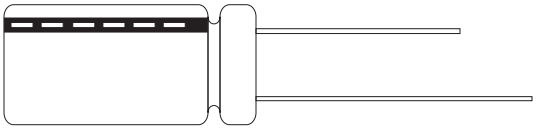
# ALUMINUM ELECTROLYTIC CAPACITORS
## RXJ Series: Low Impedance, High Temperature

RoHS

## FEATURES



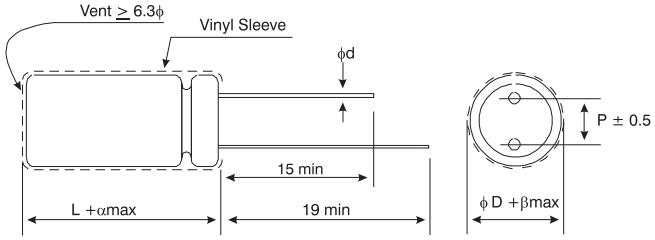
- 105°C, 2000 hours assured.
- Low ESR, suitable for switching power supplies.
- Smaller size with large permissible ripple current.
- 160 ~ 450V also suitable for ballasts.

## SPECIFICATIONS

| Item | Performance | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Operating Temperature | 6.3 ~ 100V | | | | | | | | 160 ~ 450V | | | | | | | |
| | -55°C ~ +105°C | | | | | | | | -40°C ~ +105°C | | | | | | | |
| Capacitance Tolerance | ± 20% (120Hz, 20°C) | | | | | | | | | | | | | | | |
| Leakage Current (at 20°C) | Rated Voltage | <100V | >100V | | | | | | | | | | | | | |
| | Time | After 2 minutes | After 5 minutes | | | | | | | | | | | | | |
| | Leakage Curent | I = 0.01CV or 3 (μ A) | CV<1000 | CV>1000 | | | | | | | | | | | | |
| | | whichever is greater | I=0.03CV+15(μ A) | I=0.02CV+25(μ A) | | | | | | | | | | | | |
| | Where, C = rated capacitance in μ F. V=rated DC working voltage in V. | | | | | | | | | | | | | | | |
| Dissipaton Factor Tan at 120 Hz, 20°C | Rated Voltage | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 350 | 400 | 450 | |
| | Tan (max) | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 | 0.05 | 0.20 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 | |
| | When the capacitance exceed 1000 μF 0.02 shall be added every 1000 μ F. | | | | | | | | | | | | | | | |
| Low Temperature Characteristics (at 120Hz) | Impedance ratio shall not exceed the values given in the table below | | | | | | | | | | | | | | | |
| | Rated Voltage | | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | | | | | | |
| | Impedance Ratio | Z(-55°C) /Z(+20°C) | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | | | | | | |
| Low Temperature Characteristics (at 120Hz) | Impedance ratio shall not exceed the valuesgivenin the table below | | | | | | | | | | | | | | | |
| | Impedance Ratio | Rated Voltage | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | | | | | | |
| | | Z((-55°C)/Z(+20°C) | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | | | | | | |
| | | Rated Voltage | 160 | 200 | 250 | 350 | 400 | 450 | | | | | | | | |
| | | Z(-40)/Z(+200176C) | 6 | 6 | 6 | 6 | 6 | 6 | | | | | | | | |
| Load Life Test | Test Time | 2000hrs for φ D =5~8mm<br>5000hrs for φD > 10mm | | | | | | | | | | | | | | |
| | Capacitance Change | Within ≤ ± 20% of initial value | | | | | | | | | | | | | | |
| | Dissipation Factor | Less than 200% of specified value. | | | | | | | | | | | | | | |
| | Leakage Current | Within specified value | | | | | | | | | | | | | | |
| | The above specification shall be satisfied when the capacitors are restored to 20°C after rated voltage applied for 2000 hrs at 105°C.High than 2000 hrs load life are available upon request. | | | | | | | | | | | | | | | |
| Shelf Life Test | Test Time | 1000 Hrs | | | | | | | | | | | | | | |
| | Capacitance Change | Within ≤ ± 20% | | | | | | | | | | | | | | |
| | Dissipation Factor | Less than 200% of specified value | | | | | | | | | | | | | | |
| | Leakage Current | Within Specified value | | | | | | | | | | | | | | |
| | The above specification shall be satisfied when the capacitors are restored to 20°C after rated voltage applied for 1000 hours at 105°C without voltage applied. | | | | | | | | | | | | | | | |
| Ripple Current & Frequency Multilpiers | Freq. (Hz) / Cap. ( F) | 60(50) | 120 | 500 | 1K | 10K | 100K | | | | | | | | | |
| | Under 33 | 0.40 | 0.55 | 0.65 | 0.80 | 0.90 | 1.00 | | | | | | | | | |
| | 39 to 330 | 0.60 | 0.70 | 0.80 | 0.90 | 0.95 | 1.00 | | | | | | | | | |
| | 390 to 1000 | 0.65 | 0.80 | 0.85 | 0.98 | 1.00 | 1.00 | | | | | | | | | |
| | 1200 up above | 0.80 | 0.90 | 0.95 | 0.98 | 1.00 | 1.00 | | | | | | | | | |
| Riple Current & Temperature Multipliers | Temperature (°C) | Under 50 | 70 | 85 | 105 | | | | | | | | | | | |
| | Multipliers | 2.40 | 2.05 | 1.70 | 1.00 | | | | | | | | | | | |
| Standards | Satisfies Characteristic W of JIS C 5141 | | | | | | | | | | | | | | | |

## LEAD SPACING AND DIAMETER

| φD | 5 | 6.3 | 8 | 10 | 13 | 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 | 1.0 | | | 1.5 | | | |
| β | 0.5 | | | | | | |




## PART NUMBER EXAMPLE RXJ 101 M 1E BK 080 115

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# ALUMINUM ELECTROLYTIC CAPACITORS
## RXJ Series: Low Impedance, High Temperature

RFE INTERNATIONAL

RoHS

## DIMENSIONS AND PERMISSABLE RIPPLE CURRENT

Dimension: ϕD×L(mm) Ripple Current: mA/rms at 100K Hz 105°C

| VDC / Item / μF | 6.3V(0J) | | | | | 10V(1A) | | | | | 16V(1C) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | φDxL | Impedance (Ω) Max @ 100KHz | | Ripple current (mA rms) @ 105°C | | φDxL | Impedance (Ω) Max @ 100KHz | | Ripple current (mA rms) @ 105°C | | φDxL | Impedance (Ω) Max @ 100KHz | | Ripple current (mA rms) @ 105°C | |
| | | 20°C | -10°C | 120Hz | 100KHz | | 20°C | -10°C | 120Hz | 100KHz | | 20°C | -10°C | 120Hz | 100KHz |
| 33 | | | | | | | | | | | 5 x 11 | 1.30 | 3.90 | 108 | 154 |
| 39 | | | | | | | | | | | 5 x 11 | 1.30 | 3.90 | 108 | 154 |
| 47 | | | | | | 5 x 11 | 2.10 | 5.50 | 78 | 111 | 6.3 x 11 | 0.60 | 1.80 | 182 | 260 |
| 56 | | | | | | 5 x 11 | 1.90 | 4.80 | 85 | 121 | 6.3 x 11 | 0.60 | 1.80 | 182 | 260 |
| 68 | | | | | | 5 x 11 | 1.30 | 3.90 | 108 | 154 | 6.3 x 11 | 0.60 | 1.80 | 182 | 260 |
| 100 | 5 x 11 | 1.30 | 3.90 | 108 | 154 | 6.3 x 11 | 0.60 | 1.80 | 182 | 260 | 6.3 x 11 | 0.60 | 1.80 | 182 | 260 |
| 220 | 6.3 x 11 | 0.60 | 1.80 | 182 | 260 | 8 x 11.5 | 0.33 | 0.99 | 280 | 400 | 8 x 11.5 | 0.33 | 0.99 | 320 | 400 |
| 330 | 8 x 11.5 | 0.33 | 0.88 | 280 | 400 | 8 x 11.5 | 0.33 | 0.99 | 280 | 400 | 10 x 12.5 | 0.25 | 0.75 | 360 | 510 |
| 390 | 8 x 11.5 | 0.33 | 0.88 | 320 | 400 | 10 x 12.5 | 0.27 | 0.70 | 410 | 510 | 10 x 16 | 0.19 | 0.57 | 510 | 635 |
| 470 | 10 x 12.5 | 0.25 | 0.75 | 410 | 510 | 10 x 12.5 | 0.25 | 0.75 | 410 | 510 | 10 x 16 | 0.19 | 0.57 | 510 | 635 |
| 560 | 10 x 12.5 | 0.25 | 0.75 | 410 | 510 | 10 x 16 | 0.19 | 0.57 | 510 | 635 | 10 x 20 | 0.14 | 0.42 | 775 | 860 |
| 680 | 10 x 16 | 0.19 | 0.57 | 510 | 635 | 10 x 16 | 0.19 | 0.57 | 510 | 635 | 10 x 20 | 0.14 | 0.42 | 775 | 860 |
| 1000 | 10 x 20 | 0.14 | 0.42 | 690 | 860 | 10 x 20 | 0.14 | 0.37 | 690 | 860 | 12.5 x 20 | 0.085 | 0.26 | 1000 | 1250 |
| 1200 | 10 x 20 | 0.14 | 0.42 | 775 | 860 | 10 x 25 | 0.12 | 0.30 | 930 | 1030 | 12.5 x 20 | 0.085 | 0.26 | 1125 | 1250 |
| 2200 | 12.5 x 20 | 0.085 | 0.26 | 1125 | 1250 | 12.5 x 25 | 0.070 | 0.21 | 1200 | 1355 | 12.5 x 25 | 0.070 | 0.21 | 1200 | 1355 |
| 3300 | 12.5 x 25 | 0.070 | 0.21 | 1200 | 1355 | 12.5 x 25 | 0.070 | 0.21 | 1200 | 1355 | 16 x 31.5 | 0.048 | 0.14 | 1830 | 2030 |
| 4700 | 16 x 25 | 0.060 | 0.18 | 1595 | 1770 | 16 x 31.5 | 0.048 | 0.14 | 1830 | 2030 | 16 x 35.5 | 0.044 | 0.13 | 2065 | 2295 |

| VDC / Item / μF | 25V(1E) | | | | | 35V(1V) | | | | | 50V(1H) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | φDxL | Impedance (Ω) Max @ 100KHz | | Ripple current (mA rms) @ 105°C | | φDxL | Impedance (Ω) Max @ 100KHz | | Ripple current (mA rms) @ 105°C | | φDxL | Impedance (Ω) Max @ 100KHz | | Ripple current (mA rms) @ 105°C | |
| | | 20°C | -10°C | 120Hz | 100KHz | | 20°C | -10°C | 120Hz | 100KHz | | 20°C | -10°C | 120Hz | 100KHz |
| 1 | | | | | | | | | | | 5 x 11 | 5.0 | 15.0 | 43 | 78 |
| 2.2 | | | | | | | | | | | 5 x 11 | 4.0 | 12.0 | 48 | 88 |
| 3.3 | | | | | | | | | | | 5 x 11 | 3.50 | 11.0 | 52 | 94 |
| 4.7 | | | | | | | | | | | 5 x 11 | 3.00 | 9.00 | 55 | 100 |
| 6.8 | | | | | | | | | | | 5 x 11 | 3.00 | 9.00 | 55 | 100 |
| 10 | | | | | | | | | | | 5 x 11 | 2.00 | 6.00 | 68 | 124 |
| 22 | | | | | | 5 x 11 | 1.30 | 3.90 | 108 | 154 | 6.3 x 11 | 0.60 | 1.80 | 143 | 260 |
| 33 | 5 x 11 | 1.30 | 3.90 | 108 | 154 | 6.3 x 11 | 0.60 | 1.80 | 182 | 260 | 6.3 x 11 | 0.60 | 1.80 | 143 | 260 |
| 39 | 6.3 x 11 | 0.60 | 1.80 | 182 | 260 | 6.3 x 11 | 0.60 | 1.80 | 182 | 260 | 6.3 x 11 | 0.60 | 1.80 | 182 | 260 |
| 47 | 6.3 x 11 | 0.60 | 1.80 | 182 | 260 | 6.3 x 11 | 0.60 | 1.80 | 182 | 260 | 8 x 11.5 | 0.33 | 0.99 | 320 | 400 |
| 56 | 6.3 x 11 | 0.60 | 1.80 | 182 | 260 | 6.3 x 11 | 0.60 | 1.80 | 182 | 260 | 8 x 11.5 | 0.33 | 0.99 | 320 | 400 |
| 68 | 6.3 x 11 | 0.60 | 1.80 | 182 | 260 | 6.3 x 11 | 0.60 | 1.80 | 182 | 260 | 8 x 11.5 | 0.33 | 0.99 | 320 | 400 |
| 100 | 8 x 11.5 | 0.33 | 0.99 | 320 | 400 | 8 x 11.5 | 0.33 | 0.99 | 320 | 400 | 10 x 16 | 0.19 | 0.57 | 445 | 635 |
| 220 | 10 x 12.5 | 0.25 | 0.75 | 360 | 510 | 10 x 16 | 0.19 | 0.57 | 445 | 635 | 10 x 25 | 0.12 | 0.30 | 825 | 1030 |
| 330 | 10 x 16 | 0.19 | 0.57 | 445 | 635 | 10 x 20 | 0.12 | 0.42 | 600 | 860 | 12.5 x 20 | 0.085 | 0.26 | 875 | 1250 |
| 390 | 10 x 20 | 0.14 | 0.42 | 775 | 635 | 10 x 25 | 0.12 | 0.30 | 930 | 1030 | 12.5 x 25 | 0.070 | 0.21 | 1085 | 1355 |
| 470 | 10 x 20 | 0.14 | 0.42 | 775 | 635 | 12.5 x 20 | 0.085 | 0.26 | 1000 | 1250 | 12.5 x 25 | 0.070 | 0.21 | 1085 | 1355 |
| 560 | 10 x 25 | 0.12 | 0.30 | 930 | 1030 | 12.5 x 20 | 0.085 | 0.26 | 1000 | 1250 | 12.5 x 25 | 0.070 | 0.21 | 1085 | 1355 |
| 680 | 12.5 x 20 | 0.085 | 0.26 | 1000 | 1250 | 12.5 x 25 | 0.070 | 0.21 | 1085 | 1355 | 16 x 25 | 0.060 | 0.18 | 1415 | 1770 |
| 1000 | 12.5 x 25 | 0.070 | 0.23 | 1080 | 1355 | 12.5 x 25 | 0.070 | 0.21 | 1085 | 1355 | 16 x 25 | 0.060 | 0.18 | 1595 | 1770 |
| 1200 | 12.5 x 25 | 0.070 | 0.21 | 1200 | 1355 | 12.5 x 25 | 0.070 | 0.21 | 1200 | 1355 | 16 x 31.5 | 0.048 | 0.14 | 1830 | 2030 |
| 2200 | 16 x 25 | 0.060 | 0.18 | 1595 | 1770 | 16 x 35.5 | 0.044 | 0.13 | 2065 | 2295 | 18 x 40 | 0.037 | 0.1 | 2465 | 2740 |
| 3300 | 16 x 35.5 | 0.044 | 0.13 | 2065 | 2295 | 18 x 40 | 0.037 | 0.10 | 2465 | 2740 | | | | | |
| 4700 | 18 x 40 | 0.037 | 0.1 | 2465 | 2740 | | | | | | | | | | |

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## DIMENSIONS AND PERMISSABLE RIPPLE CURRENT

Dimension: ϕD×L(mm) Ripple Current: mA/rms at 100K Hz 105°C

| VDC / Item / μF | 63V(1J) | | | | | 100V(2A) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | φDxL | Impedance (Ω) Max @ 100KHz | | Ripple current (mA rms) @ 105°C | | φDxL | Impedance (Ω) Max @ 100KHz | | Ripple current (mA rms) @ 105°C | |
| | | 20°C | -10°C | 120Hz | 100KHz | | 20°C | -10°C | 120Hz | 100KHz |
| 1 | | | | | | 5 x 11 | 7.00 | 25 | 36 | 66 |
| 2.2 | | | | | | 5 x 11 | 6.00 | 21 | 40 | 72 |
| 3.3 | | | | | | 5 x 11 | 5.00 | 18.0 | 43 | 78 |
| 4.7 | | | | | | 6.3 x 11 | 1.20 | 4.20 | 100 | 180 |
| 6.8 | | | | | | 6.3 x 11 | 1.20 | 4.20 | 100 | 180 |
| 10 | 6.3 x 11 | 1.20 | 4.2 | 100 | 180 | 8 x 11.5 | 0.56 | 2.00 | 168 | 305 |
| 22 | 6.3 x 11 | 1.20 | 4.2 | 100 | 180 | 8 x 11.5 | 0.56 | 2.00 | 168 | 308 |
| 33 | 8 x 11.5 | 0.56 | 2.00 | 170 | 305 | 10 x 12.5 | 0.50 | 1.80 | 210 | 380 |
| 39 | 8 x 11.5 | 0.56 | 2.00 | 170 | 305 | 10 x 16 | 0.32 | 1.10 | 350 | 500 |
| 47 | 8 x 11.5 | 0.56 | 2.00 | 170 | 305 | 10 x 20 | 0.27 | 0.95 | 435 | 620 |
| 56 | 10 x 12.5 | 0.50 | 1.80 | 265 | 380 | 10 x 20 | 0.27 | 0.95 | 435 | 620 |
| 68 | 10 x 12.5 | 0.50 | 1.80 | 265 | 380 | 10 x 25 | 0.21 | 0.63 | 530 | 760 |
| 100 | 10 x 20 | 0.27 | 0.95 | 600 | 620 | 13 x 20 | 0.16 | 0.56 | 625 | 890 |
| 220 | 12.5 x 20 | 0.094 | 0.24 | 570 | 820 | 16 x 25 | 0.090 | 0.32 | 1010 | 1440 |
| 330 | 12.5 x 25 | 0.073 | 0.21 | 770 | 1100 | 16 x 31.5 | 0.060 | 0.17 | 1255 | 1790 |
| 390 | 12.5 x 25 | 0.073 | 0.21 | 770 | 1100 | 16 x 35.5 | 0.056 | 0.14 | 1650 | 2065 |
| 470 | 16 x 25 | 0.060 | 0.18 | 1420 | 1770 | | | | | |
| 560 | 16 x 31.5 | 0.048 | 0.14 | 1625 | 2030 | | | | | |
| 680 | 16 x 31.5 | 0.048 | 0.14 | 1625 | 2030 | | | | | |
| 1000 | 18 x 35.5 | 0.041 | 0.11 | 1790 | 2240 | | | | | |