

# Kingtronics®

## GKT-GL

### Aluminum Electrolytic Capacitor – Radial

## FEATURES

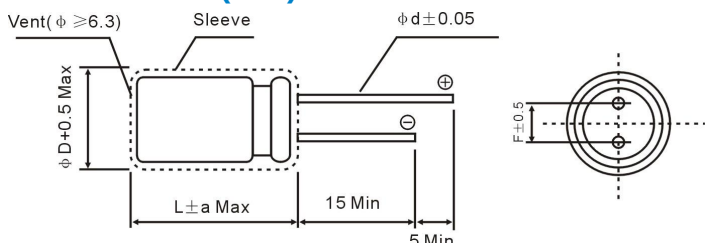
- ◆ At 55°C (Φ5~Φ6: 2000hours Φ8~Φ10: 3000hours) Ultra lower impedance
- ◆ Load life of 5000 hours at 105°C
- ◆ Low Impedance, Long Life
- ◆ High Frequency
- ◆ Switch power supply
- ◆ Excellent ripple current capability



## SPECIFICATIONS

|                                                   |                                                                                                                                                                                                                                          |      |                                             |      |      |      |      |      |      |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------------------------------------------|------|------|------|------|------|------|
| OPERATING TEMPERATURE RANGE (°C)                  | -55℃ ~ +105℃                                                                                                                                                                                                                             |      |                                             |      |      |      |      |      |      |
| Capacitance Range (μF)                            | 0.47 ~ 15000                                                                                                                                                                                                                             |      |                                             |      |      |      |      |      |      |
| Rated Voltage Range (V)                           | 6.3 ~ 100                                                                                                                                                                                                                                |      |                                             |      |      |      |      |      |      |
| CAPACITANCE TOLERANCE (25℃, 120Hz)                | ±20%                                                                                                                                                                                                                                     |      |                                             |      |      |      |      |      |      |
| LEAKAGE CURRENT (μA)                              | 1≤0.02CV or 3uA, whichever is greater (after 2 minutes at 25℃)<br>Where, C: Nominal Capacitance (μF)    V: Rated Voltage (V)                                                                                                             |      |                                             |      |      |      |      |      |      |
| DISSIPATION FACTOR (25℃, 120Hz)                   | Wv (V)                                                                                                                                                                                                                                   | 6.3  | 10                                          | 16   | 25   | 35   | 50   | 63   | 100  |
|                                                   | Tan δ                                                                                                                                                                                                                                    | 0.22 | 0.19                                        | 0.16 | 0.14 | 0.12 | 0.10 | 0.09 | 0.08 |
| 0.02 is added to each 1000μF increase over 1000μF |                                                                                                                                                                                                                                          |      |                                             |      |      |      |      |      |      |
| Temperature Stability (120Hz)                     | Rated Voltage                                                                                                                                                                                                                            | 6.3  | 10                                          | 16   | 25   | 35   | 50   | 63   | 100  |
|                                                   | Z-55℃/Z+20℃                                                                                                                                                                                                                              | 3    | 3                                           | 3    | 3    | 3    | 3    | 3    | 3    |
| LOAD LIFE (+105℃)                                 | Time                                                                                                                                                                                                                                     |      | 5000hous (Φ5~6: 2000hours Φ8~10: 3000hours) |      |      |      |      |      |      |
|                                                   | Leakage Current                                                                                                                                                                                                                          |      | Not more than the specified value.          |      |      |      |      |      |      |
|                                                   | Capacitance Change                                                                                                                                                                                                                       |      | Within±20% of the initial value             |      |      |      |      |      |      |
|                                                   | Dissipation Factor                                                                                                                                                                                                                       |      | Not more than 200% of the specified value.  |      |      |      |      |      |      |
| SHELF LIFE (+105℃)                                | After leaving capacitors under no load at 105℃ for 1000 hours, they meet the specified value for load life Characteristics listed above.<br>*after test: U <sub>R</sub> to be applied for 30 minutes, 24 to 48 hours before measurement. |      |                                             |      |      |      |      |      |      |

## DIMENSIONS (mm)



|    |       |     |     |     |    |     |    |
|----|-------|-----|-----|-----|----|-----|----|
|    | 5 Min |     |     |     |    |     |    |
| ΦD | 5     | 6.3 | 8   | 10  | 13 | 16  | 18 |
| F  | 2.0   | 2.5 | 3.5 | 5.0 |    | 7.5 |    |
| Φd | 0.5   |     | 0.6 |     |    | 0.8 |    |
| a  | 1.0   |     |     | 2.0 |    |     |    |

## MULTIPLIER FOR RIPPLE CURRENT

| Frequency Coefficient |      |      |      |      |
|-----------------------|------|------|------|------|
| Freq(Hz)<br>Cap(μF)   | 120  | 1K   | 10K  | 100K |
| 0.47~4.7              | 0.40 | 0.68 | 0.78 | 1.0  |
| 5.6~47                | 0.50 | 0.76 | 0.87 | 1.0  |
| 56~270                | 0.70 | 0.85 | 0.90 | 1.0  |
| 330~1000              | 0.80 | 0.93 | 0.98 | 1.0  |
| 1200~15000            | 0.90 | 0.95 | 1.0  | 1.0  |

| Dia   | Life Time |
|-------|-----------|
| 5~6.3 | 2000h     |
| 8~10  | 3000h     |
| ≥13   | 5000h     |

| Temperature Coefficient |      |      |      |
|-------------------------|------|------|------|
| Temperature(°C)         | +70  | +85  | +105 |
| Factor                  | 1.96 | 1.68 | 1.0  |

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**Kingtronics®****GKT-GL****Aluminum Electrolytic Capacitor – Radial****STANDARD RATINGS**

| $\mu\text{F}$ \ V | 6.3V  | 10V    | 16V   | 25V    | 35V    | 50V            | 63V   | 100V  |
|-------------------|-------|--------|-------|--------|--------|----------------|-------|-------|
| 1                 | --    | --     | --    | --     | --     | 5x11           | --    |       |
| 2.2               | --    | --     | --    | --     | --     | 5x11           | --    |       |
| 3.3               | --    | --     | --    | --     | --     | 5x11           | --    |       |
| 4.7               | --    | --     | --    | --     | 5x11   | 5x11           | --    |       |
| 6.8               | --    | --     | --    | --     | 5x11   | 5x11           | --    |       |
| 10                | --    | --     | --    | --     | 5x11   | 5x12           | 5x12  | 6x11  |
| 15                | --    | --     | --    | --     | 5x11   | 5x12           | --    |       |
| 18                | --    | --     | --    | --     | 5x11   | 5x12           | --    |       |
| 22                | --    | --     | --    | 5x11   | 5x11   | 6x11           | 6x11  | 8x12  |
| 27                | --    | --     | --    | --     | 5x11   | 6x11           | --    |       |
| 33                | --    | --     | --    | --     | 6x11   | 6x11           | 6x11  | 10x13 |
| 39                | --    | --     | --    | --     | 6x11   | 6x11           | --    |       |
| 47                | --    | --     | 5x11  | 5x11   | 6x11   | 6x12           | 8x12  | 10x17 |
| 56                | --    | --     | 5x11  | 5x11   | 6x11   | 6x12           | --    |       |
| 68                | --    | --     | 5x12  | 5x12   | 6x11   | 8x12           | 10x13 | 10x21 |
| 82                | --    | --     | --    | 6.3x11 | 6.3x11 | 8x12           | --    |       |
| 100               | --    | 5x11   | 6x11  | 6x11   | 8x12   | 8x12           | 10x17 | 13x20 |
| 120               | --    | 5x11   | 6x11  | 6.3x11 | 8x12   | 8x20           | --    |       |
| 150               | 5x11  | 5x11   | 6x11  | 8x12   | 8x12   | 8x20           | --    |       |
| 180               | 5x11  | 6.3x11 | 6x11  | 8x12   | 8x14   | 8x20           | --    |       |
| 220               | 6x11  | 6x11   | 6x11  | 8x12   | 10x15  | 10x17          | 10x21 | 16x26 |
| 270               | 6x11  | 6.3x11 | 8x12  | 8x14   | 10x15  | 10x21          | --    |       |
| 330               | 6x11  | 8x12   | 8x12  | 8x14   | 10x17  | 10x21          | 13x20 | 16x26 |
| 390               | 6x12  | 8x12   | --    | 8x20   | 10x17  | 13x20          | --    |       |
| 470               | 8x12  | 8x12   | 8x12  | 10x17  | 10x17  | 13x20<br>13x21 | 13x20 | 16x31 |
| 560               | 8x12  | 8x12   | 8x16  | 8x20   | 10x25  | 13x21          | --    |       |
| 680               | 8x12  | 8x12   | 8x16  | 10x17  | 13x20  | 13x30          | 16x26 |       |
| 820               | 8x14  | 8x16   | 8x20  | 10x25  | 13x20  | 13x35          | --    |       |
| 1000              | 8x16  | 8x16   | 10x17 | 13x20  | 13x25  | 16x25          | 16x26 |       |
| 1200              | 8x16  | 10x17  | 10x21 | 13x20  | 16x25  | 13x30          | 16x30 |       |
| 1500              | 8x16  | 10x21  | 13x20 | 13x20  | 13x35  | 16x26          | --    |       |
| 1800              | 10x15 | 10x25  | 13x20 | 13x26  | 16x26  | 16x32          | --    |       |
| 2200              | 10x20 | 13x20  | 13x20 | 13x26  | 16x26  | 16x35          | 18x40 |       |
| 2700              | 10x21 | 13x21  | 16x26 | 13x26  | 16x35  | 18x40          | --    |       |
| 3300              | 13x20 | 13x20  | 13x30 | 16x26  | 16x35  | 18x40          | --    |       |
| 3900              | 13x25 | --     | 16x26 | 16x26  | 18x40  | --             | --    |       |
| 4700              | 13x25 | 13x26  | 16x26 | 16x26  | --     | --             | --    |       |
| 5600              | 16x26 | 16x30  | 16x35 | --     | --     | --             | --    |       |
| 6800              | 16x26 | 16x30  | 18x25 | --     | --     | --             | --    |       |
| 8200              | 16x32 | 16x35  | --    | --     | --     | --             | --    |       |
| 10000             | 16x35 | --     | --    | --     | --     | --             | --    |       |

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#### TYPICAL CURVES

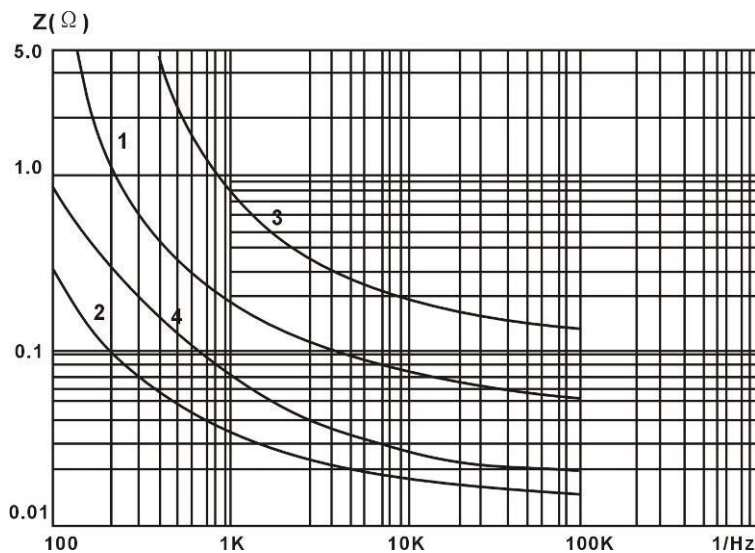
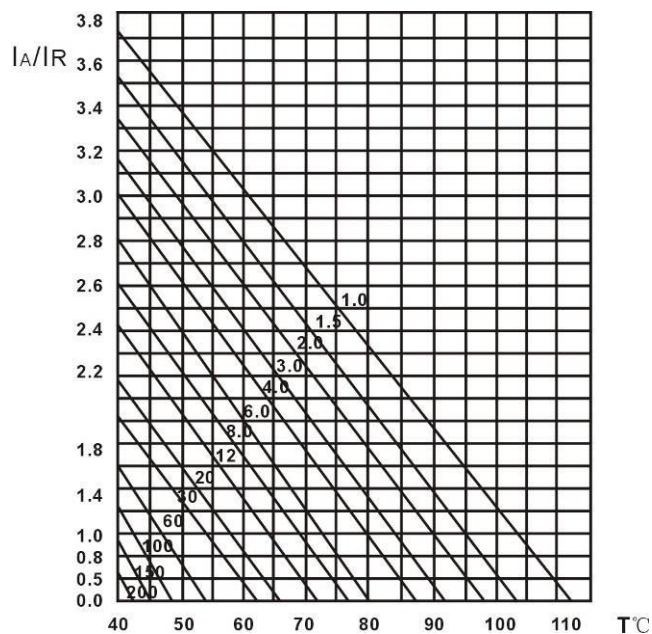


Fig.3 Typical impedance as a function of frequency

|    |            |         |
|----|------------|---------|
| 1. | 10V1000μF  | 10x20   |
| 2. | 10V10000μF | 18x35.5 |
| 3. | 63V100μF   | 10x20   |
| 4. | 63V1000μF  | 18x35.5 |

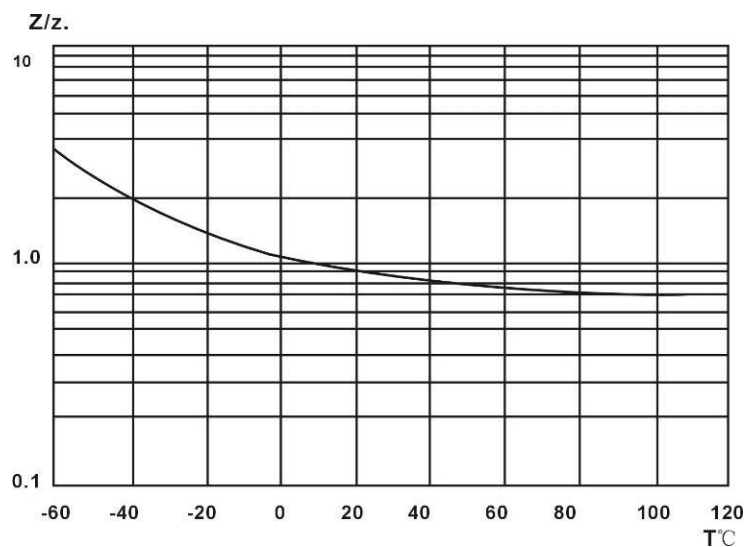
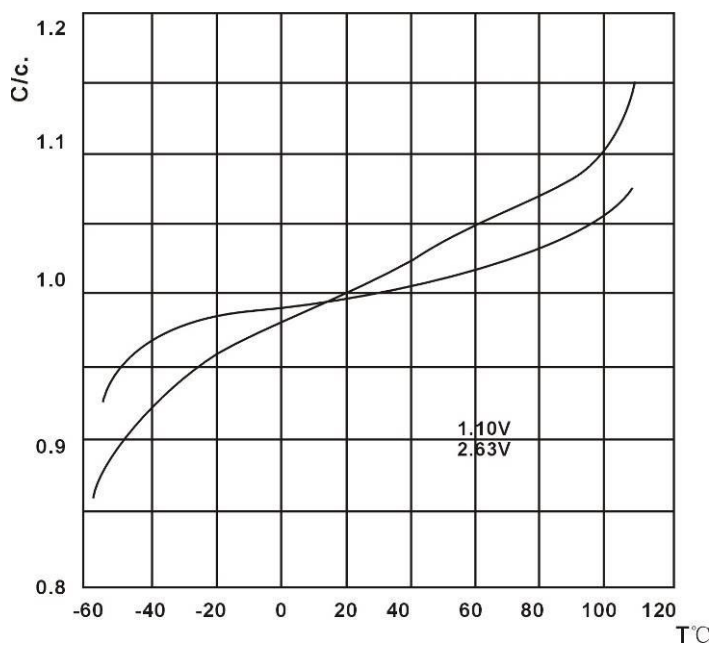


Fig. 2 Typical multiplier of impedance as a function of ambient temperature

$Z_0$  –typical impedance to 25°C, 100KHz

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**Kingtronics®****GKT-GL****Aluminum Electrolytic Capacitor – Radial****HOW TO ORDER**

| <u>GKT</u> | <u>GL</u>  | <u>0J</u>     | <u>0R1</u>  | <u>M</u>              | <u>00500110</u> | <u>020</u> | <u>000</u>  | <u>B</u> | <u>R</u> |
|------------|------------|---------------|-------------|-----------------------|-----------------|------------|-------------|----------|----------|
| Series     | Sub Series | Rated Voltage | Capacitance | Capacitance Tolerance | Dimension       | Pitch/Pins | Lead Length | Packing  | Pb       |
|            |            | 1.            | 2.          | 3.                    | 4.              | 5.         | 6.          | 7.       | 8.       |

**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    | L    | M    | P       | Q       | R      | T       | U       | V       | H      | F     |
|-----------|------|------|------|---------|---------|--------|---------|---------|---------|--------|-------|
| Tolerance | ±10% | ±15% | ±20% | +100-0% | +30-10% | +20-0% | +50-10% | +75-10% | +20-10% | +20-5% | +30-0 |

**4. Dimension**

| Code           | 00500110 | 00630120 | 01300200 | 01600300 | 03500450 |
|----------------|----------|----------|----------|----------|----------|
| Dimension (mm) | 5x11     | 6.3x12   | 13x20    | 16x30    | 35x45    |

**5. Pitch/Pins**

| Code             | 020 | 025 | 035 | 050 | 075 | 100  | 127  | 4pins |
|------------------|-----|-----|-----|-----|-----|------|------|-------|
| Pitch (mm)/ Pins | 2.0 | 2.5 | 3.5 | 5.0 | 7.5 | 10.0 | 12.7 | 4PS   |

**6. Lead Length**

| Code        | 000      | 040 | 045 | 050 |
|-------------|----------|-----|-----|-----|
| Lead Length | Standard | 4.0 | 4.5 | 5.0 |

**7. Packing**

| Code    | A    | B    |
|---------|------|------|
| Packing | Ammo | Bulk |

**8. Pb**

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

Note: Specifications are subject to change without notice.

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