# Low Leakage Current Aluminum Electrolytic Capacitor

## SPKE04 Series


- Extremely low and stable leakage current characteristics.
- Close capacitance tolerance ±20% (±10% on requested)
- For the special designing requirement,please contact us.

## ■ Specifications

| Item | Performance Characteristics |
|---|---|
| Operating Temperature Range | -40 to +105℃ |
| Rated Voltage Range | 6.3 to 63VDC |
| Capacitance Range | 0.1 to 2200uF |
| Capacitance Tolerance | ±20%(120Hz,+20℃) |
| Leakage Current (±20℃,max) | I≤0.002 CV or 0.4(uF)<br>After 2 minutes,whichever is greater measured with rated working voltage applied. |
| Dissipation Factor(tan δ ) | (+20℃,at 120Hz) |

| Working Voltage(VDC) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 |
|---|---|---|---|---|---|---|---|
| D.F.(%)max | 20 | 17 | 13 | 10 | 8 | 8 | 8 |

| Low Temperature Characteristics (120Hz) | impedance radio max. |
|---|---|

| Working Voltage(VDC) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 |
|---|---|---|---|---|---|---|---|
| Z-40℃/Z+20℃ | 4 | 3 | 3 | 2 | 2 | 2 | 2 |

| | |
|---|---|
| Load Life | Test conditions<br>Duration time : 2000 Hrs<br>Ambient temperature : +105℃<br>Applied voltage : Rated DC working voltage<br>After test requirements at +20℃<br>Capacitance change : ≤±20% of the initial measured valu<br>Dissipation factor : ≤200% of the initial specified value<br>Leakage current : ≤The initial specified value |
| Shelf Life | Test conditions<br>Duration time : 1000Hrs<br>Ambient temperature : +105℃<br>Applied voltage : None<br>After test requirements at +20℃ : Same limits as Load life<br>Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes |

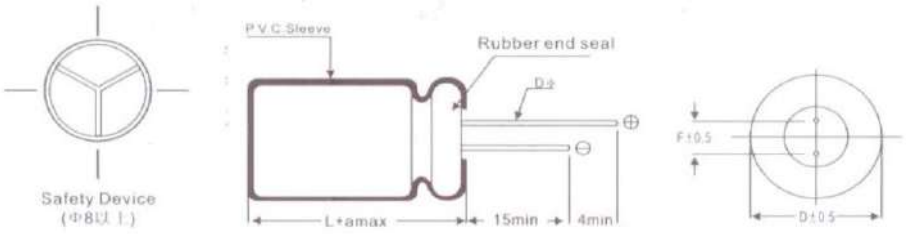
## ■ Multiplier for Ripple Current vs.Frequency

| CAP(uF) \ Frequency(Hz) | 50(60) | 120 | 400 | 1K | 10K | 50K~100K |
|---|---|---|---|---|---|---|
| CAP≤10 | 0.8 | 1 | 1.30 | 1.45 | 1.65 | 1.70 |
| 10<CAP≤100 | 0.8 | 1 | 1.23 | 1.36 | 1.48 | 1.53 |
| 100<CAP≤1000 | 0.8 | 1 | 1.16 | 1.25 | 1.35 | 1.38 |

## ■ Multiplier for Ripple Current vs.Temperature

| Temperature(℃) | 45 | 60 | 70 | 85 | 95 | 105 |
|---|---|---|---|---|---|---|
| Multiplier | 1.5 | 1.3 | 1.45 | 1.3 | 1.15 | 1 |

## ■ Diagram of Dimensions:(unit:mm)




| Dø | 5 | 6.3 | 8 | 10 | 13 |
|---|---|---|---|---|---|
| F | 2.0 | 2.5 | 3.5 | 5.0 | 5.0 |
| dø | 0.5 | | | 0.6 | |
| a | 1.0 | | | 1.5 | |

# Low Leakage Current Aluminum Electrolytic Capacitor

■ **Case Size** ΦDXL(mm)

| WV(SV) / uF | 6.3(8) | | 10(13) | | 16(20) | | 25(32) | | 35(44) | | 50(63) | | 63(79) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple |
| 0.1 | | | | | | | | | | | 5×11 | 8.8 | 5×11 | 8.8 |
| 0.22 | | | | | | | | | | | 5×11 | 8.8 | 5×11 | 8.8 |
| 0.33 | | | | | | | | | | | 5×11 | 8.8 | 5×11 | 8.8 |
| 0.47 | | | | | | | | | | | 5×11 | 12 | 5×11 | 12 |
| 1 | | | | | | | | | | | 5×11 | 17 | 5×11 | 17 |
| 2.2 | | | | | | | | | | | 5×11 | 24 | 5×11 | 24 |
| 3.3 | | | | | | | | | | | 5×11 | 29 | 5×11 | 32 |
| 4.7 | | | | | | | 5×11 | 32 | 5×11 | 33 | 5×11 | 36 | 5×11 | 39 |
| 10 | | | | | 5×11 | 39 | 5×11 | 43 | 5×11 | 48 | 5×11 | 52 | 6.3×11 | 58 |
| 22 | 5×11 | 36 | 5×11 | 50 | 5×11 | 62 | 5×11 | 65 | 6.3×11 | 71 | 6.3×11 | 77 | 6.3×11 | 94 |
| 33 | 5×11 | 44 | 5×11 | 66 | 5×11 | 68 | 5×11 | 76 | 6.3×11 | 83 | 6.3×11 | 99 | 8×11 | 110 |
| 47 | 5×11 | 53 | 5×11 | 75 | 5×11 | 105 | 6.3×11 | 116 | 6.3×11 | 125 | 8×11 | 138 | 8×12 | 152 |
| 100 | 5×11 | 74 | 5×11 | 104 | 6.3×11 | 138 | 8×11 | 149 | 8×11 | 187 | 10×13 | 217 | 10×16 | 260 |
| 220 | 6.3×11 | 131 | 8×11 | 193 | 8×11 | 220 | 10×13 | 246 | 10×13 | 330 | 10×20 | 380 | 13×20 | 440 |
| 330 | 6.3×11 | 161 | 8×11 | 256 | 8×12 | 268 | 10×13 | 352 | 10×16 | 440 | 13×20 | 506 | 13×25 | 594 |
| 470 | 8×11.5 | 242 | 8×12 | 319 | 10×13 | 407 | 10×16 | 484 | 13×20 | 590 | 13×25 | 705 | | |
| 1000 | 10×13 | 390 | 10×16 | 605 | 10×20 | 704 | 13×20 | 847 | 13×25 | 1012 | | | | |
| 2200 | 13×20 | 665 | 13×20 | 860 | 13×25 | 890 | | | | | | | | |

**Ripple Current (mA,rms) at 105℃ 120KHz**