

SPA Series (High Reliability, Ultra small, Ultra-low ESR)

- High ripple current capability.
- High Endurance : 5,000 hours at 105°C
- High temperature resistance (-55°C to +105°C)
- RoHS Compliance (2011/65/EU)



SPECIFICATIONS

Table-1

| Items | Test Conditions | Characteristics | |
|--|--|--|---------------------------------------|
| Category temperature range | - | -55°C to +105°C | |
| Capacitance Tolerance | At 20°C, 120Hz | M:±20% | |
| Dissipation Factor (tan δ) | At 20°C, 120Hz | ≤ The value of table-3 | |
| Leakage Current | At 20°C After 2 minites | $\leq I = 0.2CV$ (I= MAX Leakage Current, C=Capacitance, V=Rated Voltage) | |
| ESR | At 100K Hz, 20°C | ≤ The value of table-3 | |
| Characteristics of impedance ratio at high temp. and low temp. | At 100KHz | $Z(-55^\circ C) / Z(+20^\circ C) \leq 1.25$ | |
| Endurance (High Temp Load Test) | When the capacitors are restored to 20°C after the rated voltage applied for 5,000 hours at 105°C | ΔC/C | Within ±20 % of the initial value |
| | | D.F. (Tan-δ) | ≤150 % of the initial specified value |
| | | ESR | ≤150 % of the initial specified value |
| | | Leakage Current | Within the initial specified value |
| Humidity Bias Test (High Temp Non-Load Test) | When the capacitors are restored to 20°C after subjecting them to DC voltage at 60°C, 90% ~ 95% RH for 1,000 hours | ΔC/C | Within ±20 % of the initial value |
| | | D.F. (Tan-δ) | ≤150 % of the initial specified value |
| | | ESR | ≤150 % of the initial specified value |
| | | Leakage Current | Within the initial specified value |
| Resistance to Soldering Heat | After soldering the capacitor under the soldering conditions prescribed here as preheat at 150 to 200°C for 60 to 180 seconds and peak temperature at 265°C for 10 seconds or less, the capacitor shall meet the specifications listed at right, provided that its temperature profile is measured at both of terminal ends facing the soldering side. | ΔC/C | Within ±20 % of the initial value |
| | | D.F. (Tan-δ) | ≤130 % of the initial specified value |
| | | ESR | ≤150 % of the initial specified value |
| | | Leakage Current | Within the initial specified value |

Dimensions

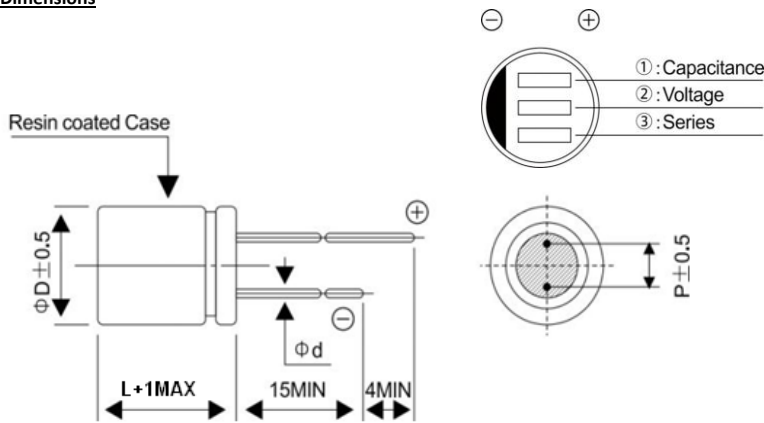


Table-2

Unit:(mm)

| Size code | D±0.5 | F±0.5 | d±0.05 |
|-----------|-------|-------|--------|
| 8L | 5.0 | 2.0 | 0.50 |
| 8L | 6.3 | 2.5 | 0.60 |
| 9L | 6.3 | 2.5 | 0.60 |
| 12L | 6.3 | 2.5 | 0.60 |
| 8L | 8.0 | 3.5 | 0.60 |
| 11L | 8.0 | 3.5 | 0.60 |
| 12.5L | 10.0 | 5.0 | 0.60 |

Φ5mm d=0.50mm
 6.3mm/8mm: d=0.60mm
 Φ10mm d=0.60mm

Table-3 SPA Serie Characteristics List

| Size Code | Rated Voutage (V) | Rated Capacitance (μF) | ESR 100KHz /20°C (mΩ max) | Rated ripple current 100KHz/105°C(mA.rms) | Dissipation Factor (max)/120Hz | Leakage current (μA) (max)/2min |
|-----------|-------------------|------------------------|---------------------------|---|--------------------------------|---------------------------------|
| 5x9 | 25 | 10 | 12.0 | 1,600 | 0.10 | 50 |
| 6.3x8 | | 22 | 12.0 | 1,800 | 0.10 | 110 |
| 6.3x8 | | 33 | 12.0 | 2,000 | 0.10 | 165 |
| 6.3x8 | | 47 | 12.0 | 2,200 | 0.10 | 235 |
| 6.3x8 | | 68 | 12.0 | 2,400 | 0.10 | 340 |
| 6.3x8 | | 82 | 12.0 | 2,000 | 0.10 | 410 |
| 6.3x8 | | 100 | 12.0 | 2,200 | 0.10 | 500 |
| 8x8 | | 100 | 12.0 | 2,600 | 0.10 | 500 |
| 8x11 | | 220 | 12.0 | 4,000 | 0.09 | 1100 |
| 10x12.5 | | 470 | 12.0 | 6,500 | 0.09 | 2350 |
| 10x12.5 | | 680 | 11.0 | 9,200 | 0.09 | 3400 |