



Aluminum Electrolytic Capacitors XG Series

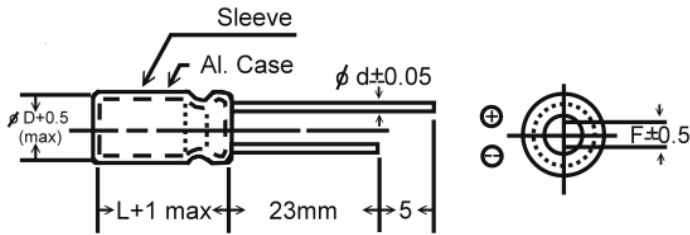
Features

- Load Life of 2000 hours at 105°C
- High reliability, suitable for switching power supplies.

Specification

| Items | Performance | | | | | | | | | | | | | | |
|--|--|---|------|------|------|------|------|------------------------------|------|------|------|------|------|------|------|
| Capacitance Tolerance | ±20% (at 120Hz, 25°C) | | | | | | | | | | | | | | |
| Rated Voltage Range | 6.3 to 100 VDC | | | | | | | 160 to 450 VDC | | | | | | | |
| Capacitance Range | 1 to 15000 uF | | | | | | | 0.47 to 220 uF | | | | | | | |
| Operating Temperature Range | -40 to + 105°C | | | | | | | -25 to 105°C | | | | | | | |
| Leakage Current (at 25°C) | I ≤ 0.01 CV or 3 (uA), whichever is greater. | | | | | | | CV ≤ 1000; I ≤ 0.03CV (uA) | | | | | | | |
| | | | | | | | | CV > 1000; I ≤ 0.03CV + 10uA | | | | | | | |
| | After 3 minutes application of working voltage. I = Leakage current (uA), C = Rated capacitance (uF), V = Rated voltage (V) | | | | | | | | | | | | | | |
| Dissipation Factor (Tan δ at 120Hz, 25°C) | Rate Voltage | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 350 | 400 | 450 |
| | Tan δ (max) | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | 0.10 | 0.10 | 0.20 | 0.20 | 0.20 | 0.24 | 0.24 | 0.24 |
| | For capacitance > 1000uF, add 0.02 per 1000uF increase. | | | | | | | | | | | | | | |
| Low Temperature characteristics (at 120Hz) | Impedance ration max. | | | | | | | | | | | | | | |
| | Rate Voltage | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 350 | 400 | 450 |
| | -25°C/25°C | 6 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 5 | 6 |
| -40°C/25°C | 10 | 8 | 6 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 6 | 6 | |
| Load Life | Application of W.V. at +105°C, the capacitor shall meet the following limits. | | | | | | | | | | | | | | |
| | Test Time | : 2000 hours for φ D ≥ 10 : 1000 hours for φ D ≤ 8 | | | | | | | | | | | | | |
| | Capacitance change | : ≤ ±25% of initial value | | | | | | | | | | | | | |
| | Dissipation factor | : ≤ 200% of initial specified value | | | | | | | | | | | | | |
| | Leakage Current | : ≤ Initial specified value | | | | | | | | | | | | | |
| Shelf Life | After storage for 500 hours at 105°C, with no voltage applied and being stabilixed at + 25°C, Capacitor shall meet the limit specified in load life. | | | | | | | | | | | | | | |
| Ripple Current & Frequency Multipliers | Freq.(Hz) | | | | | | | | | | | | | | |
| | Cap.(uF) | 60 | 120 | 1K | 10K | 100K | | | | | | | | | |
| | Under 33 | 0.30 | 0.40 | 0.70 | 0.80 | 0.90 | | | | | | | | | |
| | 33 to 330 | 0.50 | 0.60 | 0.80 | 0.85 | 0.90 | | | | | | | | | |
| | 390 to 1000 | 0.55 | 0.70 | 0.90 | 0.90 | 0.90 | | | | | | | | | |
| 1200 up above | 0.70 | 0.80 | 0.90 | 0.90 | 0.90 | | | | | | | | | | |
| Ripple Current & Temperature Multipliers | Temperature (°C) | 65 | 85 | 105 | | | | | | | | | | | |
| | Multiplier | 1.3 | 1.2 | 0.9 | | | | | | | | | | | |
| Standards | Satisfied Characteristic W of JIS C | | | | | | | | | | | | | | |

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|---|-----|-----|-----|-----|-----|----|----|
| D | 5 | 6.3 | 8 | 10 | 13 | 16 | 18 |
| F | 2.0 | 2.5 | 3.5 | 5.0 | 7.5 | | |
| d | 0.5 | | | 0.6 | 0.8 | | |

DIMENSION & PERMISSIBLE RIPPLE CURRENT

| VDC uF | 6.3V | | | 10V | | | 16V | | |
|-----------|-------------|---------------------------------|----------------------------|-------------|---------------------------------|----------------------------|-------------|---------------------------------|----------------------------|
| | DxL (mm) | Ripple Current (mA/rms,105) | Impedance(Ω) 25 ,100KHz | DxL (mm) | Ripple Current (mA/rms,105) | Impedance(Ω) 25 ,100KHz | DxL (mm) | Ripple Current (mA/rms,105) | Impedance(Ω) 25 ,100KHz |
| 220 | | | | | | | 8x11 | 210 | 0.670 |
| 330 | | | | | | | 8x11 | 200 | 0.600 |
| 470 | 8x12 | 270 | 0.500 | 8x12 | 200 | 0.500 | 8x14 | 250 | 0.500 |
| | | | | | | | 10x13 | 380 | 0.450 |
| 1000 | 8x12 | 290 | 0.500 | 8x14 | 300 | 0.400 | 10x17 | 400 | 0.350 |
| | 8x14 | 300 | 0.400 | 10x15 | 500 | 0.300 | 10x20 | 700 | 0.200 |
| 1200 | 10x20 | 550 | 0.250 | 10x20 | 600 | 0.250 | 13x21 | 780 | 0.200 |
| 1500 | 10x16 | 500 | 0.300 | 10x20 | 660 | 0.250 | 13x26 | 1100 | 0.100 |
| 2200 | 10x20 | 600 | 0.300 | 10x25 | 800 | 0.100 | 13x26 | 1000 | 0.090 |
| | 13x21 | 850 | 0.105 | 13x21 | 850 | 0.100 | | | |
| 3300 | 10x30 | 900 | 0.100 | 10x30 | 400 | 0.100 | 16x26 | 1100 | 0.075 |
| | 13x21 | 950 | 0.100 | 13x26 | 1000 | 0.080 | 16x32 | 1900 | 0.065 |
| 4700 | 13x21 | 1000 | 0.100 | 16x26 | 1350 | 0.070 | 16x32 | 1480 | 0.060 |
| | 16x26 | 1450 | 0.085 | | | | 18x36 | 1500 | 0.060 |
| 6800 | 16x26 | 1500 | 0.080 | 16x36 | 1700 | 0.060 | 18x36 | 1780 | 0.045 |
| 10000 | 16x32 | 1900 | 0.070 | 18x36 | 1900 | 0.045 | | | |
| 15000 | 18x36 | 2000 | 0.045 | | | | | | |

| VDC uF | 25V | | | 35V | | | 50V | | |
|-----------|-------------|---------------------------------|----------------------------|-------------|---------------------------------|----------------------------|-------------|---------------------------------|----------------------------|
| | DxL (mm) | Ripple Current (mA/rms,105) | Impedance(Ω) 25 ,100KHz | DxL (mm) | Ripple Current (mA/rms,105) | Impedance(Ω) 25 ,100KHz | DxL (mm) | Ripple Current (mA/rms,105) | Impedance(Ω) 25 ,100KHz |
| 47 | | | | | | | 8x11 | 200 | 0.750 |
| 100 | | | | 8x11 | 190 | 0.500 | 8x14 | 200 | 0.600 |
| 220 | 8x11 | 190 | 0.500 | 10x12 | 400 | 0.350 | 10x17 | 400 | 0.400 |
| | 8x14 | 250 | 0.450 | 10x16 | 500 | 0.300 | 10x20 | 600 | 0.300 |
| 330 | 10x13 | 380 | 0.350 | | | | | | |
| | 10x12 | 450 | 0.350 | 10x20 | 700 | 0.200 | 13x21 | 750 | 0.200 |
| 470 | 10x16 | 490 | 0.300 | | | | | | |
| | 13x21 | 800 | 0.200 | 13x26 | 700 | 0.100 | 13x26 | 850 | 0.105 |
| 1000 | | | | | | | 16x26 | 1100 | 0.085 |
| | 16x26 | 1100 | 0.075 | 16x26 | 1000 | 0.070 | 16x36 | 1100 | 0.080 |
| 2200 | | | | 16x32 | 1800 | 0.065 | 18x36 | 1400 | 0.075 |
| | 16x32 | 1200 | 0.060 | 18x36 | 1600 | 0.055 | 18x36 | 1450 | 0.060 |
| 3300 | 18x36 | 1600 | 0.045 | | | | | | |
| 4700 | 18x36 | 1700 | 0.045 | | | | | | |

DIMENSION & PERMISSIBLE RIPPLE CURRENT

| VDC uF | 63V | | | 100V | | | 160V | | |
|-----------|-------------|---------------------------------|----------------------------|-------------|---------------------------------|----------------------------|-------------|---------------------------------|----------------------------|
| | DxL (mm) | Ripple Current (mA/rms,105) | Impedance(Ω) 25 ,100KHz | DxL (mm) | Ripple Current (mA/rms,105) | Impedance(Ω) 25 ,100KHz | DxL (mm) | Ripple Current (mA/rms,105) | Impedance(Ω) 25 ,100KHz |
| 3.3 | | | | | | | 8x11 | 85 | 4.800 |
| 4.7 | | | | | | | 8x11 | 95 | 3.400 |
| 10 | | | | | | | 10x12 | 190 | 2.000 |
| 22 | | | | 8x11 | 65 | 1.600 | 10x15 | 210 | 2.000 |
| 33 | 8x11 | 200 | 0.750 | 10x12 | 100 | 1.500 | 10x20 | 310 | 1.600 |
| 47 | 8x11 | 200 | 0.750 | 10x12 | 200 | 1.000 | 13x21 | 410 | 1.100 |
| 100 | 10x17 | 170 | 0.750 | 10x20 | 200 | 0.800 | 16x26 | 710 | 0.700 |
| | | | | 10x25 | 190 | 0.600 | | | |
| 220 | 13x20 | 500 | 0.500 | 13x26 | 380 | 0.400 | 16x36 | 1100 | 0.400 |
| | | | | 16x26 | 730 | 0.350 | | | |
| 330 | 13x20 | 510 | 0.300 | 16x26 | 980 | 0.250 | 22x38 | 1800 | 0.350 |
| 470 | 13x21 | 500 | 0.400 | 16x33 | 1000 | 0.250 | | | |
| | 13x26 | 750 | 0.250 | | | | | | |
| 1000 | 16x32 | 1100 | 0.110 | 18x40 | 1100 | 0.110 | | | |

| VDC uF | 200V | | | 250V | | | 350V | | |
|-----------|-------------|---------------------------------|----------------------------|-------------|---------------------------------|----------------------------|-------------|---------------------------------|----------------------------|
| | DxL (mm) | Ripple Current (mA/rms,105) | Impedance(Ω) 25 ,100KHz | DxL (mm) | Ripple Current (mA/rms,105) | Impedance(Ω) 25 ,100KHz | DxL (mm) | Ripple Current (mA/rms,105) | Impedance(Ω) 25 ,100KHz |
| 1 | | | | 6.3x11 | 35 | 8.800 | 8x11 | 60 | 4.500 |
| 2.2 | 8x11 | 50 | 5.800 | 8x11 | 60 | 5.500 | 10x12 | 110 | 3.800 |
| 3.3 | 8x11 | 100 | 4.600 | 8x11 | 100 | 4.600 | 10x12 | 110 | 3.800 |
| 4.7 | 8x11 | 110 | 3.500 | 10x12 | 110 | 3.800 | 10x15 | 120 | 3.300 |
| 10 | 10x12 | 190 | 2.000 | 10x15 | 140 | 3.500 | 10x20 | 120 | 3.300 |
| 22 | 10x20 | 220 | 1.000 | 10x20 | 200 | 2.200 | 13x21 | 250 | 2.000 |
| 33 | 13x21 | 300 | 1.500 | 13x21 | 490 | 1.600 | 16x26 | 380 | 1.500 |
| 47 | 13x21 | 400 | 1.100 | 13x21 | 450 | 1.300 | 16x26 | 480 | 1.300 |
| 100 | 16x26 | 700 | 0.700 | 16x33 | 850 | 0.800 | 18x37 | 890 | 0.750 |
| 220 | 22x28 | 1450 | 0.400 | 22x38 | 1500 | 0.450 | | | |

| VDC uF | 400V | | | 450V | | |
|-----------|-------------|---------------------------------|----------------------------|-------------|---------------------------------|----------------------------|
| | DxL (mm) | Ripple Current (mA/rms,105) | Impedance(Ω) 25 ,100KHz | DxL (mm) | Ripple Current (mA/rms,105) | Impedance(Ω) 25 ,100KHz |
| 1 | 8x11 | 60 | 4.500 | 8x11 | 50 | 9.000 |
| 2.2 | 10x12 | 100 | 3.800 | 10x12 | 70 | 7.100 |
| 3.3 | 10x15 | 110 | 3.200 | 10x15 | 90 | 4.700 |
| 4.7 | 10x15 | 110 | 3.200 | 10x20 | 110 | 4.000 |
| 10 | 10x20 | 110 | 3.200 | 13x21 | 190 | 3.300 |
| 22 | 13x26 | 250 | 2.000 | 16x26 | 410 | 2.000 |
| 33 | 16x26 | 310 | 1.500 | 16x26 | 510 | 1.500 |
| 47 | 16x33 | 460 | 1.200 | 18x32 | 610 | 1.300 |
| 100 | 18x40 | 810 | 0.750 | | | |