

CF series Chip Type, Standard



NEW

- Ultra Low ESR, High ripple current.
- Load life of 2000 hours at 105°C.
- SMD type : Lead free reflow soldering condition at 260°C peak correspondence.
- Adapted to the RoHS directive (2002/95/EC).



Specifications

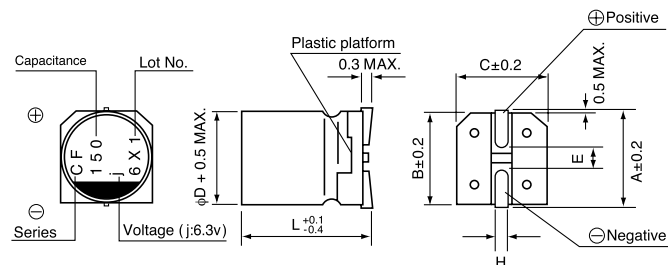
| Item | Performance Characteristics | | |
|--|--|-----------------------|---|
| Category Temperature Range | -55 ~ +105°C | | |
| Rated Voltage Range | 2.5 ~ 25V | | |
| Rated Capacitance Range | 6.8 ~ 1500μF | | |
| Capacitance Tolerance | ±20% at 120Hz, 20°C | | |
| tan δ | Not more than value of Standard ratings at 120Hz, 20°C | | |
| ESR (※ 1) | Not more than value of Standard ratings at 100kHz, 20°C | | |
| Leakage Current (※ 2) | Not more than value of Standard ratings. After 2 minute's application of rated voltage. 20°C | | |
| Characteristics of Temperature Impedance Ratio | $Z+105^{\circ}\text{C} / Z+20^{\circ}\text{C} \leq 1.25$ (100kHz) $Z-55^{\circ}\text{C} / Z+20^{\circ}\text{C} \leq 1.25$ | | |
| Endurance | After 2000 hours' application of rated voltage at 105°C, capacitors meet the specified value for life characteristics listed at right. | Capacitance change | Within ±20% of initial value (※ 3) |
| | | tan δ | 150% or less of the initial specified value |
| | | ESR (※ 1) | 150% or less of the initial specified value |
| | | Leakage current (※ 2) | Initial specified value or less |
| Damp Heat | After 1000 hours' application of rated voltage at 60°C 90%RH, capacitors meet the specified value for life characteristics listed at right. | Capacitance change | Within ±20% of initial value (※ 3) |
| | | tan δ | 150% or less of the initial specified value |
| | | ESR (※ 1) | 150% or less of the initial specified value |
| | | Leakage current (※ 2) | Initial specified value or less |
| Resistance to Soldering Heat | To comply with recommended conditions for reflow soldering. Pre-heating shall be done at 150 ~ 200°C and for 60 ~ 180 sec. In the case of peak temp, less than 250°C, reflow soldering shall be within two times. In the case of peak temp, less than 260°C, reflow soldering shall be once. Measurement for solder temperature profile shall be made at the capacitor top and the terminal. | Capacitance change | Within ±10% of initial value (※ 3) |
| | | tan δ | 130% or less of the initial specified value |
| | | ESR (※ 1) | 130% or less of the initial specified value |
| | | Leakage current (※ 2) | Initial specified value or less |
| Marking | Navy blue print on the case top | | |

※ 1 ESR measurements should be made at a point on the terminal nearest where the terminals protrude through the plastic platform.

※ 2 Conditioning : If there is doubt about the measured result, measurement should be made again after the rated voltage is applied for 120 minutes at the temperature of 105°C.

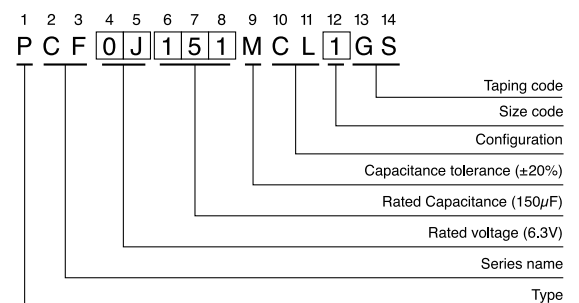
※ 3 Initial value : The value before test of examination of resistance to soldering.

Dimensions



| | (mm) | | | |
|------|-----------|-----------|-----------|-----------|
| Size | φ6.3 × 6L | φ8 × 7L | φ10 × 8L | φ10 × 10L |
| φD | 6.3 | 8.0 | 10.0 | 10.0 |
| L | 5.9 | 6.9 | 7.9 | 9.9 |
| A | 7.3 | 9.0 | 11.0 | 11.0 |
| B | 6.6 | 8.3 | 10.3 | 10.3 |
| C | 6.6 | 8.3 | 10.3 | 10.3 |
| E | 2.1 | 3.2 | 4.6 | 4.6 |
| H | 0.5 ~ 0.8 | 0.8 ~ 1.1 | 0.8 ~ 1.1 | 0.8 ~ 1.1 |

Type numbering system (Example : 6.3V 150μF)



Voltage

| | | | | | | | |
|------|-----|---|-----|----|----|----|----|
| V | 2.5 | 4 | 6.3 | 10 | 16 | 20 | 25 |
| Code | e | g | j | A | C | D | E |

● Dimension table in next page.

■ Standard ratings

| Rated Voltage (V) (code) | Rated Capacitance (μF) | Case Size φD×L (mm) | tan δ | Leakage Current (μA) | ESR (mΩ) (at 100kHz 20°C) | Rated ripple (mArms) | Part Number |
|-----------------------------|---------------------------|------------------------|-------|-------------------------|------------------------------|-------------------------|----------------|
| 2.5 (0E) | 100 | 6.3×6 | 0.12 | 100 | 22 | 2600 | PCF0E101MCL1GS |
| | 220 | 6.3×6 | 0.12 | 110 | 20 | 2800 | PCF0E221MCL1GS |
| | 470 | 8×7 | 0.12 | 235 | 20 | 3300 | PCF0E471MCL1GS |
| | 820 | 10×8 | 0.12 | 410 | 17 | 4400 | PCF0E821MCL1GS |
| | 1500 | 10×10 | 0.12 | 750 | 13 | 4700 | PCF0E152MCL1GS |
| 4 (0G) | 100 | 6.3×6 | 0.12 | 80 | 22 | 2600 | PCF0G101MCL1GS |
| | 150 | 6.3×6 | 0.12 | 120 | 22 | 2800 | PCF0G151MCL1GS |
| | 220 | 8×7 | 0.12 | 176 | 21 | 3200 | PCF0G221MCL1GS |
| | 330 | 8×7 | 0.12 | 264 | 21 | 3400 | PCF0G331MCL1GS |
| | 470 | 10×8 | 0.12 | 376 | 17 | 4200 | PCF0G471MCL1GS |
| | 680 | 10×8 | 0.12 | 544 | 17 | 4400 | PCF0G681MCL1GS |
| | 820 | 10×10 | 0.12 | 656 | 13 | 4800 | PCF0G821MCL1GS |
| 6.3 (0J) | 82 | 6.3×6 | 0.12 | 103 | 23 | 2600 | PCF0J820MCL1GS |
| | 100 | 6.3×6 | 0.12 | 126 | 23 | 2800 | PCF0J101MCL1GS |
| | 120 | 6.3×6 | 0.12 | 151 | 23 | 3000 | PCF0J121MCL1GS |
| | 150 | 8×7 | 0.12 | 189 | 22 | 3200 | PCF0J151MCL1GS |
| | 220 | 8×7 | 0.12 | 277 | 22 | 3400 | PCF0J221MCL1GS |
| | 330 | 10×8 | 0.12 | 416 | 18 | 4200 | PCF0J331MCL1GS |
| | 470 | ▲ 10×8 | 0.12 | 592 | 18 | 4300 | PCF0J471MCL6GS |
| | 470 | 10×10 | 0.12 | 592 | 16 | 4600 | PCF0J471MCL1GS |
| 10 (1A) | 680 | 10×10 | 0.12 | 856 | 14 | 5000 | PCF0J681MCL1GS |
| | 47 | 6.3×6 | 0.12 | 94 | 26 | 2600 | PCF1A470MCL1GS |
| | 56 | 6.3×6 | 0.12 | 112 | 25 | 2500 | PCF1A560MCL1GS |
| | 120 | 8×7 | 0.12 | 240 | 23 | 3000 | PCF1A121MCL1GS |
| | 150 | ▲ 8×7 | 0.12 | 300 | 23 | 3200 | PCF1A151MCL6GS |
| | 150 | 10×8 | 0.12 | 300 | 21 | 3300 | PCF1A151MCL1GS |
| | 270 | 10×8 | 0.12 | 540 | 20 | 3600 | PCF1A271MCL1GS |
| | 330 | 10×8 | 0.12 | 660 | 20 | 3700 | PCF1A331MCL1GS |
| | 470 | 10×10 | 0.12 | 940 | 16 | 4600 | PCF1A471MCL1GS |
| 16 (1C) | 560 | 10×10 | 0.12 | 1120 | 15 | 4800 | PCF1A561MCL1GS |
| | 33 | 6.3×6 | 0.12 | 106 | 31 | 2400 | PCF1C330MCL1GS |
| | 39 | 6.3×6 | 0.12 | 124 | 31 | 2400 | PCF1C390MCL1GS |
| | 56 | 8×7 | 0.12 | 179 | 30 | 2900 | PCF1C560MCL1GS |
| | 82 | 8×7 | 0.12 | 262 | 28 | 3200 | PCF1C820MCL1GS |
| | 150 | 10×8 | 0.12 | 480 | 25 | 3500 | PCF1C151MCL1GS |
| | 180 | 10×8 | 0.12 | 576 | 25 | 3600 | PCF1C181MCL1GS |
| 20 (1D) | 220 | 10×10 | 0.12 | 704 | 20 | 3900 | PCF1C221MCL1GS |
| | 22 | 6.3×6 | 0.12 | 88 | 50 | 1700 | PCF1D220MCL1GS |
| | 39 | 8×7 | 0.12 | 156 | 45 | 2000 | PCF1D390MCL1GS |
| | 68 | 10×8 | 0.12 | 272 | 40 | 2600 | PCF1D680MCL1GS |
| | 82 | 10×8 | 0.12 | 328 | 40 | 2600 | PCF1D820MCL1GS |
| | 120 | 10×10 | 0.12 | 480 | 35 | 2800 | PCF1D121MCL1GS |
| 25 (1E) | 6.8 | 6.3×6 | 0.12 | 85 | 80 | 1200 | PCF1E6R8MCL1GS |
| | 10 | 8×7 | 0.12 | 125 | 60 | 1600 | PCF1E100MCL1GS |
| | 22 | 10×8 | 0.12 | 275 | 50 | 2200 | PCF1E220MCL1GS |
| | 47 | 10×10 | 0.12 | 587 | 45 | 2400 | PCF1E470MCL1GS |

No marked, [1] will be put at 12th digit of type numbering system.

Rated Ripple (mArms) at 105°C 100kHz

▲ : In this case, [6] will be put at 12th digit of type numbering system.

- Taping specifications are given in page 24.
- Recommended land size, soldering by reflow are given in page 25, 26.
- Please refer to page 3 for the minimum order quantity.