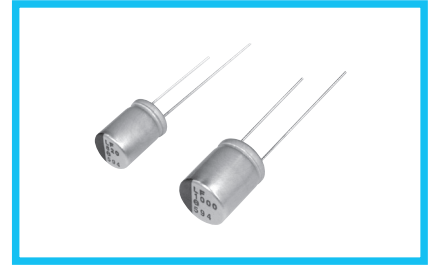
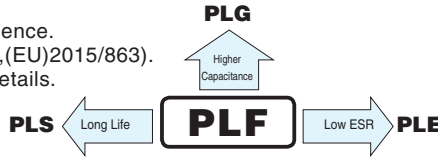


**PLF**

Radial Lead Type, Standard



- Low ESR, High ripple current.
- Load life of 2000 hours at 105°C.
- Radial lead type :  
Lead free flow soldering condition correspondence.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).
- AEC-Q200 compliant. Please contact us for details.

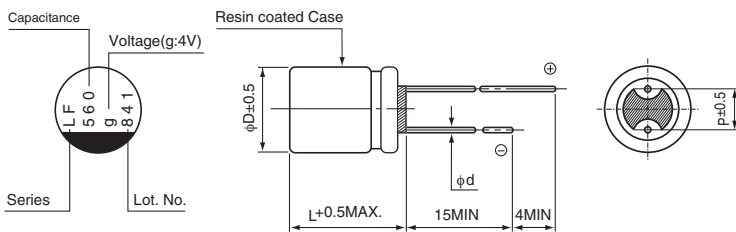


■ Specifications

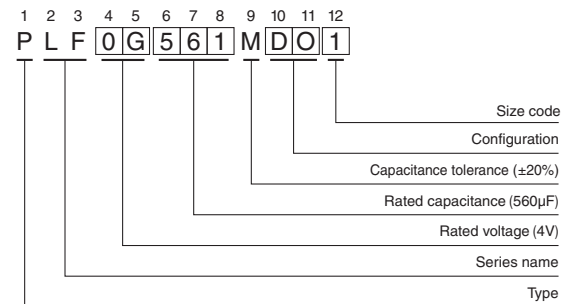
| Item  | Performance Characteristics  |  |                    |   |       |   |           |   |                       |   |
|---|--|--|--------------------|---|-------|---|-----------|---|-----------------------|---|
| Category Temperature Range                        | -55 to +105°C  |  |                    |   |       |   |           |   |                       |   |
| Rated Voltage Range                               | 2.5 to 25V   |  |                    |   |       |   |           |   |                       |   |
| Rated Capacitance Range                           | 6.8 to 1500μF  |  |                    |   |       |   |           |   |                       |   |
| Capacitance Tolerance                             | ±20% at 120Hz, 20°C  |  |                    |   |       |   |           |   |                       |   |
| Tangent of loss angle (tan δ)                     | Less than or equal to the specified value at 120Hz, 20°C   |  |                    |   |       |   |           |   |                       |   |
| ESR (※ 1)   | Less than or equal to the specified value at 100kHz, 20°C  |  |                    |   |       |   |           |   |                       |   |
| Leakage Current (※ 2)                             | Less than or equal to the specified value. After 2 minutes' application of rated voltage at 20°C   |  |                    |   |       |   |           |   |                       |   |
| Temperature Characteristics (Max.Impedance Ratio) | Z+105°C / Z+20°C ≤ 1.25 (100kHz)<br>Z-55°C / Z+20°C ≤ 1.25   |  |                    |   |       |   |           |   |                       |   |
| Endurance   | The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 105°C.   | <table border="1"> <tr><td>Capacitance change</td><td>Within ± 20% of the initial capacitance value (※ 3)</td></tr> <tr><td>tan δ</td><td>150% or less than the initial specified value</td></tr> <tr><td>ESR (※ 1)</td><td>150% or less than the initial specified value</td></tr> <tr><td>Leakage current (※ 2)</td><td>Less than or equal to the initial specified value</td></tr> </table> | Capacitance change | Within ± 20% of the initial capacitance value (※ 3) | tan δ | 150% or less than the initial specified value | ESR (※ 1) | 150% or less than the initial specified value | Leakage current (※ 2) | Less than or equal to the initial specified value |
| Capacitance change                                | Within ± 20% of the initial capacitance value (※ 3)  |  |                    |   |       |   |           |   |                       |   |
| tan δ   | 150% or less than the initial specified value  |  |                    |   |       |   |           |   |                       |   |
| ESR (※ 1)   | 150% or less than the initial specified value  |  |                    |   |       |   |           |   |                       |   |
| Leakage current (※ 2)                             | Less than or equal to the initial specified value  |  |                    |   |       |   |           |   |                       |   |
| Damp Heat (Steady State)                          | The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 60°C, 90% RH.  | <table border="1"> <tr><td>Capacitance change</td><td>Within ± 20% of the initial capacitance value (※ 3)</td></tr> <tr><td>tan δ</td><td>150% or less than the initial specified value</td></tr> <tr><td>ESR (※ 1)</td><td>150% or less than the initial specified value</td></tr> <tr><td>Leakage current (※ 2)</td><td>Less than or equal to the initial specified value</td></tr> </table> | Capacitance change | Within ± 20% of the initial capacitance value (※ 3) | tan δ | 150% or less than the initial specified value | ESR (※ 1) | 150% or less than the initial specified value | Leakage current (※ 2) | Less than or equal to the initial specified value |
| Capacitance change                                | Within ± 20% of the initial capacitance value (※ 3)  |  |                    |   |       |   |           |   |                       |   |
| tan δ   | 150% or less than the initial specified value  |  |                    |   |       |   |           |   |                       |   |
| ESR (※ 1)   | 150% or less than the initial specified value  |  |                    |   |       |   |           |   |                       |   |
| Leakage current (※ 2)                             | Less than or equal to the initial specified value  |  |                    |   |       |   |           |   |                       |   |
| Resistance to Soldering Heat                      | After soldering the capacitor under the soldering conditions prescribed here as preheat at 150 to 200°C for 60 to 180 seconds and peak temperature at 265°C for 10 seconds or less, the capacitor shall meet the specifications listed at right, provided that its temperature profile is measured at both of terminal ends facing the soldering side. | <table border="1"> <tr><td>Capacitance change</td><td>Within ± 10% of the initial capacitance value (※ 3)</td></tr> <tr><td>tan δ</td><td>130% or less than the initial specified value</td></tr> <tr><td>ESR (※ 1)</td><td>130% or less than the initial specified value</td></tr> <tr><td>Leakage current (※ 2)</td><td>Less than or equal to the initial specified value</td></tr> </table> | Capacitance change | Within ± 10% of the initial capacitance value (※ 3) | tan δ | 130% or less than the initial specified value | ESR (※ 1) | 130% or less than the initial specified value | Leakage current (※ 2) | Less than or equal to the initial specified value |
| Capacitance change                                | Within ± 10% of the initial capacitance value (※ 3)  |  |                    |   |       |   |           |   |                       |   |
| tan δ   | 130% or less than the initial specified value  |  |                    |   |       |   |           |   |                       |   |
| ESR (※ 1)   | 130% or less than the initial specified value  |  |                    |   |       |   |           |   |                       |   |
| Leakage current (※ 2)                             | Less than or equal to the initial specified value  |  |                    |   |       |   |           |   |                       |   |
| Marking   | Navy blue print on the case top  |  |                    |   |       |   |           |   |                       |   |

- ※ 1 ESR should be measured at both of the terminal ends closest to the capacitor body.
- ※ 2 Conditioning : If any doubt arises, measure the leakage current after the voltage treatment of applying DC rated voltage continuously to the capacitor for 120 minutes at 105°C.
- ※ 3 Initial value : The value before test of examination of resistance to soldering.

■ Dimensions



Type numbering system (Example : 4V 560μF)



| Size | φ6.3 × 6L | φ6.3 × 9L | φ6.3 × 10.5L | φ8 × 7L | φ8 × 9L | φ8 × 12L | φ10 × 8L | φ10 × 10L | φ10 × 13L |
|------|-----------|-----------|--------------|---------|---------|----------|----------|-----------|-----------|
| φD   | 6.3       | 6.3       | 6.3          | 8.0     | 8.0     | 8.0      | 10.0     | 10.0      | 10.0      |
| L    | 5.5       | 8.5       | 10.0         | 6.5     | 8.5     | 11.5     | 7.5      | 9.5       | 12.5      |
| P    | 2.5       | 2.5       | 2.5          | 3.5     | 3.5     | 3.5      | 5.0      | 5.0       | 5.0       |
| φd   | 0.45      | 0.6       | 0.5          | 0.6     | 0.6     | 0.6      | 0.6      | 0.6       | 0.6       |

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

● Frequency coefficient of rated ripple current

| Frequency   | 120Hz | 1kHz | 10kHz | 100kHz or more |
|-------------|-------|------|-------|----------------|
| Coefficient | 0.05  | 0.30 | 0.70  | 1.00           |

Please refer to page 20 about the end seal configuration.

● Dimension table in next page.

PLF

■ Dimensions

| Rated Voltage (V) (code) | Surge Voltage (V) | Rated Capacitance (μF) | Case Size φD × L (mm) | tan δ | Leakage Current (μA) | ESR (mΩ) (at 100kHz 20°C) | Rated Ripple (mArms) (105°C/100kHz) | Part Number  |
|--------------------------|-------------------|------------------------|-----------------------|-------|----------------------|---------------------------|-------------------------------------|--------------|
| 2.5 (0E)                 | 2.8               | 330                    | ○ 6.3 × 9             | 0.08  | 500                  | 7                         | 5600                                | PLF0E331MCO8 |
|                          |                   | 390                    | ■ 6.3 × 10.5          | 0.08  | 195                  | 20                        | 3200                                | PLF0E391MDL4 |
|                          |                   | 560                    | ○ 6.3 × 9             | 0.08  | 500                  | 7                         | 5600                                | PLF0E561MCO8 |
|                          |                   | 560                    | 8 × 9                 | 0.08  | 280                  | 6                         | 4800                                | PLF0E561MCO1 |
|                          |                   | 680                    | ▲ 8 × 9               | 0.08  | 340                  | 7                         | 4800                                | PLF0E681MCO6 |
|                          |                   | 680                    | 8 × 12                | 0.08  | 340                  | 6                         | 5700                                | PLF0E681MDO1 |
|                          |                   | 820                    | ○ 6.3 × 9             | 0.08  | 500                  | 7                         | 5600                                | PLF0E821MCO8 |
|                          |                   | 820                    | ▲ 8 × 9               | 0.08  | 410                  | 7                         | 5200                                | PLF0E821MCO6 |
|                          |                   | 820                    | 8 × 12                | 0.08  | 410                  | 6                         | 6200                                | PLF0E821MDO1 |
|                          |                   | 1000                   | 10 × 13               | 0.08  | 500                  | 6                         | 6500                                | PLF0E102MDO1 |
|                          |                   | 1200                   | 10 × 13               | 0.08  | 600                  | 8                         | 5300                                | PLF0E122MDO1 |
|                          |                   | 1500                   | ▲ 8 × 12              | 0.08  | 750                  | 7                         | 6100                                | PLF0E152MDO6 |
|                          |                   | 10 × 13                | 0.08                  | 750   | 8                    | 5500                      | PLF0E152MDO1                        |              |
| 4 (0G)                   | 4.6               | 270                    | ○ 6.3 × 9             | 0.08  | 500                  | 7                         | 5600                                | PLF0G271MCO8 |
|                          |                   | 270                    | ■ 6.3 × 10.5          | 0.08  | 216                  | 20                        | 3200                                | PLF0G271MDL4 |
|                          |                   | 390                    | ■ 6.3 × 10.5          | 0.08  | 312                  | 24                        | 3300                                | PLF0G391MDL4 |
|                          |                   | 560                    | ▲ 8 × 9               | 0.08  | 448                  | 7                         | 5200                                | PLF0G561MCO6 |
|                          |                   | 560                    | 8 × 12                | 0.08  | 448                  | 7                         | 5500                                | PLF0G561MDO1 |
|                          |                   | 680                    | 8 × 12                | 0.08  | 544                  | 6                         | 6200                                | PLF0G681MDO1 |
|                          |                   | 820                    | 10 × 13               | 0.08  | 656                  | 6                         | 6500                                | PLF0G821MDO1 |
|                          |                   | 1000                   | 10 × 13               | 0.08  | 800                  | 6                         | 6640                                | PLF0G102MDO1 |
|                          |                   | 1200                   | 10 × 13               | 0.08  | 960                  | 8                         | 5600                                | PLF0G122MDO1 |
|                          |                   | 6.3 (0J)               | 7.2                   | 220   | ■ 6.3 × 10.5         | 0.08                      | 277                                 | 20           |
| 330                      | ■ 6.3 × 10.5      |                        |                       | 0.08  | 416                  | 24                        | 3300                                | PLF0J331MDL4 |
| 470                      | ▲ 8 × 9           |                        |                       | 0.08  | 592                  | 7                         | 5200                                | PLF0J471MCO6 |
| 470                      | 8 × 12            |                        |                       | 0.08  | 592                  | 7                         | 5500                                | PLF0J471MDO1 |
| 680                      | 10 × 13           |                        |                       | 0.08  | 857                  | 6                         | 6300                                | PLF0J681MDO1 |
| 10 (1A)                  | 11.5              | 47                     | ■ 6.3 × 10.5          | 0.08  | 94                   | 25                        | 2900                                | PLF1A470MDL4 |
|                          |                   | 68                     | ■ 6.3 × 10.5          | 0.08  | 136                  | 25                        | 2900                                | PLF1A680MDL4 |
|                          |                   | 100                    | ■ 6.3 × 10.5          | 0.08  | 200                  | 25                        | 2900                                | PLF1A101MDL4 |
|                          |                   | 150                    | ■ 6.3 × 10.5          | 0.08  | 300                  | 25                        | 2900                                | PLF1A151MDL4 |
|                          |                   | 270                    | 8 × 12                | 0.08  | 540                  | 8                         | 4900                                | PLF1A271MDO1 |
|                          |                   | 470                    | 10 × 13               | 0.08  | 940                  | 7                         | 5700                                | PLF1A471MDO1 |
|                          |                   | 560                    | 10 × 13               | 0.08  | 1120                 | 7                         | 5900                                | PLF1A561MDO1 |
|                          |                   | 680                    | 10 × 13               | 0.08  | 1360                 | 7                         | 6100                                | PLF1A681MDO1 |
| 16 (1C)                  | 18.4              | 100                    | ■ 6.3 × 10.5          | 0.08  | 320                  | 24                        | 2900                                | PLF1C101MDL4 |
|                          |                   | 180                    | 8 × 12                | 0.08  | 576                  | 9                         | 5000                                | PLF1C181MDO1 |
|                          |                   | 270                    | 8 × 12                | 0.08  | 864                  | 9                         | 5100                                | PLF1C271MDO1 |
|                          |                   | 330                    | 10 × 13               | 0.08  | 1056                 | 9                         | 6100                                | PLF1C331MDO1 |
|                          |                   | 470                    | 10 × 13               | 0.08  | 1504                 | 9                         | 6100                                | PLF1C471MDO1 |
| 20 (1D)                  | 23                | 22                     | △ 6.3 × 6             | 0.12  | 88                   | 50                        | 1700                                | PLF1D220MCL2 |
|                          |                   | 39                     | △ 8 × 7               | 0.12  | 156                  | 45                        | 2000                                | PLF1D390MCL2 |
|                          |                   | 47                     | △ 8 × 7               | 0.12  | 188                  | 45                        | 2000                                | PLF1D470MCL2 |
|                          |                   | 56                     | △ 10 × 8              | 0.12  | 224                  | 40                        | 2400                                | PLF1D560MCL2 |
|                          |                   | 68                     | △ 10 × 8              | 0.12  | 272                  | 40                        | 2600                                | PLF1D680MCL2 |
|                          |                   | 82                     | △ 10 × 8              | 0.12  | 328                  | 40                        | 2600                                | PLF1D820MCL2 |
|                          |                   | 100                    | △ 8 × 12              | 0.12  | 400                  | 22                        | 3320                                | PLF1D101MDO2 |
|                          |                   | 120                    | △ 10 × 10             | 0.12  | 480                  | 35                        | 2800                                | PLF1D121MCL2 |
|                          |                   | 150                    | △ 10 × 13             | 0.12  | 600                  | 20                        | 4320                                | PLF1D151MDO2 |
| 25 (1E)                  | 28.7              | 6.8                    | △ 6.3 × 6             | 0.12  | 85                   | 80                        | 1200                                | PLF1E6R8MCL2 |
|                          |                   | 10                     | □ 6.3 × 6             | 0.12  | 125                  | 65                        | 1500                                | PLF1E100MCL7 |
|                          |                   | 10                     | △ 8 × 7               | 0.12  | 125                  | 60                        | 1500                                | PLF1E100MCL2 |
|                          |                   | 22                     | □ 8 × 7               | 0.12  | 275                  | 50                        | 1800                                | PLF1E220MCL7 |
|                          |                   | 47                     | △ 10 × 13             | 0.12  | 588                  | 30                        | 3000                                | PLF1E470MDO2 |
|                          |                   | 56                     | △ 10 × 13             | 0.12  | 700                  | 28                        | 3800                                | PLF1E560MDO2 |

Rated ripple current (mArms) at 105°C 100kHz

- Please refer to page 20, 21, 22 about the formed or taped product spec.
- Please refer to page 3 for the minimum order quantity.

No marked, [1] will be put at 12th digit of type numbering system.  
 △ : In this case, [2] will be put at 12th digit of type numbering system.  
 ■ : In this case, [4] will be put at 12th digit of type numbering system.  
 ▲ : In this case, [6] will be put at 12th digit of type numbering system.  
 □ : In this case, [7] will be put at 12th digit of type numbering system.  
 ○ : In this case, [8] will be put at 12th digit of type numbering system.

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[PLF1E6R8MCL2TD](#) [PLF1E100MCL7TP](#) [PLF0J221MDL4](#) [PLF1D151MDO2](#) [PLF0G122MDO1](#) [PLF0E561MCO8](#)  
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