529.106                                 | 15                                                            | 6.3x11           |
| 0.68                | 50   | 684CKH050M     | 243.804                                 | 10                                                            | 5x11             |
| 1                   | 50   | 105CKH050M     | 165.79                                  | 17                                                            | 5x11             |
| 1                   | 100  | 105CKE100M     | 132.63                                  | 19                                                            | 5x11             |
| 1                   | 250  | 105CKE250M     | 248.68                                  | 21                                                            | 6.3x11           |
| 1                   | 350  | 105CKE350M     | 331.57                                  | 21                                                            | 6.3x11           |
| 1                   | 400  | 105CKE400M     | 331.57                                  | 21                                                            | 8x11.5           |
| 1                   | 450  | 105CKE450M     | 331.57                                  | 22                                                            | 10x12.5          |
| 1.5                 | 50   | 155CKH050M     | 110.52                                  | 15                                                            | 5x11             |
| 2.2                 | 50   | 225CKH050M     | 75.358                                  | 25                                                            | 5x11             |
| 2.2                 | 100  | 225CKE100M     | 60.286                                  | 28                                                            | 5x11             |
| 2.2                 | 250  | 225CKH250M     | 113.036                                 | 31                                                            | 6.3x11           |
| 2.2                 | 350  | 225CKE350M     | 150.71                                  | 21                                                            | 6.3x11           |
| 2.2                 | 400  | 225CKE400M     | 150.71                                  | 26                                                            | 8x11.5           |
| 2.2                 | 450  | 225CKE450MJM   | 150.71                                  | 20                                                            | 8x11.5           |
| 2.2                 | 450  | 225CKE450M     | 150.71                                  | 31                                                            | 10x12.5          |
| 3.3                 | 50   | 335CKE050M     | 50.238                                  | 31                                                            | 5x11             |
| 3.3                 | 100  | 335CKE100M     | 40.19                                   | 34                                                            | 5x11             |
| 3.3                 | 200  | 335CKE200M     | 75.358                                  | 34                                                            | 6.3x11           |
| 3.3                 | 250  | 335CKE250M     | 75.358                                  | 44                                                            | 8x11.5           |
| 3.3                 | 250  | 335CKE250MGM   | 75.358                                  | 28                                                            | 6.3x11           |
| 3.3                 | 350  | 335CKE350MJM   | 100.477                                 | 30                                                            | 8x11.5           |
| 3.3                 | 400  | 335CKE400M     | 100.477                                 | 41                                                            | 10x12.5          |
| 3.3                 | 400  | 335CKE400MJM   | 100.477                                 | 34                                                            | 8x11.5           |
| 3.3                 | 450  | 335CKE450MLN   | 100.477                                 | 28                                                            | 10x13            |
| 3.3                 | 450  | 335CKE450M     | 100.477                                 | 50                                                            | 12.5x20          |
| 4.7                 | 100  | 475CKE100M     | 28.219                                  | 41                                                            | 5x11             |
| 4.7                 | 160  | 475CKE160M     | 52.911                                  | 38                                                            | 6.3x11           |
| 4.7                 | 200  | 475CKE200M     | 52.911                                  | 35                                                            | 6.3x11           |
| 4.7                 | 250  | 475CKE250MGM   | 52.911                                  | 35                                                            | 6.3x11           |
| 4.7                 | 250  | 475CKH250M     | 52.911                                  | 60                                                            | 10x12.5          |
| 4.7                 | 250  | 475CKE250M     | 52.911                                  | 50                                                            | 8x11.5           |
| 4.7                 | 350  | 475CKE350M     | 70.547                                  | 47                                                            | 10x12.5          |
| 4.7                 | 350  | 475CKE350MJM   | 70.547                                  | 39                                                            | 8x11.5           |
| 4.7                 | 400  | 475CKE400M     | 70.547                                  | 55                                                            | 10x16            |
| 4.7                 | 400  | 475CKE400MLN   | 70.547                                  | 42                                                            | 10x12.5          |
| 4.7                 | 450  | 475CKH450M     | 70.547                                  | 60                                                            | 12.5x20          |
| 4.7                 | 450  | 475CKE450M     | 70.547                                  | 43                                                            | 10x20            |
| 4.7                 | 450  | 475CKE450MLN   | 70.547                                  | 32                                                            | 10x12.5          |
| 6.8                 | 50   | 685CKH050M     | 24.381                                  | 40                                                            | 5x11             |
| 6.8                 | 63   | 685CKH063M     | 24.381                                  | 42                                                            | 5x11             |
| 6.8                 | 100  | 685CKH100M     | 19.504                                  | 52                                                            | 6.3x11           |
| 6.8                 | 250  | 685CKH250M     | 36.571                                  | 65                                                            | 10x16            |
| 10                  | 50   | 106CKH050M     | 16.579                                  | 55                                                            | 5x11             |
| 10                  | 63   | 106CKE063M     | 16.579                                  | 55                                                            | 5x11             |
| 10                  | 100  | 106CKH100M     | 13.263                                  | 65                                                            | 6.3x11           |
| 10                  | 100  | 106CKE100MEM   | 13.263                                  | 50                                                            | 5x11             |
| 10                  | 160  | 106CKE160M     | 24.868                                  | 65                                                            | 8x11.5           |
| 10                  | 200  | 106CKE200M     | 24.868                                  | 75                                                            | 10x12.5          |
| 10                  | 200  | 106CKE200MJM   | 24.868                                  | 57                                                            | 8x11.5           |
| 10                  | 250  | 106CKE250MLN   | 24.868                                  | 71                                                            | 10x12.5          |
| 10                  | 250  | 106CKH250M     | 24.868                                  | 90                                                            | 10x16            |
| 10                  | 350  | 106CKE350M     | 33.157                                  | 85                                                            | 10x20            |

| Capacitance<br>(µF) | WVDC | IC PART NUMBER | Maximum<br>ESR (mΩ)<br>120 Hz,<br>+20°C | Maximum<br>RMS Ripple<br>Current<br>(mA)<br>120 Hz,<br>+105°C | Dims DxL<br>(mm) |
|---------------------|------|----------------|-----------------------------------------|---------------------------------------------------------------|------------------|
| 10                  | 350  | 106CKE350MLQ   | 33.157                                  | 64                                                            | 10x16            |
| 10                  | 400  | 106CKE400M     | 33.157                                  | 73                                                            | 10x20            |
| 10                  | 400  | 106CKE400MLQ   | 33.157                                  | 64                                                            | 10x16            |
| 10                  | 450  | 106CKE450MLU   | 33.157                                  | 27                                                            | 10x21            |
| 10                  | 450  | 106CKE450M     | 33.157                                  | 65                                                            | 12.5x20          |
| 15                  | 50   | 156CKH050M     | 11.052                                  | 58                                                            | 5x11             |
| 15                  | 63   | 156CKH063M     | 11.052                                  | 65                                                            | 6.3x11           |
| 15                  | 100  | 156CKH100M     | 8.842                                   | 80                                                            | 8x11.5           |
| 15                  | 160  | 156CKH160M     | 11.052                                  | 80                                                            | 10x16            |
| 15                  | 250  | 156CKH250M     | 11.052                                  | 90                                                            | 10x20            |
| 22                  | 50   | 226CKH050M     | 7.536                                   | 80                                                            | 5x11             |
| 22                  | 63   | 226CKH063M     | 7.536                                   | 85                                                            | 6.3x11           |
| 22                  | 63   | 226CKE063M     | 7.536                                   | 80                                                            | 5x11             |
| 22                  | 100  | 226CKH100M     | 6.029                                   | 110                                                           | 8x11.5           |
| 22                  | 100  | 226CKE100M     | 6.029                                   | 100                                                           | 6.3x11           |
| 22                  | 160  | 226CKE160MLN   | 11.304                                  | 92                                                            | 10x12.5          |
| 22                  | 160  | 226CKE160M     | 11.304                                  | 110                                                           | 10x16            |
| 22                  | 200  | 226CKE200MLQ   | 11.304                                  | 105                                                           | 10x16            |
| 22                  | 200  | 226CKH200M     | 11.3036                                 | 130                                                           | 10x20            |
| 22                  | 250  | 226CKE250MLU   | 11.304                                  | 105                                                           | 10x20            |
| 22                  | 250  | 226CKE250M     | 11.304                                  | 160                                                           | 12.5x20          |
| 22                  | 350  | 226CKE350MNU   | 15.072                                  | 105                                                           | 12.5x20          |
| 22                  | 400  | 226CKE400M     | 15.072                                  | 150                                                           | 12.5x25          |
| 22                  | 450  | 226CKE450M     | 15.072                                  | 130                                                           | 16x25            |
| 22                  | 450  | 226CKH450M     | 15.071                                  | 160                                                           | 16x31.5          |
| 22                  | 450  | 226CKE450MNV   | 15.0715                                 | 100                                                           | 13x26            |
| 33                  | 50   | 336CKE050M     | 5.024                                   | 95                                                            | 5x11             |
| 33                  | 63   | 336CKE063M     | 5.024                                   | 110                                                           | 6.3x11           |
| 33                  | 100  | 336CKE100M     | 4.019                                   | 140                                                           | 8x11.5           |
| 33                  | 100  | 336CKH100M     | 4.019                                   | 140                                                           | 10x12.5          |
| 33                  | 160  | 336CKE160M     | 7.536                                   | 150                                                           | 10x20            |
| 33                  | 160  | 336CKE160MLQ   | 7.536                                   | 125                                                           | 10x16            |
| 33                  | 200  | 336CKE200MLU   | 7.536                                   | 140                                                           | 10x20            |
| 33                  | 250  | 336CKE250M     | 7.536                                   | 190                                                           | 12.5x20          |
| 33                  | 350  | 336CKE350MNV   | 10.048                                  | 170                                                           | 12.5x25          |
| 33                  | 400  | 336CKE400M     | 10.048                                  | 160                                                           | 16x25            |
| 33                  | 400  | 336CKH400M     | 10.048                                  | 210                                                           | 16x31.5          |
| 33                  | 450  | 336CKE450MQV   | 10.048                                  | 120                                                           | 16x25            |
| 33                  | 450  | 336CKE450M     | 10.048                                  | 230                                                           | 18x35.5          |
| 47                  | 25   | 476CKH025M     | 5.291                                   | 95                                                            | 5x11             |
| 47                  | 35   | 476CKE035M     | 4.233                                   | 110                                                           | 5x11             |
| 47                  | 50   | 476CKE050M     | 3.527                                   | 130                                                           | 6.3x11           |
| 47                  | 63   | 476CKE063M     | 3.527                                   | 130                                                           | 6.3x11           |
| 47                  | 63   | 476CKH063M     | 3.527                                   | 135                                                           | 8x11.5           |
| 47                  | 100  | 476CKE100MJM   | 2.822                                   | 140                                                           | 8x11.5           |
| 47                  | 100  | 476CKH100M     | 2.822                                   | 190                                                           | 10x16            |
| 47                  | 100  | 476CKE100M     | 2.822                                   | 180                                                           | 10x12.5          |
| 47                  | 160  | 476CKE160MLU   | 5.291                                   | 150                                                           | 10x20            |
| 47                  | 160  | 476CKE160M     | 5.291                                   | 190                                                           | 12.5x20          |
| 47                  | 200  | 476CKE200M     | 5.291                                   | 210                                                           | 12.5x20          |
| 47                  | 250  | 476CKE250MNU   | 5.291                                   | 190                                                           | 13x21            |
| 47                  | 250  | 476CKE250M     | 5.291                                   | 250                                                           | 12.5x25          |
| 47                  | 350  | 476CKH350M     | 7.055                                   | 250                                                           | 16x35.5          |
| 47                  | 350  | 476CKE350M     | 7.055                                   | 190                                                           | 16x25            |
| 47                  | 400  | 476CKE400M     | 7.055                                   | 210                                                           | 16x31.5          |
| 47                  | 400  | 476CKE400MQV   | 7.055                                   | 200                                                           | 16x25            |
| 47                  | 450  | 476CKE450MQW   | 7.055                                   | 155                                                           | 16x31.5          |
| 68                  | 16   | 686CKH016M     | 4.145                                   | 95                                                            | 5x11             |

# CKH\_CKE

+105°C, Extended life 2000  
hour

| Capacitance<br>(µF) | WVDC | IC PART NUMBER | Maximum<br>ESR (mΩ)<br>120 Hz,<br>+20°C | Maximum<br>RMS Ripple<br>Current<br>(mA)<br>120 Hz,<br>+105°C | Dims DxL<br>(mm) |
|---------------------|------|----------------|-----------------------------------------|---------------------------------------------------------------|------------------|
| 68                  | 25   | 686CKH025M     | 3.657                                   | 105                                                           | 6.3x11           |
| 68                  | 50   | 686CKH050M     | 2.438                                   | 165                                                           | 8x11.5           |
| 68                  | 63   | 686CKH063M     | 2.438                                   | 190                                                           | 10x12.5          |
| 68                  | 100  | 686CKH100M     | 1.95                                    | 255                                                           | 10x16            |
| 68                  | 200  | 686CKH200M     | 3.657                                   | 235                                                           | 16x25            |
| 68                  | 250  | 686CKH250M     | 3.657                                   | 255                                                           | 16x31.5          |
| 100                 | 16   | 107CKE016M     | 2.818                                   | 130                                                           | 5x11             |
| 100                 | 25   | 107CKE025MEM   | 2.487                                   | 125                                                           | 5x11             |
| 100                 | 35   | 107CKE035M     | 1.989                                   | 170                                                           | 6.3x11           |
| 100                 | 50   | 107CKH050M     | 1.658                                   | 220                                                           | 8x11.5           |
| 100                 | 63   | 107CKH063M     | 1.658                                   | 240                                                           | 10x12.5          |
| 100                 | 63   | 107CKE063MJM   | 1.658                                   | 200                                                           | 8x11.5           |
| 100                 | 100  | 107CKE100MLQ   | 1.326                                   | 240                                                           | 10x16            |
| 100                 | 100  | 107CKE100M     | 1.326                                   | 320                                                           | 10x20            |
| 100                 | 160  | 107CKE160M     | 2.487                                   | 310                                                           | 12.5x25          |
| 100                 | 200  | 107CKE200M     | 2.487                                   | 340                                                           | 16x25            |
| 100                 | 250  | 107CKE250M     | 2.487                                   | 410                                                           | 16x31.5          |
| 100                 | 250  | 107CKE250MQV   | 2.487                                   | 310                                                           | 16x25            |
| 100                 | 350  | 107CKE350M     | 3.316                                   | 410                                                           | 18x40            |
| 100                 | 350  | 107CKE350MRY   | 3.316                                   | 370                                                           | 18x35.5          |
| 100                 | 400  | 107CKE400M     | 3.316                                   | 310                                                           | 18x35.5          |
| 150                 | 10   | 157CKH010M     | 2.211                                   | 125                                                           | 6.3x11           |
| 150                 | 25   | 157CKH025M     | 1.658                                   | 180                                                           | 8x11.5           |
| 150                 | 35   | 157CKH035M     | 1.326                                   | 230                                                           | 10x12.5          |
| 150                 | 50   | 157CKH050M     | 1.105                                   | 260                                                           | 10x16            |
| 150                 | 63   | 157CKH063M     | 1.105                                   | 315                                                           | 10x20            |
| 150                 | 100  | 157CKH100M     | 0.884                                   | 410                                                           | 12.5x20          |
| 150                 | 160  | 157CKH160M     | 1.658                                   | 330                                                           | 16x31.5          |
| 150                 | 200  | 157CKH200M     | 1.658                                   | 350                                                           | 16x35.5          |
| 220                 | 10   | 227CKE010M     | 1.5072                                  | 180                                                           | 5x11             |
| 220                 | 16   | 227CKE016M     | 1.2811                                  | 220                                                           | 6.3x11           |
| 220                 | 25   | 227CKE025MGM   | 1.13                                    | 200                                                           | 6.3x11           |
| 220                 | 35   | 227CKE035M     | 0.904                                   | 300                                                           | 8x11.5           |
| 220                 | 50   | 227CKE050M     | 0.754                                   | 350                                                           | 10x12.5          |
| 220                 | 50   | 227CKH050M     | 0.7536                                  | 360                                                           | 10x16            |
| 220                 | 63   | 227CKH063M     | 0.7536                                  | 400                                                           | 10x20            |
| 220                 | 63   | 227CKE063M     | 0.754                                   | 390                                                           | 10x16            |
| 220                 | 100  | 227CKE100M     | 0.603                                   | 560                                                           | 12.5x25          |
| 220                 | 100  | 227CKH100M     | 0.603                                   | 540                                                           | 16x25            |
| 220                 | 100  | 227CKE100MNU   | 0.603                                   | 390                                                           | 12.5x20          |
| 220                 | 160  | 227CKE160MQW   | 1.13                                    | 410                                                           | 16x31.5          |
| 220                 | 200  | 227CKE200M     | 1.13                                    | 500                                                           | 16x35.5          |
| 220                 | 250  | 227CKE250M     | 1.13                                    | 485                                                           | 18x35.5          |
| 330                 | 10   | 337CKE010M     | 1.005                                   | 250                                                           | 6.3x11           |
| 330                 | 16   | 337CKE016MGM   | 0.854                                   | 225                                                           | 6.3x11           |
| 330                 | 25   | 337CKE025M     | 0.754                                   | 330                                                           | 8x11.5           |
| 330                 | 35   | 337CKE035M     | 0.603                                   | 390                                                           | 10x12.5          |
| 330                 | 50   | 337CKH050M     | 0.502                                   | 490                                                           | 10x20            |
| 330                 | 50   | 337CKE050M     | 0.502                                   | 480                                                           | 10x16            |
| 330                 | 63   | 337CKE063M     | 0.502                                   | 520                                                           | 10x20            |
| 330                 | 63   | 337CKH063M     | 0.502                                   | 530                                                           | 12.5x20          |
| 330                 | 100  | 337CKH100M     | 0.402                                   | 660                                                           | 16x25            |
| 330                 | 100  | 337CKE100M     | 0.402                                   | 690                                                           | 12.5x25          |
| 330                 | 160  | 337CKE160M     | 0.754                                   | 550                                                           | 18x35.5          |
| 330                 | 200  | 337CKE200M     | 0.754                                   | 675                                                           | 18x40            |
| 470                 | 10   | 477CKE010M     | 0.7055                                  | 290                                                           | 6.3x11           |
| 470                 | 16   | 477CKE016M     | 0.5997                                  | 370                                                           | 8x11.5           |
| 470                 | 16   | 477CKH016M     | 0.599                                   | 370                                                           | 10x12.5          |

| Capacitance<br>(µF) | WVDC | IC PART NUMBER | Maximum<br>ESR (mΩ)<br>120 Hz,<br>+20°C | Maximum<br>RMS Ripple<br>Current<br>(mA)<br>120 Hz,<br>+105°C | Dims DxL<br>(mm) |
|---------------------|------|----------------|-----------------------------------------|---------------------------------------------------------------|------------------|
| 470                 | 25   | 477CKE025M     | 0.529                                   | 420                                                           | 10x12.5          |
| 470                 | 35   | 477CKE035M     | 0.423                                   | 520                                                           | 10x16            |
| 470                 | 50   | 477CKE050M     | 0.353                                   | 630                                                           | 10x20            |
| 470                 | 50   | 477CKH050M     | 0.353                                   | 630                                                           | 12.5x20          |
| 470                 | 63   | 477CKH063M     | 0.353                                   | 690                                                           | 12.5x25          |
| 470                 | 63   | 477CKE063M     | 0.353                                   | 670                                                           | 12.5x20          |
| 470                 | 100  | 477CKE100M     | 0.282                                   | 830                                                           | 16x25            |
| 470                 | 100  | 477CKH100M     | 0.282                                   | 870                                                           | 16x31.5          |
| 680                 | 6.3  | 687CKH6R3M     | 0.585                                   | 375                                                           | 10x12.5          |
| 680                 | 16   | 687CKH016M     | 0.415                                   | 490                                                           | 10x16            |
| 680                 | 35   | 687CKH035M     | 0.293                                   | 695                                                           | 12.5x20          |
| 680                 | 50   | 687CKH050M     | 0.244                                   | 825                                                           | 12.5x25          |
| 680                 | 63   | 687CKH063M     | 0.244                                   | 925                                                           | 16x25            |
| 1000                | 6.3  | 108CKE6R3M     | 0.398                                   | 460                                                           | 8x11.5           |
| 1000                | 10   | 108CKE010M     | 0.332                                   | 530                                                           | 10x12.5          |
| 1000                | 16   | 108CKE016M     | 0.282                                   | 630                                                           | 10x16            |
| 1000                | 16   | 108CKE016MLN   | 0.282                                   | 500                                                           | 10x12.5          |
| 1000                | 16   | 108CKH016M     | 0.282                                   | 660                                                           | 10x20            |
| 1000                | 25   | 108CKE025M     | 0.249                                   | 740                                                           | 10x20            |
| 1000                | 25   | 108CKE025MLQ   | 0.249                                   | 610                                                           | 10x16            |
| 1000                | 35   | 108CKH035M     | 0.199                                   | 890                                                           | 12.5x20          |
| 1000                | 50   | 108CKH050M     | 0.166                                   | 1010                                                          | 16x25            |
| 1000                | 50   | 108CKE050M     | 0.166                                   | 1070                                                          | 12.5x25          |
| 1000                | 63   | 108CKE063M     | 0.166                                   | 1080                                                          | 16x25            |
| 1000                | 63   | 108CKH063M     | 0.166                                   | 1120                                                          | 16x31.5          |
| 1000                | 100  | 108CKE100M     | 0.133                                   | 1580                                                          | 18x40            |
| 1000                | 100  | 108CKE100MRY   | 0.133                                   | 1000                                                          | 18x35.5          |
| 1500                | 6.3  | 158CKH6R3M     | 0.287                                   | 585                                                           | 10x20            |
| 1500                | 16   | 158CKH016M     | 0.21                                    | 800                                                           | 12.5x20          |
| 1500                | 25   | 158CKH025M     | 0.188                                   | 905                                                           | 12.5x25          |
| 1500                | 35   | 158CKH035M     | 0.1547                                  | 1140                                                          | 16x25            |
| 1500                | 50   | 158CKH050M     | 0.133                                   | 1250                                                          | 18x31.5          |
| 2200                | 6.3  | 228CKE6R3M     | 0.211                                   | 760                                                           | 10x16            |
| 2200                | 10   | 228CKE010MLQ   | 0.1809                                  | 705                                                           | 10x16            |
| 2200                | 10   | 228CKE010M     | 0.1809                                  | 910                                                           | 10x20            |
| 2200                | 16   | 228CKE016M     | 0.1583                                  | 1050                                                          | 12.5x20          |
| 2200                | 16   | 228CKE016MLU   | 0.1583                                  | 710                                                           | 10x20            |
| 2200                | 16   | 228CKH016M     | 0.158                                   | 1090                                                          | 12.5x25          |
| 2200                | 25   | 228CKE025M     | 0.1432                                  | 1220                                                          | 12.5x25          |
| 2200                | 25   | 228CKH025M     | 0.143                                   | 1210                                                          | 16x25            |
| 2200                | 35   | 228CKH035M     | 0.121                                   | 1440                                                          | 16x31.5          |
| 2200                | 35   | 228CKE035M     | 0.1206                                  | 1350                                                          | 16x25            |
| 2200                | 50   | 228CKE050MQW   | 0.1055                                  | 1410                                                          | 16x31.5          |
| 2200                | 50   | 228CKH050M     | 0.106                                   | 1700                                                          | 18x35.5          |
| 2200                | 50   | 228CKE050M     | 0.1055                                  | 1700                                                          | 16x35.5          |
| 2200                | 63   | 228CKE063M     | 0.1055                                  | 1650                                                          | 18x35.5          |
| 3300                | 6.3  | 338CKE6R3M     | 0.1507                                  | 990                                                           | 10x20            |
| 3300                | 10   | 338CKE010M     | 0.131                                   | 1140                                                          | 12.5x20          |
| 3300                | 16   | 338CKE016M     | 0.116                                   | 1340                                                          | 12.5x25          |
| 3300                | 16   | 338CKH016M     | 0.116                                   | 1270                                                          | 16x25            |
| 3300                | 25   | 338CKH025M     | 0.106                                   | 1530                                                          | 16x31.5          |
| 3300                | 25   | 338CKE025M     | 0.106                                   | 1420                                                          | 16x25            |
| 3300                | 35   | 338CKE035M     | 0.0905                                  | 1810                                                          | 16x35.5          |
| 3300                | 35   | 338CKE035MQW   | 0.0905                                  | 1500                                                          | 16x31.5          |
| 3300                | 50   | 338CKE050M     | 0.0804                                  | 2060                                                          | 18x35.5          |
| 4700                | 10   | 478CKE010M     | 0.0847                                  | 1420                                                          | 12.5x25          |
| 4700                | 10   | 478CKH010M     | 0.0988                                  | 1350                                                          | 16x25            |
| 4700                | 16   | 478CKH016M     | 0.0882                                  | 1560                                                          | 16x31.5          |

# CKH\_CKE

+105°C, Extended life 2000 hour

| Capacitance (μF) | WVDC | IC PART NUMBER      | Maximum ESR (mΩ)<br>120 Hz,<br>+20°C | Maximum RMS Ripple Current (mA)<br>120 Hz,<br>+105°C | Dims DxL (mm) |
|------------------|------|---------------------|--------------------------------------|------------------------------------------------------|---------------|
| 4700             | 16   | <b>478CKE016M</b>   | 0.0741                               | 1510                                                 | 16x25         |
| 4700             | 25   | <b>478CKE025M</b>   | 0.081                                | 1740                                                 | 16x31.5       |
| 4700             | 25   | <b>478CKH025M</b>   | 0.081                                | 1780                                                 | 18x31.5       |
| 4700             | 25   | <b>478CKE025MQV</b> | 0.081                                | 1570                                                 | 16x25         |
| 4700             | 35   | <b>478CKE035M</b>   | 0.0706                               | 2110                                                 | 18x35.5       |
| 4700             | 35   | <b>478CKE035MQY</b> | 0.0706                               | 1780                                                 | 16x35.5       |
| 6800             | 6.3  | <b>688CKE6R3M</b>   | 0.0585                               | 1500                                                 | 12.5x25       |
| 6800             | 10   | <b>688CKE010M</b>   | 0.0488                               | 1600                                                 | 16x25         |
| 6800             | 16   | <b>688CKE016M</b>   | 0.071                                | 1860                                                 | 16x31.5       |
| 6800             | 16   | <b>688CKE016MQV</b> | 0.071                                | 1600                                                 | 16x25         |
| 6800             | 25   | <b>688CKE025M</b>   | 0.0658                               | 2170                                                 | 18x35.5       |
| 6800             | 25   | <b>688CKE025MQY</b> | 0.0658                               | 1850                                                 | 16x35.5       |
| 6800             | 35   | <b>688CKE035M</b>   | 0.0585                               | 2000                                                 | 18x40         |
| 10000            | 6.3  | <b>109CKH6R3M</b>   | 0.07                                 | 1730                                                 | 16x31.5       |

| Capacitance (μF) | WVDC | IC PART NUMBER      | Maximum ESR (mΩ)<br>120 Hz,<br>+20°C | Maximum RMS Ripple Current (mA)<br>120 Hz,<br>+105°C | Dims DxL (mm) |
|------------------|------|---------------------|--------------------------------------|------------------------------------------------------|---------------|
| 10000            | 6.3  | <b>109CKE6R3M</b>   | 0.0398                               | 1660                                                 | 16x25         |
| 10000            | 10   | <b>109CKE010MLQ</b> | 0.063                                | 1820                                                 | 16x31.5       |
| 10000            | 10   | <b>109CKH010M</b>   | 0.063                                | 2030                                                 | 18x35.5       |
| 10000            | 10   | <b>109CKE010M</b>   | 0.063                                | 2040                                                 | 16x35.5       |
| 10000            | 16   | <b>109CKE016M</b>   | 0.058                                | 1960                                                 | 18x35.5       |
| 10000            | 16   | <b>109CKE016MQY</b> | 0.058                                | 1930                                                 | 16x35.5       |
| 10000            | 25   | <b>109CKE025M</b>   | 0.0547                               | 2000                                                 | 18x40         |
| 15000            | 6.3  | <b>159CKE6R3M</b>   | 0.0575                               | 2140                                                 | 16x35.5       |
| 15000            | 6.3  | <b>159CKE6R3MQW</b> | 0.0575                               | 1820                                                 | 16x31.5       |
| 15000            | 10   | <b>159CKE010M</b>   | 0.0531                               | 2370                                                 | 18x35.5       |
| 15000            | 10   | <b>159CKE010MQY</b> | 0.0531                               | 2050                                                 | 16x35.5       |
| 15000            | 16   | <b>159CKE016M</b>   | 0.0497                               | 2210                                                 | 18x40         |
| 22000            | 6.3  | <b>229CKE6R3MRY</b> | 0.0497                               | 2280                                                 | 18x35.5       |
| 22000            | 10   | <b>229CKE010M</b>   | 0.0467                               | 2420                                                 | 18x40         |



**Стандарт  
Электрон  
Связь**

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