

# K85 TYPE -40°C +105°C 8000H

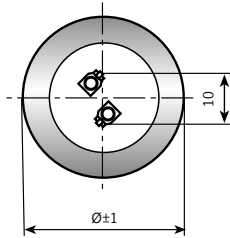
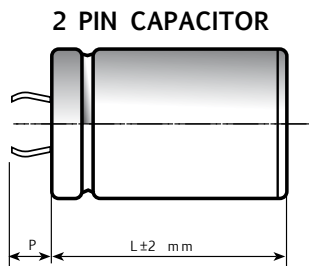
RoHS Compliant

- Design optimized for high ripple current and very long life application.
- Surge-proof capacitor in aluminium can with insulation sleeve.
- Snap in terminals for PCB mounting.

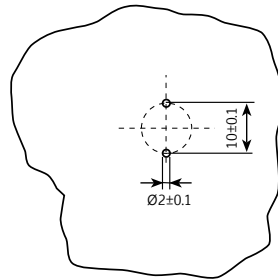
## APPLICATIONS

Designed for professional application.  
Ultra compact UPS, Solar inverters, High ripple current converters, Motor drives.

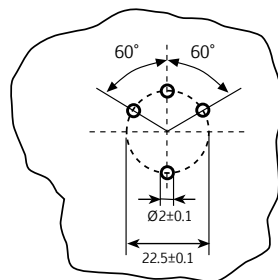
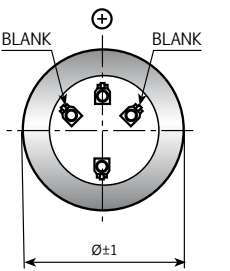
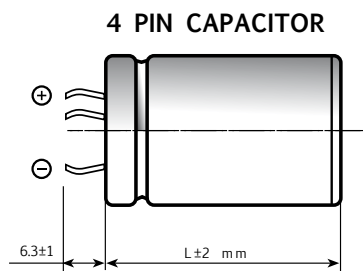
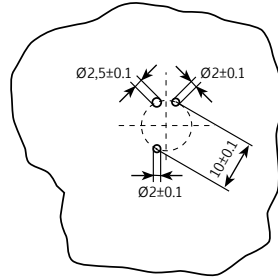
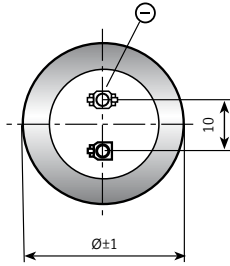
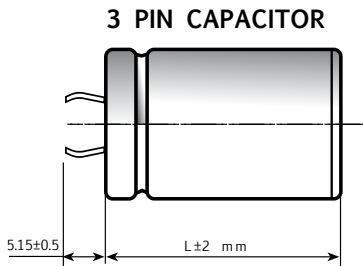
Dimensions in mm.



Circuit board  
hole dimensions



PIN LENGTH  
P 4.5 short pin  
P 6.3 long pin (standard)



| Ø      | 22 | 25 | 30 | 35 | 40 | 45 | 50 |
|--------|----|----|----|----|----|----|----|
| 2 PINS | ●  | ●  | ●  | ●  | ●  |    |    |
| 3 PINS |    | ●  | ●  | ●  |    |    |    |
| 4 PINS |    |    |    | ●  | ●  | ●  | ●  |

On demand, only for capacitors with diam ≥ 35mm: octagonal can shape for long stress vibration applications.

## SPECIFICATIONS

|  |  |   |
|--|--|---|
| <b>Temperature Range</b>   | Operating : -40°C +105°C<br>Storage : Preferably below +25°C, not exceeding +40°C                              |   |
| <b>Rated Voltage Range (V<sub>r</sub>)</b>                           | from 350V to 450V DC   |   |
| <b>Surge Voltage (V<sub>p</sub>)</b>                                 | V <sub>p</sub> = 1.10 V <sub>r</sub>   |   |
| <b>Rated Capacitance Range</b>                                       | from 100 µF to 1000 µF   |   |
| <b>Capacitance Tolerance</b>   | ±20% at 100 Hz, 20°C [M class IEC-62]  |   |
| <b>Leakage Current (I<sub>L</sub>)<br/>(mA, 5 min, 20°C)</b>         | max I <sub>L</sub> = 0.006 C <sub>r</sub> V <sub>r</sub> + 4 µA  |   |
| <b>Ripple current (I<sub>r</sub>)</b>                                | Refer to table at 105°C and 100Hz :  |   |
|  | FREQUENCY  | 50Hz    100Hz    500Hz    1000Hz    >10kHz  |
|  | MULTIPLIER   | 0.88    1.0    1.45    1.5    1.55  |
|  | AMBIENT TEMP   | 35°C    45°C    55°C    65°C    75°C    85°C    95°C    105°C   |
|  | MULTIPLIER   | 3.0    2.8    2.6    2.4    2.2    1.8    1.5    1  |
| <b>Insulation Resistance</b>   | At 100V DC for 1 min is >100 MΩ across insulating sleeve and terminals.  |   |
| <b>Vibration Resistance</b>  | Frequency range : 10 Hz to 55 Hz, amplitude 0.75 mm<br>max acceleration 10g for 3x2 h                          |   |
| <b>Life test<br/>(105°C, V<sub>n</sub>, I<sub>r</sub> applied)</b>   | After 3,000 hours application of rated voltage at 105°C capacitors meet characteristics aside                  | Cap change ≤ 10%<br>tan δ ≤ 130%<br>Leakage current (I <sub>L</sub> ) < initial limit<br>Impedance (Z) ≤ 130% |
| <b>Shelf life</b>  | After leaving capacitors under no load for 500 hours at 105°C, when restored at 20°C meet specifications aside | Cap change ≤ ±15%<br>tan δ ≤ 150%<br>Leakage current (I <sub>L</sub> ) < initial limit                        |
| <b>Useful life<br/>(105°C, V<sub>n</sub>, I<sub>r</sub> applied)</b> | ≥ 8.000 h at 105°C   | Cap change ≤ 20%<br>tan δ ≤ 200%<br>Leakage current (I <sub>L</sub> ) < initial limit<br>Impedance (Z) ≤ 200% |
| <b>Failure percentage<br/>Failure rate</b>                           | ≤ 1% (during useful life)<br>≤ 40 fit (40 10 <sup>-9</sup> /h)   |   |
| <b>Self inductance</b>   | Approx. 15 nH  |   |
| <b>Reference standards</b>   | CECC 30.300 IEC 60384-4 LONG LIFE GRADE  |   |

## K85 TYPE STANDARD RATINGS

**RATED  
VOLTAGE  
VDC**

**350V**

| Cap<br>$\mu\text{F}$ | $\varnothing \times L$<br>mm | Tan $\delta$<br>MAX<br>100 Hz 20°C | ESR<br>TYP $\text{m}\Omega$<br>100 Hz 20°C | Z<br>TYP $\text{m}\Omega$<br>10 kHz 20°C | I <sub>r</sub> a.c.<br>A max<br>100 Hz 105°C | PART NUMBER<br>termination digit<br>excluded |
|----------------------|------------------------------|------------------------------------|--|--|--|--|
| 180                  | 25x30                        | 0.06                               | 240  | 136                                      | 1.35   | K85350181_PM0C030                            |
| 220                  | 25x35                        | 0.06                               | 199  | 121                                      | 1.57   | K85350221_PM0C035                            |
| 220                  | 30x30                        | 0.06                               | 209  | 128                                      | 1.64   | K85350221_PM0D030                            |
| 330                  | 25x45                        | 0.06                               | 136  | 83                                       | 2.10   | K85350331_PM0C045                            |
| 330                  | 30x35                        | 0.06                               | 144  | 86                                       | 2.07   | K85350331_PM0D035                            |
| 390                  | 25x50                        | 0.06                               | 134  | 83                                       | 2.29   | K85350391_PM0C050                            |
| 390                  | 30x35                        | 0.06                               | 140  | 86                                       | 2.11   | K85350391_PM0D035                            |
| 390                  | 30x40                        | 0.06                               | 140  | 86                                       | 2.46   | K85350391_PM0D040                            |
| 390                  | 35x30                        | 0.06                               | 138  | 85                                       | 2.33   | K85350391_PM0E030                            |
| 470                  | 25x55                        | 0.07                               | 96   | 77                                       | 2.59   | K85350471_PM0C055                            |
| 470                  | 35x35                        | 0.07                               | 96   | 78                                       | 2.51   | K85350471_PM0E035                            |
| 560                  | 30x55                        | 0.07                               | 78   | 48                                       | 3.10   | K85350561_PM0D055                            |
| 560                  | 35x40                        | 0.07                               | 88   | 54                                       | 2.98   | K85350561_PM0E040                            |
| 680                  | 35x45                        | 0.07                               | 75   | 45                                       | 3.20   | K85350681_PM0E045                            |
| 680                  | 35x50                        | 0.07                               | 74   | 44                                       | 3.32   | K85350681_PM0E050                            |
| 720                  | 35x50                        | 0.07                               | 67   | 42                                       | 3.45   | K85350721_PM0E050                            |
| 820                  | 35x55                        | 0.07                               | 63   | 39                                       | 3.78   | K85350821_PM0E055                            |
| 1000                 | 35x60                        | 0.08                               | 60   | 39                                       | 4.00   | K85350102_PM0E060                            |

**RATED  
VOLTAGE  
VDC**

**400V**

| Cap<br>$\mu\text{F}$ | $\varnothing \times L$<br>mm | Tan $\delta$<br>MAX<br>100 Hz 20°C | ESR<br>TYP $\text{m}\Omega$<br>100 Hz 20°C | Z<br>TYP $\text{m}\Omega$<br>10 kHz 20°C | I <sub>r</sub> a.c.<br>A max<br>100 Hz 105°C | PART NUMBER<br>termination digit<br>excluded |
|----------------------|------------------------------|------------------------------------|--|--|--|--|
| 150                  | 25x30                        | 0.06                               | 291  | 160                                      | 1.23   | K85400151_PM0C030                            |
| 180                  | 25x35                        | 0.06                               | 240  | 136                                      | 1.44   | K85400181_PM0C035                            |
| 180                  | 30x30                        | 0.06                               | 240  | 136                                      | 1.53   | K85400181_PM0D030                            |
| 220                  | 25x45                        | 0.06                               | 184  | 102                                      | 1.81   | K85400221_PM0C045                            |
| 220                  | 30x35                        | 0.06                               | 196  | 110                                      | 1.79   | K85400221_PM0D035                            |
| 270                  | 25x50                        | 0.06                               | 185  | 95                                       | 1.88   | K85400271_PM0C050                            |
| 270                  | 30x35                        | 0.06                               | 170  | 98                                       | 1.91   | K85400271_PM0D035                            |
| 270                  | 35x30                        | 0.06                               | 162  | 92                                       | 2.07   | K85400271_PM0E030                            |
| 330                  | 25x55                        | 0.06                               | 121  | 67                                       | 2.41   | K85400331_PM0C055                            |
| 330                  | 30x40                        | 0.06                               | 152  | 84                                       | 2.12   | K85400331_PM0D040                            |
| 330                  | 35x35                        | 0.06                               | 153  | 89                                       | 2.24   | K85400331_PM0E035                            |
| 390                  | 30x50                        | 0.06                               | 103  | 55                                       | 2.71   | K85400391_PM0D050                            |
| 390                  | 35x40                        | 0.06                               | 114  | 63                                       | 2.73   | K85400391_PM0E040                            |
| 470                  | 30x55                        | 0.07                               | 97   | 52                                       | 3.01   | K85400471_PM0D055                            |
| 470                  | 35x45                        | 0.07                               | 95   | 52                                       | 3.07   | K85400471_PM0E045                            |
| 560                  | 35x50                        | 0.07                               | 85   | 45                                       | 3.20   | K85400561_PM0E050                            |
| 680                  | 35x55                        | 0.07                               | 75   | 45                                       | 3.51   | K85400681_PM0E055                            |

## K85 TYPE STANDARD RATINGS

**RATED  
VOLTAGE  
VDC**

**420V**

| Cap<br>µF | Ø x L<br>mm | Tan δ<br>MAX<br>100 Hz 20°C | ESR<br>TYP mΩ<br>100 Hz 20°C | Z<br>TYP mΩ<br>10 kHz 20°C | Ir a.c.<br>A max<br>100 Hz 105°C | PART NUMBER<br>termination digit<br>excluded |
|-----------|-------------|-----------------------------|------------------------------|----------------------------|----------------------------------|--|
| 120       | 25x30       | 0.06                        | 312                          | 181                        | 1.19                             | K85420121_PM0C030                            |
| 150       | 25x35       | 0.06                        | 253                          | 146                        | 1.40                             | K85420151_PM0C035                            |
| 180       | 30x30       | 0.06                        | 240                          | 136                        | 1.53                             | K85420181_PM0D030                            |
| 220       | 25x45       | 0.06                        | 184                          | 102                        | 1.81                             | K85420221_PM0C045                            |
| 220       | 30x35       | 0.06                        | 196                          | 110                        | 1.79                             | K85420221_PM0D035                            |
| 250       | 25x50       | 0.06                        | 170                          | 92                         | 1.96                             | K85420251_PM0C050                            |
| 250       | 30x35       | 0.06                        | 185                          | 103                        | 1.83                             | K85420251_PM0D035                            |
| 250       | 35x30       | 0.06                        | 172                          | 96                         | 2.00                             | K85420251_PM0E030                            |
| 270       | 30x40       | 0.06                        | 152                          | 84                         | 2.12                             | K85420271_PM0D040                            |
| 330       | 25x55       | 0.06                        | 121                          | 67                         | 2.41                             | K85420331_PM0C055                            |
| 330       | 35x35       | 0.06                        | 153                          | 89                         | 2.24                             | K85420331_PM0E035                            |
| 390       | 30x55       | 0.06                        | 103                          | 55                         | 2.91                             | K85420391_PM0C055                            |
| 390       | 35x40       | 0.06                        | 114                          | 63                         | 2.71                             | K85420391_PM0E040                            |
| 470       | 35x50       | 0.07                        | 97                           | 45                         | 3.15                             | K85420471_PM0E050                            |
| 560       | 35x55       | 0.07                        | 85                           | 45                         | 3.30                             | K85420561_PM0E055                            |
| 680       | 35x60       | 0.07                        | 75                           | 45                         | 3.54                             | K85420681_PM0E060                            |

**RATED  
VOLTAGE  
VDC**

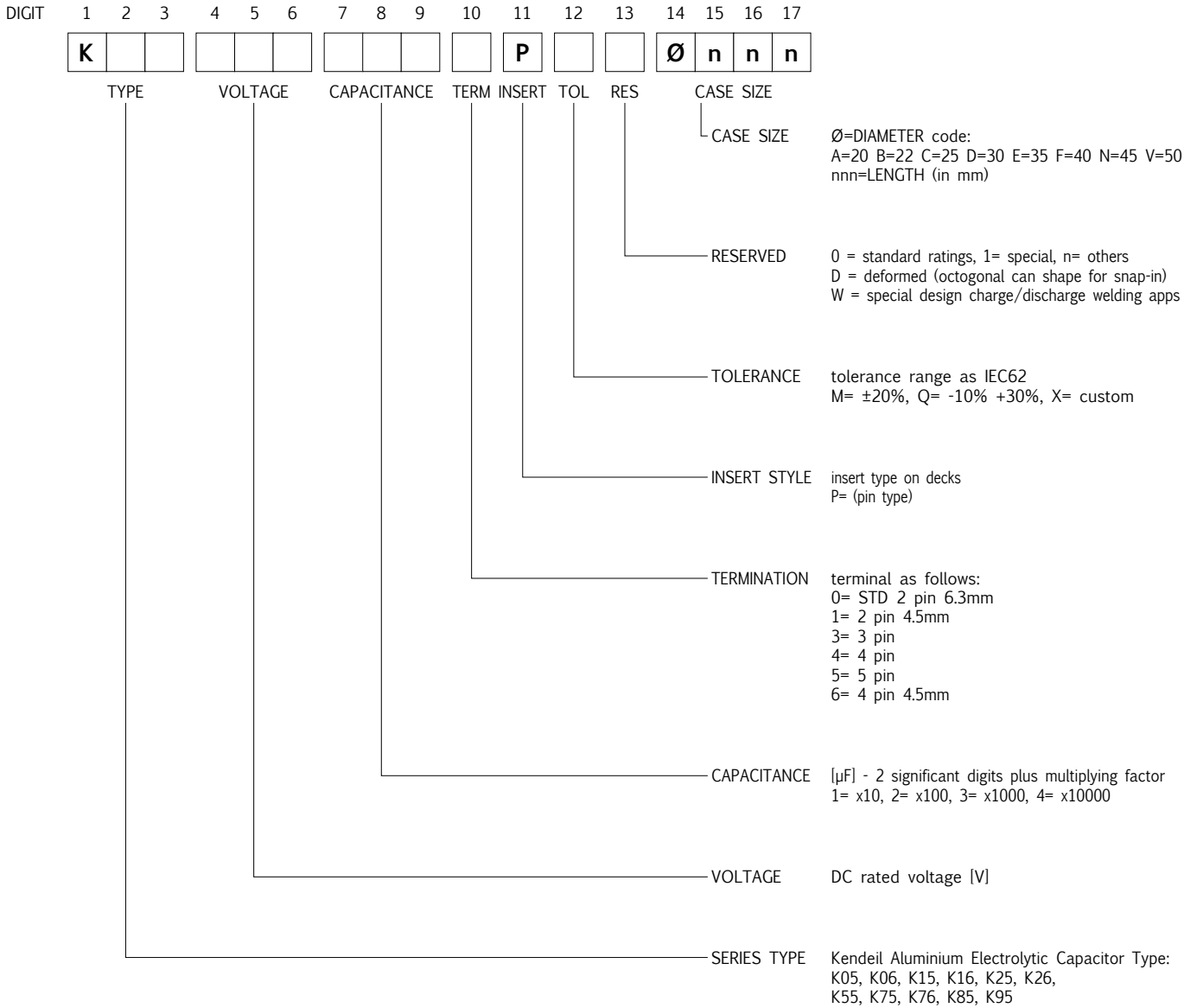
**450V**

| Cap<br>µF | Ø x L<br>mm | Tan δ<br>MAX<br>100 Hz 20°C | ESR<br>TYP mΩ<br>100 Hz 20°C | Z<br>TYP mΩ<br>10 kHz 20°C | Ir a.c.<br>A max<br>100 Hz 105°C | PART NUMBER<br>termination digit<br>excluded |
|-----------|-------------|-----------------------------|------------------------------|----------------------------|----------------------------------|--|
| 100       | 25x30       | 0.06                        | 388                          | 214                        | 1.07                             | K85450101_PM0C030                            |
| 120       | 25x35       | 0.06                        | 324                          | 178                        | 1.24                             | K85450121_PM0C035                            |
| 150       | 25x40       | 0.06                        | 250                          | 142                        | 1.48                             | K85450151_PM0C040                            |
| 150       | 30x30       | 0.06                        | 260                          | 144                        | 1.45                             | K85450151_PM0D030                            |
| 150       | 30x40       | 0.06                        | 250                          | 142                        | 1.66                             | K85450151_PM0D040                            |
| 180       | 25x45       | 0.06                        | 212                          | 119                        | 1.68                             | K85450181_PM0C045                            |
| 180       | 30x35       | 0.06                        | 223                          | 126                        | 1.67                             | K85450181_PM0D035                            |
| 220       | 25x50       | 0.06                        | 183                          | 101                        | 1.89                             | K85450221_PM0C050                            |
| 220       | 30x40       | 0.06                        | 197                          | 110                        | 1.97                             | K85450221_PM0D040                            |
| 220       | 35x30       | 0.06                        | 185                          | 104                        | 1.92                             | K85450221_PM0E030                            |
| 270       | 30x45       | 0.06                        | 159                          | 86                         | 2.21                             | K85450271_PM0D045                            |
| 270       | 35x35       | 0.06                        | 166                          | 95                         | 2.12                             | K85450271_PM0E035                            |
| 330       | 30x50       | 0.06                        | 127                          | 68                         | 2.53                             | K85450331_PM0D050                            |
| 330       | 35x40       | 0.06                        | 127                          | 68                         | 2.57                             | K85450331_PM0E040                            |
| 390       | 30x55       | 0.06                        | 110                          | 59                         | 2.82                             | K85450391_PM0D055                            |
| 390       | 35x45       | 0.06                        | 119                          | 63                         | 2.77                             | K85450391_PM0E045                            |
| 470       | 35x50       | 0.06                        | 106                          | 58                         | 3.06                             | K85450471_PM0E050                            |
| 560       | 35x55       | 0.07                        | 91                           | 54                         | 3.30                             | K85450561_PM0E055                            |
| 560       | 35x60       | 0.07                        | 91                           | 54                         | 3.42                             | K85450561_PM0E060                            |
| 680       | 35x77       | 0.07                        | 81                           | 41                         | 4.07                             | K85450681_PM0E077                            |

PLEASE TO CONTACT OUR TECHNICAL SERVICE FOR MORE INFORMATION.

# PART NUMBER SYSTEM FOR SNAP-IN TYPE CAPACITORS

New PART-NUMBER CODE in use since Sep 2010. Total length is 17 digits.  
Please see examples below and have a reference code from the standard ratings capacitors pages.



### EXAMPLES

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| K | 0 | 5 | 4 | 5 | 0 | 4 | 7 | 1 | 0 | P | M | 0 | E | 0 | 5 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

K05 450V 470µF, standard pin, ±20%, 35x50

Specifications subject to change without notice