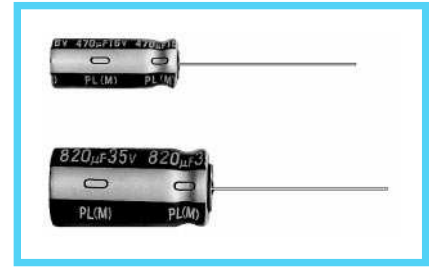


PL series Extremely Low Impedance, High Reliability



- Same case size as PF series, but extremely low impedance as little as 1/2 or PF series.
- High reliability withstanding 5000 hours load life at +105°C (3000/2000 hours for smaller case size as specified below).
- Capacitance ranges available based on the numerical values in E12 series under JIS.

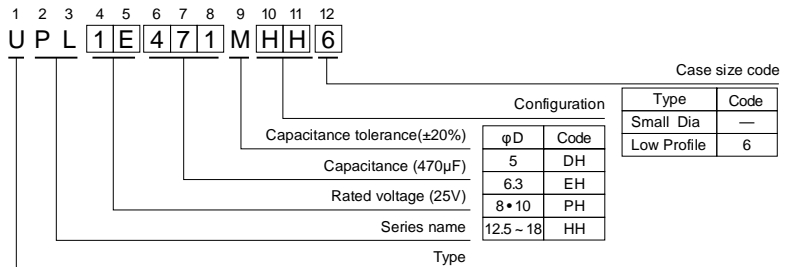
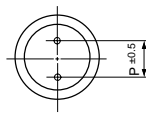
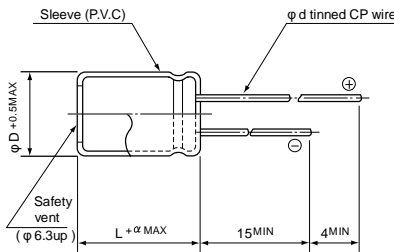


Specifications

| Item | Performance Characteristics | | | | | | | | | | | | | | | | |
|------------------------------|--|------------------------------|------------------------------|------|---|-----------------|---------------------------------|----|----|------------------------------|---------------|------|------|------|------|------|------|
| Operating Temperature Range | -55 ~ +105°C | | | | | | | | | | | | | | | | |
| Voltage Range | 6.3 ~ 63V | | | | | | | | | | | | | | | | |
| Capacitance Range | 0.47 ~ 15000µF | | | | | | | | | | | | | | | | |
| Capacitance Tolerance | ±20% at 120Hz, 20°C | | | | | | | | | | | | | | | | |
| Leakage Current | After 1 minute's application of rated voltage, leakage current is not more than 0.03CV or 4µA, whichever is greater. | | | | | | | | | | | | | | | | |
| tan δ | For capacitance of more than 1000µF, add 0.02 for every increase of 1000µF. Measurement frequency : 120Hz, Temperature : 20°C | | | | | | | | | | | | | | | | |
| | <table border="1"> <tr> <td>Rated voltage(V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> </tr> <tr> <td>tan δ (MAX.)</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.08</td> </tr> </table> | Rated voltage(V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | tan δ (MAX.) | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 |
| Rated voltage(V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | | | | | | | | | | |
| tan δ (MAX.) | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 | | | | | | | | | | |
| Stability at Low Temperature | Measurement frequency : 120Hz | | | | | | | | | | | | | | | | |
| | <table border="1"> <tr> <td>Rated voltage(V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> </tr> <tr> <td>Impedance ratio ZT/Z20(MAX.)</td> <td>Z-55°C/Z+20°C</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>2</td> <td>2</td> </tr> </table> | Rated voltage(V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | Impedance ratio ZT/Z20(MAX.) | Z-55°C/Z+20°C | 4 | 4 | 3 | 3 | 3 | 2 |
| Rated voltage(V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | | | | | | | | | | |
| Impedance ratio ZT/Z20(MAX.) | Z-55°C/Z+20°C | 4 | 4 | 3 | 3 | 3 | 2 | 2 | | | | | | | | | |
| Load Life | After an application of D.C. bias voltage plus the rated ripple current for 5000 hours (2000 hours for D = 5 and 6.3, 3000 hours for D = 8) at 105°C the peak voltage shall not exceed the rated D.C. voltage, the capacitors meet the characteristic requirements shown on the right. | | | | | | | | | | | | | | | | |
| | <table border="1"> <tr> <td>Capacitance change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>tanδ</td> <td>200% or less of initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Initial specified value or less</td> </tr> </table> | Capacitance change | Within ±20% of initial value | tanδ | 200% or less of initial specified value | Leakage current | Initial specified value or less | | | | | | | | | | |
| | Capacitance change | Within ±20% of initial value | | | | | | | | | | | | | | | |
| tanδ | 200% or less of initial specified value | | | | | | | | | | | | | | | | |
| Leakage current | Initial specified value or less | | | | | | | | | | | | | | | | |
| Shelf Life | After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for load life characteristics listed above. The value of tanδ is, however, 150% or less of initial specified value. | | | | | | | | | | | | | | | | |
| Marking | Printed with white color letter on dark brown sleeve. | | | | | | | | | | | | | | | | |
| Applicable Standards | JIS C 5141 and JIS C 5102. | | | | | | | | | | | | | | | | |

Radial Lead Type

Type numbering system (Example : 25V 470µF φ12.5 × 15)

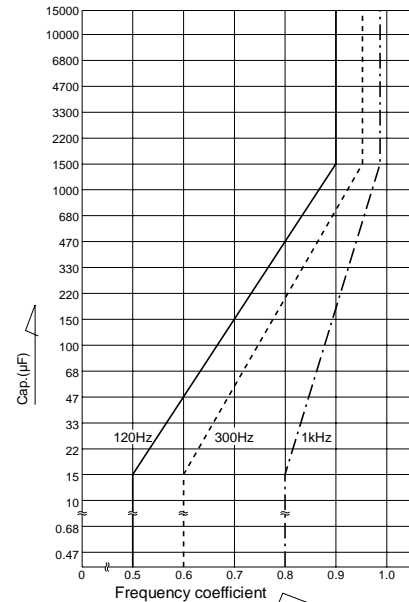


| | | |
|---|----------|-----|
| α | (L < 20) | 1.5 |
| | (L ≥ 20) | 2.0 |

| | | | | | | | |
|----|-----|-----|-----|-----|------|-----|-----|
| φD | 5 | 6.3 | 8 | 10 | 12.5 | 16 | 18 |
| P | 2.0 | 2.5 | 3.5 | 5.0 | 5.0 | 7.5 | 7.5 |
| φd | 0.5 | 0.5 | 0.6 | 0.6 | 0.6* | 0.8 | 0.8 |

* In case L > 25 for φ 12.5 (D) case sizes, lead diameter φ 0.8 (d) will be applied.

- Frequency coefficient of allowable ripple current (10kHz ~ 200kHz = 1)



Please refer to page 17, 18, 19 about the formed or taped product spec.
Please refer to page 3 for the minimum order quantity.

Dimension table in next pages.

■ Dimensions

D×L(mm)

| Cap.(μF) | V(Code) | Size code | 6.3 (0J) | | 10 (1A) | | 16 (1C) | | 25 (1E) | | 35 (1V) | | 50 (1H) | | 63 (1J) | |
|----------|---------|-----------|----------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|---------|---------|-----------|---------|-----------|
| | | | — | 6 | — | 6 | — | 6 | — | 6 | — | 6 | — | 6 | — | 6 |
| 0.47 | R47 | | | | | | | | | | | | | 5×11 | | |
| 0.68 | R68 | | | | | | | | | | | | | 5×11 | | |
| 1 | 010 | | | | | | | | | | | | | 5×11 | | |
| 1.5 | 1R5 | | | | | | | | | | | | | 5×11 | | |
| 2.2 | 2R2 | | | | | | | | | | | | | 5×11 | | |
| 3.3 | 3R3 | | | | | | | | | | | | | 5×11 | | |
| 4.7 | 4R7 | | | | | | | | | | | | | 5×11 | | |
| 6.8 | 6R8 | | | | | | | | | | | | | 5×11 | | |
| 10 | 100 | | | | | | | | | | | | | 5×11 | | 5×11 |
| 12 | 120 | | | | | | | | | | | | | 5×11 | | 5×11 |
| 15 | 150 | | | | | | | | | | | | | 5×11 | | 6.3×11 |
| 18 | 180 | | | | | | | | | | | | | 5×11 | | 6.3×11 |
| 22 | 220 | | | | | | | | | | | 5×11 | | 6.3×11 | | 6.3×11 |
| 27 | 270 | | | | | | | | | | | 5×11 | | 6.3×11 | | 6.3×11 |
| 33 | 330 | | | | | | | | 5×11 | | | 6.3×11 | | 6.3×11 | | 6.3×15 |
| 39 | 390 | | | | | | | | 5×11 | | | 6.3×11 | | 6.3×11 | | 6.3×15 |
| 47 | 470 | | | | | | 5×11 | | 6.3×11 | | | 6.3×11 | | 6.3×15 | | 8×11.5 |
| 56 | 560 | | | | | | 5×11 | | 6.3×11 | | | 6.3×11 | | 6.3×15 | | 8×15 |
| 68 | 680 | | | | 5×11 | | 6.3×11 | | 6.3×11 | | | 6.3×15 | | 8×11.5 | | 8×15 |
| 82 | 820 | | | | 5×11 | | 6.3×11 | | 6.3×11 | | | 6.3×15 | | 8×15 | 10×12.5 | 8×20 |
| 100 | 101 | 5×11 | | | 6.3×11 | | 6.3×11 | | 6.3×15 | | | 8×11.5 | | 8×20 | 10×15 | 10×20 |
| 120 | 121 | 5×11 | | | 6.3×11 | | 6.3×11 | | 6.3×15 | | | 8×15 | 10×12.5 | 8×20 | 10×15 | 10×20 |
| 150 | 151 | 6.3×11 | | | 6.3×11 | | 6.3×15 | | 8×11.5 | | | 8×15 | 10×12.5 | 10×20 | 12.5×15 | 10×25 |
| 180 | 181 | 6.3×11 | | | 6.3×11 | | 6.3×15 | | 8×15 | 10×12.5 | | 8×20 | 10×15 | 10×20 | 12.5×15 | 10×31.5 |
| 220 | 221 | 6.3×11 | | | 6.3×15 | | 8×11.5 | | 8×15 | 10×12.5 | | 8×20 | 10×15 | 10×25 | 12.5×15 | 12.5×20 |
| 270 | 271 | 6.3×15 | | | 6.3×15 | | 8×15 | 10×12.5 | 8×20 | 10×15 | | 10×20 | 12.5×15 | 10×31.5 | 16×15 | 12.5×25 |
| 330 | 331 | 6.3×15 | | | 8×11.5 | | 8×15 | 10×12.5 | 8×20 | 10×15 | | 10×20 | 12.5×15 | 10×31.5 | 16×15 | 12.5×25 |
| 390 | 391 | 8×11.5 | | | 8×15 | 10×12.5 | 8×20 | 10×15 | 10×20 | 12.5×15 | | 10×25 | 12.5×15 | 12.5×25 | 16×15 | 12.5×31.5 |
| 470 | 471 | 8×15 | 10×12.5 | | 8×15 | 10×12.5 | 8×20 | 10×15 | 10×20 | 12.5×15 | | 10×31.5 | 16×15 | 12.5×25 | 18×15 | 12.5×35.5 |
| 560 | 561 | 8×15 | 10×12.5 | | 8×20 | 10×15 | 10×20 | 12.5×15 | 10×25 | 12.5×15 | | 12.5×20 | 16×15 | 12.5×31.5 | 16×20 | 12.5×40 |
| 680 | 681 | 8×20 | 10×15 | | 8×20 | 10×15 | 10×20 | 12.5×15 | 10×31.5 | 16×15 | | 12.5×25 | 18×15 | 12.5×35.5 | 16×20 | 16×31.5 |
| 820 | 821 | 8×20 | 10×15 | 10×20 | 12.5×15 | 10×25 | 12.5×15 | 12.5×20 | 16×15 | 12.5×25 | | 18×15 | 12.5×40 | 18×20 | 16×35.5 | 18×31.5 |
| 1000 | 102 | 10×20 | 12.5×15 | 10×20 | 12.5×15 | 10×31.5 | 16×15 | 12.5×25 | 18×15 | 12.5×31.5 | | 16×20 | 16×31.5 | 18×25 | 16×40 | 18×35.5 |
| 1200 | 122 | 10×20 | 12.5×15 | 10×25 | 12.5×15 | 12.5×20 | 16×15 | 12.5×25 | 18×15 | 12.5×35.5 | | 16×25 | 16×35.5 | 18×31.5 | 18×40 | |
| 1500 | 152 | 10×25 | 12.5×15 | 10×31.5 | 16×15 | 12.5×25 | 18×15 | 12.5×31.5 | 16×20 | 12.5×40 | | 18×20 | 16×40 | 18×31.5 | | |
| 1800 | 182 | 10×31.5 | 16×15 | 12.5×20 | 16×15 | 12.5×31.5 | 16×20 | 12.5×35.5 | 16×25 | 16×31.5 | | 18×25 | 18×35.5 | | | |
| 2200 | 222 | 10×31.5 | 16×15 | 12.5×25 | 18×15 | 12.5×31.5 | 16×20 | 12.5×40 | 18×20 | 16×35.5 | | 18×31.5 | 18×40 | | | |
| 2700 | 272 | 12.5×25 | 18×15 | 12.5×31.5 | 16×20 | 12.5×35.5 | 16×25 | 16×31.5 | 18×25 | 16×40 | | 18×35.5 | | | | |
| 3300 | 332 | 12.5×25 | 18×15 | 12.5×35.5 | 16×20 | 12.5×40 | 18×20 | 16×35.5 | 18×31.5 | 18×40 | | | | | | |
| 3900 | 392 | 12.5×31.5 | 16×20 | 12.5×40 | 18×20 | 16×31.5 | 18×25 | 16×40 | 18×35.5 | | | | | | | |
| 4700 | 472 | 12.5×35.5 | 18×20 | 16×31.5 | 18×25 | 16×35.5 | 18×31.5 | 18×40 | | | | | | | | |
| 5600 | 562 | 12.5×40 | 18×20 | 16×35.5 | 18×25 | 16×40 | 18×35.5 | | | | | | | | | |
| 6800 | 682 | 16×31.5 | 18×25 | 16×35.5 | 18×31.5 | 18×35.5 | | | | | | | | | | |
| 8200 | 822 | 16×35.5 | 18×31.5 | 16×40 | 18×35.5 | 18×40 | | | | | | | | | | |
| 10000 | 103 | 16×40 | 18×31.5 | 18×40 | | | | | | | | | | | | |
| 12000 | 123 | 18×35.5 | | | | | | | | | | | | | | |
| 15000 | 153 | 18×40 | | | | | | | | | | | | | | |

※ In case of low profile type, [6] will be put at 12th digit of type numbering system.

Standard ratings

| Cap.(μF) | | V(Code) Size code Item Code | | 6.3 (0J) | | | | | | | |
|-------------|--------------|--------------------------------------|-------------|-----------------------------|-----------------|--------------|--------------------------|-------------|-----------------------------|------------------|------|
| | | | | — | | | | 6 | | | |
| | | | | Case size ΦD × L (mm) | Impedance(ΩMAX) | | Allowable ripple(mA rms) | | Case size ΦD × L (mm) | Impedance(Ω MAX) | |
| 20°C/100kHz | —10°C/100kHz | 105°C/10kHz ~ 200kHz | 105°C/120Hz | | 20°C/100kHz | —10°C/100kHz | 105°C/10kHz ~ 200kHz | 105°C/120Hz | | | |
| 100 | 101 | 5 × 11 | 0.85 | 1.70 | 150 | 99 | | | | | |
| 120 | 121 | 5 × 11 | 0.65 | 1.30 | 175 | 115 | | | | | |
| 150 | 151 | 6.3 × 11 | 0.49 | 0.98 | 225 | 155 | | | | | |
| 180 | 181 | 6.3 × 11 | 0.39 | 0.78 | 250 | 175 | | | | | |
| 220 | 221 | 6.3 × 11 | 0.30 | 0.60 | 285 | 205 | | | | | |
| 270 | 271 | 6.3 × 15 | 0.24 | 0.48 | 370 | 275 | | | | | |
| 330 | 331 | 6.3 × 15 | 0.20 | 0.40 | 405 | 310 | | | | | |
| 390 | 391 | 8 × 11.5 | 0.17 | 0.34 | 445 | 345 | | | | | |
| 470 | 471 | 8 × 15 | 0.14 | 0.28 | 550 | 435 | 10 × 12.5 | 0.14 | 0.28 | 575 | 455 |
| 560 | 561 | 8 × 15 | 0.12 | 0.24 | 595 | 480 | 10 × 12.5 | 0.13 | 0.26 | 600 | 485 |
| 680 | 681 | 8 × 20 | 0.10 | 0.20 | 730 | 605 | 10 × 15 | 0.11 | 0.22 | 700 | 580 |
| 820 | 821 | 8 × 20 | 0.085 | 0.17 | 795 | 670 | 10 × 15 | 0.095 | 0.19 | 750 | 635 |
| 1000 | 102 | 10 × 20 | 0.075 | 0.15 | 950 | 820 | 12.5 × 15 | 0.085 | 0.17 | 890 | 765 |
| 1200 | 122 | 10 × 20 | 0.065 | 0.13 | 1020 | 895 | 12.5 × 15 | 0.075 | 0.15 | 950 | 835 |
| 1500 | 152 | 10 × 25 | 0.055 | 0.11 | 1220 | 1090 | 12.5 × 15 | 0.065 | 0.13 | 1020 | 915 |
| 1800 | 182 | 10 × 31.5 | 0.050 | 0.10 | 1370 | 1230 | 16 × 15 | 0.055 | 0.11 | 1270 | 1140 |
| 2200 | 222 | 10 × 31.5 | 0.043 | 0.086 | 1470 | 1320 | 16 × 15 | 0.049 | 0.098 | 1340 | 1200 |
| 2700 | 272 | 12.5 × 25 | 0.038 | 0.076 | 1590 | 1430 | 18 × 15 | 0.044 | 0.088 | 1500 | 1350 |
| 3300 | 332 | 12.5 × 25 | 0.034 | 0.068 | 1710 | 1530 | 18 × 15 | 0.039 | 0.078 | 1600 | 1440 |
| 3900 | 392 | 12.5 × 31.5 | 0.031 | 0.062 | 1910 | 1710 | 16 × 20 | 0.036 | 0.072 | 1720 | 1540 |
| 4700 | 472 | 12.5 × 35.5 | 0.028 | 0.056 | 2100 | 1890 | 18 × 20 | 0.032 | 0.064 | 1920 | 1720 |
| 5600 | 562 | 12.5 × 40 | 0.026 | 0.052 | 2270 | 2040 | 18 × 20 | 0.030 | 0.060 | 1980 | 1780 |
| 6800 | 682 | 16 × 31.5 | 0.024 | 0.048 | 2370 | 2130 | 18 × 25 | 0.027 | 0.054 | 2210 | 1980 |
| 8200 | 822 | 16 × 35.5 | 0.022 | 0.044 | 2550 | 2290 | 18 × 31.5 | 0.025 | 0.050 | 2390 | 2150 |
| 10000 | 103 | 16 × 40 | 0.020 | 0.040 | 2750 | 2470 | 18 × 31.5 | 0.023 | 0.046 | 2490 | 2240 |
| 12000 | 123 | 18 × 35.5 | 0.019 | 0.038 | 2820 | 2530 | | | | | |
| 15000 | 153 | 18 × 40 | 0.018 | 0.036 | 2960 | 2660 | | | | | |

| Cap.(μF) | | V(Code) Size code Item Code | | 10 (1A) | | | | | | | |
|-------------|--------------|--------------------------------------|-------------|-----------------------------|------------------|--------------|--------------------------|-------------|-----------------------------|------------------|------|
| | | | | — | | | | 6 | | | |
| | | | | Case size ΦD × L (mm) | Impedance(Ω MAX) | | Allowable ripple(mA rms) | | Case size ΦD × L (mm) | Impedance(Ω MAX) | |
| 20°C/100kHz | —10°C/100kHz | 105°C/10kHz ~ 200kHz | 105°C/120Hz | | 20°C/100kHz | —10°C/100kHz | 105°C/10kHz ~ 200kHz | 105°C/120Hz | | | |
| 68 | 680 | 5 × 11 | 0.80 | 1.60 | 155 | 97 | | | | | |
| 82 | 820 | 5 × 11 | 0.65 | 1.30 | 175 | 110 | | | | | |
| 100 | 101 | 6.3 × 11 | 0.55 | 1.10 | 210 | 135 | | | | | |
| 120 | 121 | 6.3 × 11 | 0.44 | 0.88 | 235 | 160 | | | | | |
| 150 | 151 | 6.3 × 11 | 0.35 | 0.70 | 265 | 185 | | | | | |
| 180 | 181 | 6.3 × 11 | 0.29 | 0.58 | 290 | 205 | | | | | |
| 220 | 221 | 6.3 × 15 | 0.24 | 0.48 | 370 | 270 | | | | | |
| 270 | 271 | 6.3 × 15 | 0.20 | 0.40 | 405 | 300 | | | | | |
| 330 | 331 | 8 × 11.5 | 0.16 | 0.32 | 460 | 350 | | | | | |
| 390 | 391 | 8 × 15 | 0.14 | 0.28 | 550 | 430 | 10 × 12.5 | 0.15 | 0.30 | 555 | 430 |
| 470 | 471 | 8 × 15 | 0.12 | 0.24 | 595 | 475 | 10 × 12.5 | 0.13 | 0.26 | 600 | 475 |
| 560 | 561 | 8 × 20 | 0.10 | 0.20 | 730 | 590 | 10 × 15 | 0.11 | 0.22 | 700 | 565 |
| 680 | 681 | 8 × 20 | 0.085 | 0.17 | 795 | 660 | 10 × 15 | 0.090 | 0.18 | 770 | 635 |
| 820 | 821 | 10 × 20 | 0.070 | 0.14 | 985 | 835 | 12.5 × 15 | 0.080 | 0.16 | 920 | 780 |
| 1000 | 102 | 10 × 20 | 0.060 | 0.12 | 1060 | 915 | 12.5 × 15 | 0.065 | 0.13 | 1040 | 895 |
| 1200 | 122 | 10 × 25 | 0.050 | 0.10 | 1280 | 1120 | 12.5 × 15 | 0.060 | 0.12 | 1060 | 930 |
| 1500 | 152 | 10 × 31.5 | 0.045 | 0.090 | 1440 | 1290 | 16 × 15 | 0.050 | 0.10 | 1330 | 1190 |
| 1800 | 182 | 12.5 × 20 | 0.039 | 0.078 | 1470 | 1320 | 16 × 15 | 0.044 | 0.088 | 1420 | 1270 |
| 2200 | 222 | 12.5 × 25 | 0.034 | 0.068 | 1710 | 1530 | 18 × 15 | 0.039 | 0.078 | 1600 | 1440 |
| 2700 | 272 | 12.5 × 31.5 | 0.030 | 0.060 | 1940 | 1740 | 16 × 20 | 0.035 | 0.070 | 1740 | 1560 |
| 3300 | 332 | 12.5 × 35.5 | 0.026 | 0.052 | 2180 | 1960 | 16 × 20 | 0.031 | 0.062 | 1850 | 1660 |
| 3900 | 392 | 12.5 × 40 | 0.024 | 0.048 | 2360 | 2120 | 18 × 20 | 0.028 | 0.056 | 2050 | 1840 |
| 4700 | 472 | 16 × 31.5 | 0.023 | 0.046 | 2420 | 2170 | 18 × 25 | 0.026 | 0.052 | 2250 | 2020 |
| 5600 | 562 | 16 × 35.5 | 0.021 | 0.042 | 2610 | 2340 | 18 × 25 | 0.024 | 0.048 | 2340 | 2100 |
| 6800 | 682 | 16 × 35.5 | 0.020 | 0.040 | 2680 | 2410 | 18 × 31.5 | 0.022 | 0.044 | 2540 | 2280 |
| 8200 | 822 | 16 × 40 | 0.019 | 0.038 | 2820 | 2530 | 18 × 35.5 | 0.021 | 0.042 | 2690 | 2420 |
| 10000 | 103 | 18 × 40 | 0.017 | 0.034 | 3040 | 2730 | | | | | |

※ In case of low profile type, [6] will be put at 12th digit of type numbering system.

Standard ratings

| Cap. (μF) | | V(Code) Size Code Item Code | | 16 (1C) | | | | | | | | | |
|-------------|--------------|--------------------------------------|-------------|-----------------------------|------------------|--------------|--------------------------|-------------|-----------------------------|------------------|------|--------------------------|--|
| | | | | — | | | | 6 | | | | | |
| | | | | Case size ΦD × L (mm) | Impedance(Ω MAX) | | Allowable ripple(mA rms) | | Case size ΦD × L (mm) | Impedance(Ω MAX) | | Allowable ripple(mA rms) | |
| 20°C/100kHz | —10°C/100kHz | 105°C/10kHz - 200kHz | 105°C/120Hz | | 20°C/100kHz | —10°C/100kHz | 105°C/10kHz - 200kHz | 105°C/120Hz | | | | | |
| 47 | 470 | 5 × 11 | 0.80 | 1.60 | 155 | 92 | | | | | | | |
| 56 | 560 | 5 × 11 | 0.65 | 1.30 | 175 | 105 | | | | | | | |
| 68 | 680 | 6.3 × 11 | 0.50 | 1.00 | 220 | 135 | | | | | | | |
| 82 | 820 | 6.3 × 11 | 0.42 | 0.84 | 240 | 155 | | | | | | | |
| 100 | 101 | 6.3 × 11 | 0.35 | 0.70 | 265 | 175 | | | | | | | |
| 120 | 121 | 6.3 × 11 | 0.29 | 0.58 | 290 | 195 | | | | | | | |
| 150 | 151 | 6.3 × 15 | 0.23 | 0.46 | 375 | 260 | | | | | | | |
| 180 | 181 | 6.3 × 15 | 0.20 | 0.40 | 405 | 285 | | | | | | | |
| 220 | 221 | 8 × 11.5 | 0.16 | 0.32 | 460 | 335 | | | | | | | |
| 270 | 271 | 8 × 15 | 0.14 | 0.28 | 550 | 410 | 10 × 12.5 | 0.14 | 0.28 | 575 | 430 | | |
| 330 | 331 | 8 × 15 | 0.12 | 0.24 | 595 | 455 | 10 × 12.5 | 0.12 | 0.24 | 625 | 480 | | |
| 390 | 391 | 8 × 20 | 0.10 | 0.20 | 730 | 570 | 10 × 15 | 0.10 | 0.20 | 730 | 570 | | |
| 470 | 471 | 8 × 20 | 0.090 | 0.18 | 770 | 615 | 10 × 15 | 0.090 | 0.18 | 770 | 615 | | |
| 560 | 561 | 10 × 20 | 0.075 | 0.15 | 950 | 770 | 12.5 × 15 | 0.080 | 0.16 | 920 | 745 | | |
| 680 | 681 | 10 × 20 | 0.065 | 0.13 | 1020 | 845 | 12.5 × 15 | 0.070 | 0.14 | 985 | 815 | | |
| 820 | 821 | 10 × 25 | 0.055 | 0.11 | 1220 | 1030 | 12.5 × 15 | 0.060 | 0.12 | 1060 | 895 | | |
| 1000 | 102 | 10 × 31.5 | 0.047 | 0.094 | 1410 | 1210 | 16 × 15 | 0.055 | 0.11 | 1270 | 1090 | | |
| 1200 | 122 | 12.5 × 20 | 0.041 | 0.082 | 1430 | 1250 | 16 × 15 | 0.046 | 0.092 | 1390 | 1220 | | |
| 1500 | 152 | 12.5 × 25 | 0.036 | 0.072 | 1660 | 1490 | 18 × 15 | 0.041 | 0.082 | 1560 | 1400 | | |
| 1800 | 182 | 12.5 × 31.5 | 0.032 | 0.064 | 1880 | 1690 | 16 × 20 | 0.037 | 0.074 | 1700 | 1530 | | |
| 2200 | 222 | 12.5 × 31.5 | 0.028 | 0.056 | 2010 | 1800 | 16 × 20 | 0.033 | 0.066 | 1800 | 1620 | | |
| 2700 | 272 | 12.5 × 35.5 | 0.025 | 0.050 | 2220 | 1990 | 16 × 25 | 0.030 | 0.060 | 2010 | 1800 | | |
| 3300 | 332 | 12.5 × 40 | 0.023 | 0.046 | 2410 | 2160 | 18 × 20 | 0.027 | 0.054 | 2090 | 1880 | | |
| 3900 | 392 | 16 × 31.5 | 0.022 | 0.044 | 2470 | 2220 | 18 × 25 | 0.025 | 0.050 | 2290 | 2060 | | |
| 4700 | 472 | 16 × 35.5 | 0.020 | 0.040 | 2680 | 2410 | 18 × 31.5 | 0.023 | 0.046 | 2490 | 2240 | | |
| 5600 | 562 | 16 × 40 | 0.019 | 0.038 | 2820 | 2530 | 18 × 35.5 | 0.022 | 0.044 | 2620 | 2350 | | |
| 6800 | 682 | 18 × 35.5 | 0.018 | 0.036 | 2900 | 2610 | | | | | | | |
| 8200 | 822 | 18 × 40 | 0.017 | 0.034 | 3040 | 2730 | | | | | | | |

| Cap. (μF) | | V(Code) Size Code Item Code | | 25 (1E) | | | | | | | | | |
|-------------|--------------|--------------------------------------|-------------|-----------------------------|------------------|--------------|--------------------------|-------------|-----------------------------|------------------|------|--------------------------|--|
| | | | | — | | | | 6 | | | | | |
| | | | | Case size ΦD × L (mm) | Impedance(Ω MAX) | | Allowable ripple(mA rms) | | Case size ΦD × L (mm) | Impedance(Ω MAX) | | Allowable ripple(mA rms) | |
| 20°C/100kHz | —10°C/100kHz | 105°C/10kHz - 200kHz | 105°C/120Hz | | 20°C/100kHz | —10°C/100kHz | 105°C/10kHz - 200kHz | 105°C/120Hz | | | | | |
| 33 | 330 | 5 × 11 | 0.80 | 1.60 | 155 | 88 | | | | | | | |
| 39 | 390 | 5 × 11 | 0.65 | 1.30 | 175 | 100 | | | | | | | |
| 47 | 470 | 6.3 × 11 | 0.55 | 1.10 | 210 | 125 | | | | | | | |
| 56 | 560 | 6.3 × 11 | 0.44 | 0.88 | 235 | 140 | | | | | | | |
| 68 | 680 | 6.3 × 11 | 0.36 | 0.72 | 260 | 160 | | | | | | | |
| 82 | 820 | 6.3 × 11 | 0.30 | 0.60 | 285 | 180 | | | | | | | |
| 100 | 101 | 6.3 × 15 | 0.24 | 0.48 | 370 | 245 | | | | | | | |
| 120 | 121 | 6.3 × 15 | 0.20 | 0.40 | 405 | 275 | | | | | | | |
| 150 | 151 | 8 × 11.5 | 0.16 | 0.32 | 460 | 320 | | | | | | | |
| 180 | 181 | 8 × 15 | 0.14 | 0.28 | 550 | 390 | 10 × 12.5 | 0.15 | 0.30 | 555 | 395 | | |
| 220 | 221 | 8 × 15 | 0.11 | 0.22 | 625 | 455 | 10 × 12.5 | 0.13 | 0.26 | 600 | 435 | | |
| 270 | 271 | 8 × 20 | 0.095 | 0.19 | 750 | 560 | 10 × 15 | 0.11 | 0.22 | 700 | 525 | | |
| 330 | 331 | 8 × 20 | 0.085 | 0.17 | 795 | 610 | 10 × 15 | 0.095 | 0.19 | 750 | 575 | | |
| 390 | 391 | 10 × 20 | 0.070 | 0.14 | 985 | 770 | 12.5 × 15 | 0.080 | 0.16 | 920 | 720 | | |
| 470 | 471 | 10 × 20 | 0.065 | 0.13 | 1020 | 810 | 12.5 × 15 | 0.070 | 0.14 | 985 | 785 | | |
| 560 | 561 | 10 × 25 | 0.055 | 0.11 | 1220 | 990 | 12.5 × 15 | 0.060 | 0.12 | 1060 | 860 | | |
| 680 | 681 | 10 × 31.5 | 0.046 | 0.092 | 1420 | 1180 | 16 × 15 | 0.055 | 0.11 | 1270 | 1050 | | |
| 820 | 821 | 12.5 × 20 | 0.041 | 0.082 | 1430 | 1210 | 16 × 15 | 0.049 | 0.098 | 1340 | 1130 | | |
| 1000 | 102 | 12.5 × 25 | 0.036 | 0.072 | 1660 | 1430 | 18 × 15 | 0.043 | 0.086 | 1520 | 1310 | | |
| 1200 | 122 | 12.5 × 25 | 0.032 | 0.064 | 1760 | 1550 | 18 × 15 | 0.039 | 0.078 | 1600 | 1400 | | |
| 1500 | 152 | 12.5 × 31.5 | 0.029 | 0.058 | 1980 | 1780 | 16 × 20 | 0.034 | 0.068 | 1770 | 1590 | | |
| 1800 | 182 | 12.5 × 35.5 | 0.026 | 0.052 | 2180 | 1960 | 16 × 25 | 0.031 | 0.062 | 1980 | 1780 | | |
| 2200 | 222 | 12.5 × 40 | 0.024 | 0.048 | 2360 | 2120 | 18 × 20 | 0.028 | 0.056 | 2050 | 1840 | | |
| 2700 | 272 | 16 × 31.5 | 0.022 | 0.044 | 2470 | 2220 | 18 × 25 | 0.025 | 0.050 | 2290 | 2060 | | |
| 3300 | 332 | 16 × 35.5 | 0.020 | 0.040 | 2680 | 2410 | 18 × 31.5 | 0.023 | 0.046 | 2490 | 2240 | | |
| 3900 | 392 | 16 × 40 | 0.019 | 0.038 | 2820 | 2530 | 18 × 35.5 | 0.021 | 0.042 | 2690 | 2420 | | |
| 4700 | 472 | 18 × 40 | 0.018 | 0.036 | 2960 | 2660 | | | | | | | |

* In case of low profile type, [6] will be put at 12th digit of type numbering system.

PL series

■ Standard ratings

| Cap. (μF) | | V(Code) Size code Item Code | | 35 (1V) | | | | | | | | | |
|-------------|--------------|--------------------------------------|-------------|-----------------------------|-------------------|--------------|--------------------------|-------------|-----------------------------|-------------------|------|--------------------------|--|
| | | | | — | | | | 6 | | | | | |
| | | | | Case size φD × L (mm) | Impedance(Ω MAX.) | | Allowable ripple(mA rms) | | Case size φD × L (mm) | Impedance(Ω MAX.) | | Allowable ripple(mA rms) | |
| 20°C/100kHz | −10°C/100kHz | 105°C/100kHz ~ 200kHz | 105°C/120Hz | | 20°C/100kHz | −10°C/100kHz | 105°C/100kHz ~ 200kHz | 105°C/120Hz | | | | | |
| 22 | 220 | 5 × 11 | 0.75 | 1.50 | 160 | 85 | | | | | | | |
| 27 | 270 | 5 × 11 | 0.60 | 1.20 | 180 | 99 | | | | | | | |
| 33 | 330 | 6.3 × 11 | 0.49 | 0.98 | 225 | 125 | | | | | | | |
| 39 | 390 | 6.3 × 11 | 0.41 | 0.82 | 245 | 140 | | | | | | | |
| 47 | 470 | 6.3 × 11 | 0.34 | 0.68 | 270 | 160 | | | | | | | |
| 56 | 560 | 6.3 × 11 | 0.28 | 0.56 | 295 | 180 | | | | | | | |
| 68 | 680 | 6.3 × 15 | 0.24 | 0.48 | 370 | 230 | | | | | | | |
| 82 | 820 | 6.3 × 15 | 0.19 | 0.38 | 415 | 265 | | | | | | | |
| 100 | 101 | 8 × 11.5 | 0.16 | 0.32 | 460 | 305 | | | | | | | |
| 120 | 121 | 8 × 15 | 0.14 | 0.28 | 550 | 370 | 10 × 12.5 | 0.15 | 0.30 | 555 | 375 | | |
| 150 | 151 | 8 × 15 | 0.12 | 0.24 | 595 | 415 | 10 × 12.5 | 0.12 | 0.24 | 625 | 435 | | |
| 180 | 181 | 8 × 20 | 0.10 | 0.20 | 730 | 520 | 10 × 15 | 0.11 | 0.22 | 700 | 500 | | |
| 220 | 221 | 8 × 20 | 0.085 | 0.17 | 795 | 580 | 10 × 15 | 0.090 | 0.18 | 770 | 560 | | |
| 270 | 271 | 10 × 20 | 0.070 | 0.14 | 985 | 735 | 12.5 × 15 | 0.080 | 0.16 | 920 | 690 | | |
| 330 | 331 | 10 × 20 | 0.060 | 0.12 | 1060 | 810 | 12.5 × 15 | 0.065 | 0.13 | 1020 | 780 | | |
| 390 | 391 | 10 × 25 | 0.055 | 0.11 | 1220 | 955 | 12.5 × 15 | 0.060 | 0.12 | 1060 | 825 | | |
| 470 | 471 | 10 × 31.5 | 0.046 | 0.092 | 1420 | 1130 | 16 × 15 | 0.055 | 0.11 | 1270 | 1010 | | |
| 560 | 561 | 12.5 × 20 | 0.041 | 0.082 | 1430 | 1160 | 16 × 15 | 0.048 | 0.096 | 1360 | 1100 | | |
| 680 | 681 | 12.5 × 25 | 0.036 | 0.072 | 1660 | 1370 | 18 × 15 | 0.042 | 0.084 | 1540 | 1270 | | |
| 820 | 821 | 12.5 × 25 | 0.032 | 0.064 | 1760 | 1490 | 18 × 15 | 0.038 | 0.076 | 1620 | 1370 | | |
| 1000 | 102 | 12.5 × 31.5 | 0.029 | 0.058 | 1980 | 1710 | 16 × 20 | 0.034 | 0.068 | 1770 | 1530 | | |
| 1200 | 122 | 12.5 × 35.5 | 0.026 | 0.052 | 2180 | 1920 | 16 × 25 | 0.031 | 0.062 | 1980 | 1740 | | |
| 1500 | 152 | 12.5 × 40 | 0.024 | 0.048 | 2360 | 2120 | 18 × 20 | 0.028 | 0.056 | 2050 | 1840 | | |
| 1800 | 182 | 16 × 31.5 | 0.022 | 0.044 | 2470 | 2220 | 18 × 25 | 0.025 | 0.050 | 2290 | 2060 | | |
| 2200 | 222 | 16 × 35.5 | 0.020 | 0.040 | 2680 | 2410 | 18 × 31.5 | 0.023 | 0.046 | 2490 | 2240 | | |
| 2700 | 272 | 16 × 40 | 0.018 | 0.036 | 2900 | 2610 | 18 × 35.5 | 0.021 | 0.042 | 2690 | 2420 | | |
| 3300 | 332 | 18 × 40 | 0.017 | 0.034 | 3040 | 2730 | | | | | | | |

| Cap. (μF) | | V(Code) Size code Item Code | | 50 (1H) | | | | | | | | | |
|-------------|--------------|--------------------------------------|-------------|-----------------------------|-------------------|--------------|--------------------------|-------------|-----------------------------|-------------------|------|--------------------------|--|
| | | | | — | | | | 6 | | | | | |
| | | | | Case size φD × L (mm) | Impedance(Ω MAX.) | | Allowable ripple(mA rms) | | Case size φD × L (mm) | Impedance(Ω MAX.) | | Allowable ripple(mA rms) | |
| 20°C/100kHz | −10°C/100kHz | 105°C/100kHz ~ 200kHz | 105°C/120Hz | | 20°C/100kHz | −10°C/100kHz | 105°C/100kHz ~ 200kHz | 105°C/120Hz | | | | | |
| 0.47 | R47 | 5 × 11 | 23.0 | 46.0 | 22 | 11 | | | | | | | |
| 0.68 | R68 | 5 × 11 | 16.0 | 32.0 | 28 | 14 | | | | | | | |
| 1 | 010 | 5 × 11 | 11.0 | 22.0 | 36 | 18 | | | | | | | |
| 1.5 | 1R5 | 5 × 11 | 7.50 | 15.0 | 45 | 22 | | | | | | | |
| 2.2 | 2R2 | 5 × 11 | 5.00 | 10.0 | 54 | 27 | | | | | | | |
| 3.3 | 3R3 | 5 × 11 | 3.30 | 6.60 | 66 | 33 | | | | | | | |
| 4.7 | 4R7 | 5 × 11 | 2.20 | 4.40 | 81 | 40 | | | | | | | |
| 6.8 | 6R8 | 5 × 11 | 1.80 | 3.60 | 91 | 45 | | | | | | | |
| 10 | 100 | 5 × 11 | 1.40 | 2.80 | 115 | 57 | | | | | | | |
| 12 | 120 | 5 × 11 | 1.20 | 2.40 | 125 | 62 | | | | | | | |
| 15 | 150 | 5 × 11 | 0.93 | 1.86 | 145 | 72 | | | | | | | |
| 18 | 180 | 5 × 11 | 0.80 | 1.60 | 155 | 79 | | | | | | | |
| 22 | 220 | 6.3 × 11 | 0.65 | 1.30 | 195 | 100 | | | | | | | |
| 27 | 270 | 6.3 × 11 | 0.53 | 1.06 | 215 | 115 | | | | | | | |
| 33 | 330 | 6.3 × 11 | 0.43 | 0.86 | 240 | 135 | | | | | | | |
| 39 | 390 | 6.3 × 11 | 0.36 | 0.72 | 260 | 150 | | | | | | | |
| 47 | 470 | 6.3 × 15 | 0.30 | 0.60 | 330 | 195 | | | | | | | |
| 56 | 560 | 6.3 × 15 | 0.25 | 0.50 | 360 | 220 | | | | | | | |
| 68 | 680 | 8 × 11.5 | 0.20 | 0.40 | 410 | 255 | | | | | | | |
| 82 | 820 | 8 × 15 | 0.17 | 0.34 | 500 | 320 | 10 × 12.5 | 0.18 | 0.36 | 510 | 330 | | |
| 100 | 101 | 8 × 20 | 0.14 | 0.28 | 620 | 410 | 10 × 15 | 0.16 | 0.32 | 580 | 385 | | |
| 120 | 121 | 8 × 20 | 0.12 | 0.24 | 670 | 455 | 10 × 15 | 0.13 | 0.26 | 640 | 435 | | |
| 150 | 151 | 10 × 20 | 0.10 | 0.20 | 820 | 570 | 12.5 × 15 | 0.11 | 0.22 | 785 | 545 | | |
| 180 | 181 | 10 × 20 | 0.085 | 0.17 | 890 | 635 | 12.5 × 15 | 0.095 | 0.19 | 845 | 605 | | |
| 220 | 221 | 10 × 25 | 0.075 | 0.15 | 1040 | 760 | 12.5 × 15 | 0.080 | 0.16 | 920 | 670 | | |
| 270 | 271 | 10 × 31.5 | 0.065 | 0.13 | 1200 | 900 | 16 × 15 | 0.070 | 0.14 | 1120 | 840 | | |
| 330 | 331 | 10 × 31.5 | 0.055 | 0.11 | 1300 | 995 | 16 × 15 | 0.060 | 0.12 | 1210 | 925 | | |
| 390 | 391 | 12.5 × 25 | 0.048 | 0.096 | 1440 | 1120 | 16 × 15 | 0.055 | 0.11 | 1270 | 990 | | |
| 470 | 471 | 12.5 × 25 | 0.044 | 0.088 | 1500 | 1190 | 18 × 15 | 0.046 | 0.092 | 1470 | 1170 | | |
| 560 | 561 | 12.5 × 31.5 | 0.040 | 0.080 | 1680 | 1360 | 16 × 20 | 0.044 | 0.088 | 1550 | 1260 | | |
| 680 | 681 | 12.5 × 35.5 | 0.036 | 0.072 | 1850 | 1530 | 16 × 20 | 0.040 | 0.080 | 1630 | 1350 | | |
| 820 | 821 | 12.5 × 40 | 0.033 | 0.066 | 2010 | 1700 | 18 × 20 | 0.036 | 0.072 | 1810 | 1530 | | |
| 1000 | 102 | 16 × 31.5 | 0.030 | 0.060 | 2120 | 1830 | 18 × 25 | 0.033 | 0.066 | 2000 | 1730 | | |
| 1200 | 122 | 16 × 35.5 | 0.028 | 0.056 | 2260 | 1990 | 18 × 31.5 | 0.031 | 0.062 | 2140 | 1880 | | |
| 1500 | 152 | 16 × 40 | 0.026 | 0.052 | 2410 | 2170 | 18 × 31.5 | 0.029 | 0.058 | 2220 | 1990 | | |
| 1800 | 182 | 18 × 35.5 | 0.025 | 0.050 | 2460 | 2210 | | | | | | | |
| 2200 | 222 | 18 × 40 | 0.024 | 0.048 | 2560 | 2300 | | | | | | | |

※ In case of low profile type, [6] will be put at 12th digit of type numbering system.