# RXJ Series

Features

- 105℃, 2,000 ~ 5,000 hours assured
- Low ESR, suitable for switching power supplies
- Smaller size with large permissible ripple current
- RoHS Compliance

Sleeve & Marking Color: Brown & White

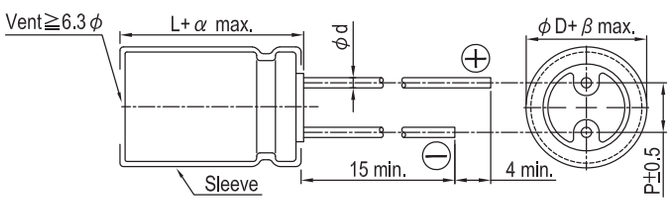
Specifications

| Items | Performance | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Category Temperature Range | 6.3 ~ 63V | | | | | | | | 100V |
| | -55℃ ~ +105℃ | | | | | | | | -40℃ ~ +105℃ |
| Capacitance Tolerance | ±20% (at 120Hz, 20℃) | | | | | | | | |
| Leakage Current (at 20℃) | I = 0.01CV or 3 (μA) whichever is greater (after 2 minutes)<br>Where, C = rated capacitance in μF, V = rated DC working voltage in V | | | | | | | | |
| Tanδ (at 120Hz, 20℃) | Rated Voltage: 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 100<br>Tanδ (max): 0.22 / 0.19 / 0.16 / 0.14 / 0.12 / 0.10 / 0.09 / 0.08<br>When the capacitance exceeds 1,000μF, 0.02 shall be added every 1,000μF increase. | | | | | | | | |
| Low Temperature Characteristics (at 120Hz) | Impedance ratio shall not exceed the values given in the table below.<br>Rated Voltage: 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 100<br>Impedance Ratio Z(-55℃)/Z(+20℃): 4 / 4 / 3 / 3 / 3 / 3 / 3 / 3 | | | | | | | | |
| Endurance | Test Time: 2,000 Hrs for φD ≦ 8 mm; 5,000 Hrs for φD ≧ 10 mm<br>Capacitance Change: Within ±20% of initial value<br>Tanδ: Less than 200% of specified value<br>Leakage Current: Within specified value<br>* The above specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage applied with rated ripple current for 2,000/5,000 hours at 105℃. | | | | | | | | |
| Shelf Life Test | Test Time: 1,000 Hrs<br>Capacitance Change: Within ±20% of initial value<br>Tanδ: Less than 200% of specified value<br>Leakage Current: Within specified value<br>* The above specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. | | | | | | | | |

Ripple Current and Frequency Multipliers

| Cap.(μF) \ Freq.(Hz) | 60 (50) | 120 | 500 | 1k | 10k | 100k |
|---|---|---|---|---|---|---|
| Under 33 | 0.40 | 0.55 | 0.65 | 0.80 | 0.90 | 1.00 |
| 39 ~ 330 | 0.60 | 0.70 | 0.80 | 0.90 | 0.95 | 1.00 |
| 390 ~ 1,000 | 0.65 | 0.80 | 0.85 | 0.98 | 1.00 | 1.00 |
| 1,200 up above | 0.80 | 0.90 | 0.95 | 0.98 | 1.00 | 1.00 |

Diagram of Dimensions




Lead Spacing and Diameter Unit: mm

| 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 | | 0.6 | | | 0.8 | |
| α | L<20: 1.5, L≧20: 2.0 | | | | | | |
| β | 0.5 | | | | | | |

Dimension: ϕD × L(mm)

Dimension and Permissible Ripple Current

Ripple Current: mA/rms at 100k Hz, 105°C

| Rated Volt. $V_{DC}$ / Contents Cap. (μF) | 6.3V (0J) | | | | | 10V (1A) | | | | | 16V (1C) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ϕD×L | Impedance (Ω, max./100k Hz) | | Ripple Current (mA/rms, 105℃) | | ϕD×L | Impedance (Ω, max./100k Hz) | | Ripple Current (mA/rms, 105℃) | | ϕD×L | Impedance (Ω, max./100k Hz) | | Ripple Current (mA/rms, 105℃) | |
| | | 20℃ | -10℃ | 120 Hz | 100k Hz | | 20℃ | -10℃ | 120 Hz | 100k Hz | | 20℃ | -10℃ | 120 Hz | 100k Hz |
| 33 | | | | | | | | | | | 5×11 | 1.30 | 3.90 | 108 | 154 |
| 39 | | | | | | | | | | | 5×11 | 1.30 | 3.90 | 108 | 154 |
| 47 | | | | | | 5×11 | 2.10 | 5.50 | 78 | 111 | 6.3×11 | 0.60 | 1.80 | 182 | 260 |
| 56 | | | | | | 5×11 | 1.90 | 4.80 | 85 | 121 | 6.3×11 | 0.60 | 1.80 | 182 | 260 |
| 68 | | | | | | 5×11 | 1.30 | 3.90 | 108 | 154 | 6.3×11 | 0.60 | 1.80 | 182 | 260 |
| 100 | 5×11 | 1.30 | 3.90 | 108 | 154 | 6.3×11 | 0.60 | 1.80 | 182 | 260 | 6.3×11 | 0.60 | 1.80 | 182 | 260 |
| 220 | 6.3×11 | 0.60 | 1.80 | 182 | 260 | 8×11.5 | 0.33 | 0.99 | 280 | 400 | 8×11.5 | 0.33 | 0.99 | 320 | 400 |
| 330 | 8×11.5 | 0.33 | 0.88 | 280 | 400 | 8×11.5 | 0.33 | 0.99 | 280 | 400 | 10×12.5 | 0.25 | 0.75 | 360 | 510 |
| 390 | 8×11.5 | 0.33 | 0.88 | 320 | 400 | 10×12.5 | 0.27 | 0.75 | 410 | 510 | 10×16 | 0.19 | 0.57 | 510 | 635 |
| 470 | 10×12.5 | 0.25 | 0.75 | 410 | 510 | 10×12.5 | 0.25 | 0.75 | 410 | 510 | 10×16 | 0.19 | 0.57 | 510 | 635 |
| 560 | 10×12.5 | 0.25 | 0.75 | 410 | 510 | 10×16 | 0.19 | 0.57 | 510 | 635 | 10×20 | 0.14 | 0.42 | 775 | 860 |
| 680 | 10×16 | 0.19 | 0.57 | 510 | 635 | 10×16 | 0.19 | 0.57 | 510 | 635 | 10×20 | 0.14 | 0.42 | 775 | 860 |
| 1,000 | 10×20 | 0.14 | 0.42 | 690 | 860 | 10×20 | 0.14 | 0.37 | 690 | 860 | 12.5×20 | 0.085 | 0.26 | 1,000 | 1,250 |
| 1,200 | 10×20 | 0.14 | 0.42 | 775 | 860 | 10×25 | 0.12 | 0.30 | 930 | 1,030 | 12.5×20 | 0.085 | 0.26 | 1,125 | 1,250 |
| 2,200 | 12.5×20 | 0.085 | 0.26 | 1,125 | 1,250 | 12.5×25 | 0.070 | 0.21 | 1,200 | 1,355 | 12.5×25 | 0.070 | 0.21 | 1,200 | 1,355 |
| 3,300 | 12.5×25 | 0.070 | 0.21 | 1,200 | 1,355 | 12.5×25 | 0.070 | 0.21 | 1,200 | 1,355 | 16×31.5 | 0.048 | 0.14 | 1,830 | 2,030 |
| 4,700 | 16×25 | 0.060 | 0.18 | 1,595 | 1,770 | 16×31.5 | 0.048 | 0.14 | 1,830 | 2,030 | 16×35.5 | 0.044 | 0.13 | 2,065 | 2,295 |

| Rated Volt. $V_{DC}$ / Contents Cap. (μF) | 25V (1E) | | | | | 35V (1V) | | | | | 50V (1H) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ϕD×L | Impedance (Ω, max./100k Hz) | | Ripple Current (mA/rms, 105℃) | | ϕD×L | Impedance (Ω, max./100k Hz) | | Ripple Current (mA/rms, 105℃) | | ϕD×L | Impedance (Ω, max./100k Hz) | | Ripple Current (mA/rms, 105℃) | |
| | | 20℃ | -10℃ | 120Hz | 100KHz | | 20℃ | -10℃ | 120Hz | 100KHz | | 20℃ | -10℃ | 120Hz | 100KHz |
| 2.2 | | | | | | | | | | | 5×11 | 4.0 | 12.0 | 48 | 88 |
| 3.3 | | | | | | | | | | | 5×11 | 3.50 | 11.0 | 52 | 94 |
| 4.7 | | | | | | | | | | | 5×11 | 3.00 | 9.00 | 55 | 100 |
| 6.8 | | | | | | | | | | | 5×11 | 3.00 | 9.00 | 55 | 100 |
| 10 | | | | | | | | | | | 5×11 | 2.00 | 6.00 | 68 | 124 |
| 22 | | | | | | 5×11 | 1.30 | 3.90 | 108 | 154 | 6.3×11 | 0.60 | 1.80 | 143 | 260 |
| 33 | 5×11 | 1.30 | 3.90 | 108 | 154 | 6.3×11 | 0.60 | 1.80 | 182 | 260 | 6.3×11 | 0.60 | 1.80 | 143 | 260 |
| 39 | 6.3×11 | 0.60 | 1.80 | 182 | 260 | 6.3×11 | 0.60 | 1.80 | 182 | 260 | 6.3×11 | 0.60 | 1.80 | 182 | 260 |
| 47 | 6.3×11 | 0.60 | 1.80 | 182 | 260 | 6.3×11 | 0.60 | 1.80 | 182 | 260 | 8×11.5 | 0.33 | 0.99 | 320 | 400 |
| 56 | 6.3×11 | 0.60 | 1.80 | 182 | 260 | 6.3×11 | 0.60 | 1.80 | 182 | 260 | 8×11.5 | 0.33 | 0.99 | 320 | 400 |
| 68 | 6.3×11 | 0.60 | 1.80 | 182 | 260 | 6.3×11 | 0.60 | 1.80 | 182 | 260 | 8×11.5 | 0.33 | 0.99 | 320 | 400 |
| 100 | 8×11.5 | 0.33 | 0.99 | 320 | 400 | 8×11.5 | 0.33 | 0.99 | 320 | 400 | 10×16 | 0.19 | 0.57 | 445 | 635 |
| 220 | 10×12.5 | 0.25 | 0.75 | 360 | 510 | 10×16 | 0.19 | 0.57 | 445 | 635 | 10×25 | 0.12 | 0.30 | 825 | 1,030 |
| 330 | 10×16 | 0.19 | 0.57 | 445 | 635 | 10×20 | 0.12 | 0.42 | 600 | 860 | 12.5×20 | 0.085 | 0.26 | 875 | 1,250 |
| 390 | 10×20 | 0.14 | 0.42 | 775 | 965 | 10×25 | 0.12 | 0.30 | 930 | 1,030 | 12.5×25 | 0.070 | 0.21 | 1,085 | 1,355 |
| 470 | 10×20 | 0.14 | 0.42 | 775 | 965 | 12.5×20 | 0.085 | 0.26 | 1,000 | 1,250 | 12.5×25 | 0.070 | 0.21 | 1,085 | 1,355 |
| 560 | 10×25 | 0.12 | 0.30 | 930 | 1,030 | 12.5×20 | 0.085 | 0.26 | 1,000 | 1,250 | 12.5×25 | 0.070 | 0.21 | 1,085 | 1,355 |
| 680 | 12.5×20 | 0.085 | 0.26 | 1,000 | 1,250 | 12.5×25 | 0.070 | 0.21 | 1,085 | 1,355 | 16×25 | 0.060 | 0.18 | 1,415 | 1,770 |
| 1,000 | 12.5×25 | 0.070 | 0.23 | 1,080 | 1,355 | 12.5×25 | 0.070 | 0.21 | 1,085 | 1,355 | 16×25 | 0.060 | 0.18 | 1,595 | 1,770 |
| 1,200 | 12.5×25 | 0.070 | 0.21 | 1,200 | 1,355 | 12.5×25 | 0.070 | 0.21 | 1,200 | 1,355 | 16×31.5 | 0.048 | 0.14 | 1,830 | 2,030 |
| 2,200 | 16×25 | 0.060 | 0.18 | 1,595 | 1,770 | 16×35.5 | 0.044 | 0.13 | 2,065 | 2,295 | 18×40 | 0.037 | 0.10 | 2,465 | 2,740 |
| 3,300 | 16×35.5 | 0.044 | 0.13 | 2,065 | 2,295 | 18×40 | 0.037 | 0.10 | 2,465 | 2,740 | | | | | |
| 4,700 | 18×40 | 0.037 | 0.10 | 2,465 | 2,740 | | | | | | | | | | |





All product specifications in the catalog are subject to change without notice. (CAT. 2018E1)

Dimension: ϕD×L(mm)

Dimension and Permissible Ripple Current

Ripple Current: mA/rms at 100k Hz, 105℃

| Rated Volt. $V_{DC}$ / Contents Cap. (μF) | 63V (1J) | | | | | 100V (2A) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | ϕD×L | Impedance (Ω, max./100k Hz) | | Ripple Current (mA/rms, 105℃) | | ϕD×L | Impedance (Ω, max./100k Hz) | | Ripple Current (mA/rms, 105℃) | |
| | | 20℃ | -10℃ | 120 Hz | 100k Hz | | 20℃ | -10℃ | 120 Hz | 100k Hz |
| 2.2 | | | | | | 5×11 | 6.00 | 21.0 | 40 | 72 |
| 3.3 | | | | | | 5×11 | 5.00 | 18.0 | 43 | 78 |
| 4.7 | | | | | | 6.3×11 | 1.20 | 4.20 | 100 | 180 |
| 6.8 | | | | | | 6.3×11 | 1.20 | 4.20 | 100 | 180 |
| 10 | 6.3×11 | 1.20 | 4.20 | 100 | 180 | 8×11.5 | 0.56 | 2.00 | 168 | 305 |
| 22 | 6.3×11 | 1.20 | 4.20 | 100 | 180 | 8×11.5 | 0.56 | 2.00 | 168 | 308 |
| 33 | 8×11.5 | 0.56 | 2.00 | 170 | 305 | 10×12.5 | 0.50 | 1.80 | 210 | 380 |
| 39 | 8×11.5 | 0.56 | 2.00 | 170 | 305 | 10×16 | 0.32 | 1.10 | 350 | 500 |
| 47 | 8×11.5 | 0.56 | 2.00 | 170 | 305 | 10×20 | 0.27 | 0.95 | 435 | 620 |
| 56 | 10×12.5 | 0.50 | 1.80 | 265 | 380 | 10×20 | 0.27 | 0.95 | 435 | 620 |
| 68 | 10×12.5 | 0.50 | 1.80 | 265 | 380 | 10×25 | 0.21 | 0.63 | 530 | 760 |
| 100 | 10×20 | 0.27 | 0.95 | 435 | 620 | 12.5×20 | 0.16 | 0.56 | 625 | 890 |
| 220 | 12.5×20 | 0.094 | 0.24 | 570 | 820 | 16×25 | 0.090 | 0.32 | 1,010 | 1,440 |
| 330 | 12.5×25 | 0.073 | 0.21 | 770 | 1,100 | 16×31.5 | 0.060 | 0.17 | 1,255 | 1,790 |
| 390 | 12.5×25 | 0.073 | 0.21 | 770 | 1,100 | 16×35.5 | 0.056 | 0.14 | 1,650 | 2,065 |
| 470 | 16×25 | 0.060 | 0.18 | 1,420 | 1,770 | | | | | |
| 560 | 16×31.5 | 0.048 | 0.14 | 1,625 | 2,030 | | | | | |
| 680 | 16×31.5 | 0.048 | 0.14 | 1,625 | 2,030 | | | | | |
| 1,000 | 18×35.5 | 0.041 | 0.11 | 1,790 | 2,240 | | | | | |

Part Numbering System

| RXJ Series | 470μF | ±20% | 6.3V | Bulk Package | Gas Type | 10ϕ×12.5L | Pb-free and PET sleeve |
|---|---|---|---|---|---|---|---|
| **RXJ** | **471** | **M** | **0J** | **BK** | **-** | **1012** | |
| Series Name | Capacitance | Capacitance Tolerance | Rated Voltage | Lead Configuration & Package | Rubber Type | Case Size | Lead Wire and Sleeve type |

Note: For more details, please refer to “Part Numbering System (Radial Type)” on page 13.