

Kingtronics®

GKT-AT

Aluminum Electrolytic Capacitor – Axial

FEATURES

- ◆ 105°C, 1000 hours assured.
- ◆ Voltage range of 6.3 ~ 450V.
- ◆ Wide operating temperature range, from -40°C ~ +105°C

SPECIFICATIONS

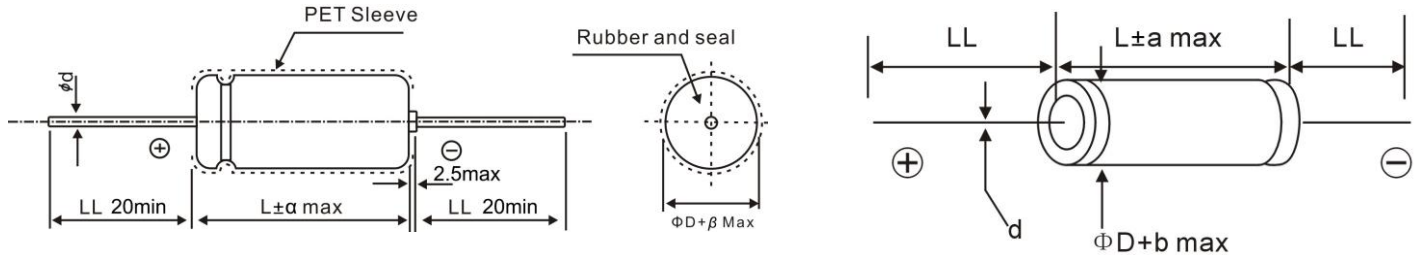


| | | | | | | | | | | | | | | | | |
|--|--|-----------|------|------|-------------|------|------|---|------|------|------|------|------|--------|-----------------------------------|----|
| OPERATING TEMPERATURE RANGE | -40°C~ 105°C | | | | | | | | | | | | | | | |
| CAPACITANCE TOLERANCE | ± 10%(K), ± 20%(M) (at 20°C, 120Hz) | | | | | | | | | | | | | | | |
| VOLTAGE RANGE | 6.3 ~ 100VDC | | | | | | | 160 ~ 450VDC | | | | | | | | |
| LEAKAGE CURRENT ((20°C) | I ≤ 0.02CV or 3 (uA) Whichever is greater (after 2 minutes applying the rated DC working Voltage at 20 °C) | | | | | | | I ≤ 0.03CV+15 (uA) for CV ≤ 1000, I ≤ 0.02CV+25 (uA) for CV > 1000 (after 5 minutes applying the rated DC working Voltage at 20 °C) | | | | | | | | |
| | Where: I=Leakage Current (uA) , C=rated Capacitance (µF) , V= working Voltage (V) | | | | | | | | | | | | | | | |
| (at 20°C, 120Hz) DISSIPATION FACTOR (tan δ) | Add 0.02 per 1000µF for more than 1000µF | | | | | | | | | | | | | | | |
| | W.V | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 350 | 400 | 450 | |
| | tan δ | 0.23 | 0.20 | 0.17 | 0.15 | 0.12 | 0.10 | 0.09 | 0.08 | 0.15 | 0.15 | 0.20 | 0.20 | 0.24 | 0.24 | |
| (20°C) SURGE VOLTAGE | W.V | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 350 | 400 | 450 | |
| | S.V | 8 | 13 | 20 | 32 | 44 | 63 | 79 | 125 | 200 | 250 | 300 | 400 | 450 | 500 | |
| LOW TEMPERATURE STABILITY | Impedance ratio at 120HZ | | | | | | | | | | | | | | | |
| | Rated Voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 350 | 400 | 450 | |
| | Z(-25°C) / +20°C | φ D<16 | 6 | 4 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 6 | 8 | 12 | 14 | 16 |
| | | φ D≥16 | 8 | 6 | 4 | 4 | 3 | 3 | 3 | 3 | | | | | | |
| | Z(-40°C) / +20°C | φ D<16 | 10 | 8 | 6 | 6 | 4 | 3 | 3 | 3 | 4 | 8 | 10 | - | - | - |
| | | φ D≥16 | 18 | 16 | 12 | 10 | 8 | 8 | 6 | 6 | | | | | | |
| LOAD LIFE TEST | After 1,000 hours application of rated voltage at 105°C, capacitors meet the characteristics requirements listed as below . | | | | | | | | | | | | | | | |
| | Capacitance Change | | | | | | | | | | | | | | Within ±20% of initial value | |
| | Dissipation Factor | | | | | | | | | | | | | | Less than 200% of specified value | |
| | Leakage Current | | | | | | | | | | | | | | Within specified value | |
| SHELF LIFE TEST | After leaving capacitors under no load at 105°C for 1,000 hours and applying Voltage they meet the specified value for load life characteristics listed above. | | | | | | | | | | | | | | | |
| FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT | Freq.(Hz) | 60 | | | 120 | | | 500 | | | 1K | | | 10K up | | |
| | Cap.(µF) | Under 100 | | | 100 to 1000 | | | 1000 up above | | | | | | | | |
| | | 0.70 | | | 0.75 | | | 0.80 | | | | | | | | |
| ALLOWABLE RIPPLE CURRENT VS AMBIENT TEMPERATURE | Temperature(°C) | Under 50 | | | 70 | | | 85 | | | 105 | | | | | |
| | Multiplier | 1.95 | | | 1.78 | | | 1.40 | | | 1.00 | | | | | |

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DIMENSIONS (mm)



LEAD DIAMETER

| φ D | 6.3 | 8 | 10 | 13 | 16 | 18 | 22 | 25 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| φ d | 0.6 | 0.6 | 0.6 | 0.6 | 0.8 | 0.8 | 0.8 | 0.8 |
| α | 1.5 | 1.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| β | 0.5 | 0.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |

DIMENSIONS: Diameter (DØ) x Length (L) mm

RIPPLE CURRENT. mA at 85°C, 120Hz

| V.DC | 6.3V | | 10V | | 16V | | 25V | | 35V | |
|------|--------|------|--------|------|--------|------|--------|------|--------|------|
| | ØDxL | mA | ØDxL | mA | ØDxL | mA | ØDxL | mA | ØDxL | mA |
| 10 | -- | -- | -- | -- | -- | -- | 6.3x13 | 39 | 6.3x13 | 44 |
| 22 | -- | -- | -- | -- | 6.3x13 | 60 | 6.3x13 | 63 | 6.3x13 | 65 |
| 33 | -- | -- | -- | -- | 6.3x13 | 73 | 6.3x13 | 75 | 6.3x13 | 96 |
| 47 | -- | -- | 6.3x13 | 78 | 6.3x13 | 85 | 6.3x13 | 90 | 6.3x13 | 114 |
| 100 | 6.3x13 | 102 | 6.3x13 | 110 | 6.3x13 | 145 | 8x13 | 166 | 8x16 | 180 |
| 220 | 6.3x13 | 167 | 8x13 | 180 | 8x13 | 231 | 8x16 | 246 | 10x17 | 305 |
| 330 | 8x16 | 236 | 8x16 | 253 | 8x16 | 323 | 10x17 | 345 | 10x21 | 391 |
| 470 | 8x16 | 281 | 8x16 | 302 | 10x17 | 359 | 10x21 | 432 | 10x21 | 490 |
| 1000 | 10x17 | 453 | 10x17 | 486 | 10x21 | 569 | 13x22 | 662 | 13x27 | 721 |
| 2200 | 13x22 | 740 | 13x22 | 793 | 13x27 | 926 | 16x28 | 1024 | 16x33 | 1177 |
| 3300 | 13x27 | 906 | 13x27 | 1015 | 16x28 | 1173 | 16x33 | 1300 | 18x40 | 1449 |
| 4700 | 13x27 | 1168 | 16x28 | 1252 | 16x33 | 1443 | 18x40 | 1638 | 22x40 | 1878 |

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RIPPLE CURRENT. mA at 85°C, 120Hz

| V.DC | 50V | | 63V | | 100V | | 160V | | 200V | |
|------|--------|------|--------|------|--------|------|--------|-----|--------|-----|
| μF | ØDxL | mA | ØDxL | mA | ØDxL | mA | ØDxL | mA | ØDxL | mA |
| 1 | 6.3x13 | 10 | 6.3x13 | 17 | 6.3x13 | 17 | 6.3x13 | 7 | 6.3x13 | 9 |
| 2.2 | 6.3x13 | 20 | 6.3x13 | 32 | 6.3x13 | 32 | 6.3x13 | 15 | 8x13 | 16 |
| 3.3 | 6.3x13 | 30 | 6.3x13 | 34 | 6.3x13 | 34 | 8x16 | 21 | 8x16 | 26 |
| 4.7 | 6.3x13 | 34 | 6.3x13 | 37 | 6.3x13 | 37 | 8x16 | 31 | 10x17 | 33 |
| 10 | 6.3x13 | 50 | 6.3x13 | 55 | 6.3x13 | 64 | 10x17 | 60 | 10x21 | 66 |
| 22 | 6.3x13 | 75 | 6.3x13 | 90 | 8x16 | 106 | 10x21 | 121 | 13x22 | 121 |
| 33 | 6.3x13 | 105 | 8x13 | 123 | 10x17 | 150 | 13x22 | 154 | 13x27 | 167 |
| 47 | 8x13 | 140 | 8x16 | 162 | 10x21 | 180 | 13x27 | 198 | 16x33 | 214 |
| 100 | 10x17 | 225 | 10x17 | 248 | 13x22 | 287 | 16x33 | 345 | 16x33 | 368 |
| 220 | 10x21 | 349 | 13x22 | 420 | 16x28 | 458 | 18x40 | 586 | 22x40 | 609 |
| 330 | 13x22 | 450 | 13x27 | 495 | 16x33 | 582 | 22x40 | 632 | -- | -- |
| 470 | 13x22 | 561 | 13x27 | 632 | 16x36 | 713 | -- | -- | -- | -- |
| 1000 | 16x33 | 875 | 16x40 | 984 | 22x40 | 1148 | -- | -- | -- | -- |
| 2200 | 18x40 | 1408 | 22x40 | 1540 | 25x43 | 2310 | -- | -- | -- | -- |
| 3300 | 22x40 | 1724 | 25x43 | 1950 | -- | -- | -- | -- | -- | -- |
| 4700 | 25x41 | 1950 | 25x43 | 2290 | -- | -- | -- | -- | -- | -- |

| V.DC | 250V | | 350V | | 400V | | 450V | |
|------|--------|-----|-------|-----|-------|-----|-------|-----|
| μF | ØDxL | mA | ØDxL | mA | ØDxL | mA | ØDxL | mA |
| 1 | 6.3x13 | 12 | 8x16 | 13 | 8x16 | 15 | 8x16 | 15 |
| 2.2 | 8x16 | 17 | 10x17 | 19 | 10x17 | 23 | 10x21 | 23 |
| 3.3 | 10x17 | 31 | 10x17 | 33 | 10x17 | 36 | 10x21 | 36 |
| 4.7 | 10x17 | 38 | 10x21 | 44 | 10x21 | 46 | 13x22 | 46 |
| 10 | 10x21 | 72 | 13x22 | 72 | 13x22 | 79 | 13x27 | 82 |
| 22 | 13x27 | 126 | 13x27 | 132 | 16x33 | 143 | 16x36 | 154 |
| 33 | 16x28 | 178 | 16x33 | 186 | 16x40 | 201 | 16x40 | 201 |
| 47 | 16x33 | 241 | 16x40 | 253 | 16x40 | 253 | 18x40 | 304 |
| 100 | 16x40 | 391 | 22x40 | 402 | 22x43 | 439 | 22x43 | 448 |
| 220 | 22x40 | 632 | -- | -- | -- | -- | -- | -- |

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Aluminum Electrolytic Capacitor – Axial

HOW TO ORDER

| GKT | AT | 0J | 0R1 | M | 00630130 | 000 | B | R |
|------------|------------|---------------|-------------|-----------------------|-----------------|-------------|----------|----------|
| Series | Sub Series | Rated Voltage | Capacitance | Capacitance Tolerance | Dimension | Lead Length | Packing | Pb |
| | | 1. | 2. | 3. | 4. | 5. | 6. | 7. |

NOTE:**1. Rated Voltage**

| Code | 0J | 1A | 1C | 1D | 1E | 1V | 1G | 1H | 1J | 1K |
|---------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Voltage | 6.3V | 10V | 16V | 20V | 25V | 35V | 40V | 50V | 63V | 80V |

| Code | 2A | 2B | 2C | 2K | 2D | 2E | 2F | 2U | 2V | 2G | 2X | 2W | 2H | 2Y |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Voltage | 100V | 120V | 160V | 180V | 200V | 250V | 315V | 330V | 350V | 400V | 420V | 450V | 500V | 550V |

2. Capacitance

| Code | 0R1 | R22 | R33 | R47 | 010 | 2R2 | 3R3 | 4R7 | 100 | 220 | 330 | 470 | 101 |
|------------------|-----|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Capacitance (μF) | 0.1 | 0.22 | 0.33 | 0.47 | 1 | 2.2 | 3.3 | 4.7 | 10 | 22 | 33 | 47 | 100 |

| Code | 221 | 271 | 331 | 391 | 471 | 561 | 681 | 102 | 222 | 332 | 472 | 103 | 223 |
|------------------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|-------|-------|
| Capacitance (μF) | 220 | 270 | 330 | 390 | 470 | 560 | 680 | 1000 | 2200 | 3300 | 4700 | 10000 | 22000 |

3. Capacitance Tolerance

| Code | K | M |
|-----------|------|------|
| Tolerance | ±10% | ±20% |

4. Dimension

| Code | 00630130 | 01300200 | 01600300 |
|----------------|----------|----------|----------|
| Dimension (mm) | 6.3x13 | 13x20 | 16x30 |

5. Lead Length

| Code | 000 |
|-------------|----------|
| Lead Length | Standard |

6. Packing

| Code | B | T |
|---------|------|-------------|
| Packing | Bulk | Tape & Reel |

7. Pb

| Code | L | R |
|------|--------|------|
| Pb | Leaded | RoHS |

Note: Specifications are subject to change without notice.

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