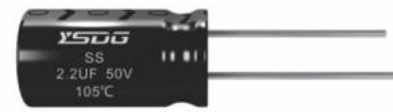


SS Series

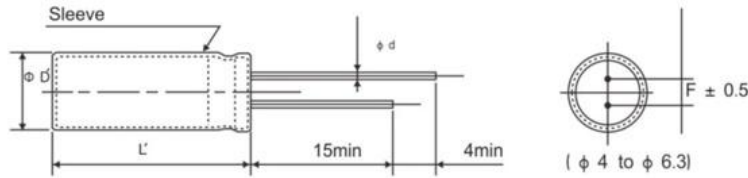


- Low profile with 5mm height
- Wide temperature range of -40 °C +105 °C
- Endurance:+105 °C 1,000hours
- RoHS Compliant

● SPECIFICATIONS

| Items | Characteristics | | | | | | | |
|---|--|---------------------------------------|------|------|------|------|------|--|
| Category Temperature Range | -40 to +105 °C | | | | | | | |
| Rated Voltage Range | 6.3 to 50vdc | | | | | | | |
| Capacitance Tolerance | ± 20%(M) (at20 °C ,120Hz) | | | | | | | |
| Leakage Current | I ≤ 0.01CV or 3uA whichever is greater Where, I:Max.leakage current(μA),C:Nominal capacitance (UF) V:Rated voltage(V) (at 20 °C after2minutes) | | | | | | | |
| Dissipation Factor (tanδ) | Rated voltage(Vdc) | 6.3 | 10 | 16 | 25 | 35 | 50 | |
| | Tanδ (Max) | 0.28 | 0.24 | 0.20 | 0.14 | 0.12 | 0.10 | |
| Low Temperature Characteristics (Max.Impedance Ratio) | Rated voltage(Vdc) | 6.3 | 10 | 16 | 25 | 35 | 50 | |
| | Z(-25 °C)/Z(+20 °C) | 3 | | | 2 | | | |
| | Z(-40 °C)/Z(+20 °C) | 8 | 5 | 4 | 3 | | | |
| Endurance | The following specifications shall be satisfied when the capacitors are restored to 20 °C after the rated voltage is applied for 1,000 hours at 105 °C | | | | | | | |
| | Capacitance change | ≤ ± 20% of the initial value | | | | | | |
| | DF (tanδ) | ≤ 200% of the initial specified value | | | | | | |
| | Leakage current | ≤ The initial specified value | | | | | | |
| Shelf Life | The following specifications shall be satisfied when the capacitors are restored to 20 °C after exposing them for 500 hours at 105 °C without voltage applied. | | | | | | | |
| | Capacitance change | ≤ ± 20% of the initial value | | | | | | |
| | DF (tanδ) | ≤ 200% of the specified value | | | | | | |
| | Leakage current | ≤ 200% the initial specified value | | | | | | |

● DIMENSIONS[MM]



| Φ D | 4 | 5 | 6.3 |
|------|------------|------|------|
| Φ d | 0.45 | 0.45 | 0.45 |
| F | 1.5 | 2.0 | 2.5 |
| Φ D' | Φ D+0.5max | | |
| L' | L+1.5max | | |

● RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current

| WV(Vdc) | Freq.(Hz) | | | |
|-----------|-----------|------|------|----------|
| | 50/60 | 120 | 1k | 10k-100k |
| 6.3 to 16 | 0.80 | 1.00 | 1.30 | 1.50 |
| 25 to 35 | 0.80 | 1.00 | 1.20 | 1.20 |
| 50 | 0.80 | 1.00 | 1.15 | 1.20 |

The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5 °C rise,When long life performance is required in actual use,the rms ripple current has to be reduced

SS Series

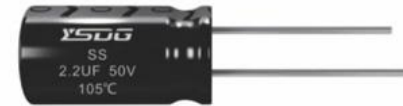
● STANDARD RATINGS

| WV(Vdc) | Cap(μ F) | Case size φ DxL(mm) | Tanδ | Ripple current (mArms/105 °C ,120Hz) |
|---------|-----------|------------------------|------|---|
| 6.3(DJ) | 22 | 4 × 5 | 0.28 | 23 |
| | 33 | 5 × 5 | 0.28 | 30 |
| | 47 | 5 × 5 | 0.28 | 37 |
| | 100 | 6.3 × 5 | 0.28 | 57 |
| 10(1A) | 10 | 4 × 5 | 0.24 | 20 |
| | 22 | 5 × 5 | 0.24 | 28 |
| | 33 | 5 × 5 | 0.24 | 34 |
| | 47 | 6.3 × 5 | 0.24 | 52 |
| | 4.7 | 4 × 5 | 0.20 | 15 |
| | 10 | 4 × 5 | 0.20 | 23 |

| WV(Vdc) | Cap(μ F) | Case size φ DxL(mm) | Tanδ | Ripple current (mArms/105 °C ,120Hz) |
|---------|-----------|------------------------|------|---|
| 25(1E) | 22 | 6.3 × 5 | 0.14 | 44 |
| | 33 | 6.3 × 5 | 0.14 | 48 |
| 35(1V) | 3.3 | 4 × 5 | 0.12 | 13 |
| | 4.7 | 4 × 5 | 0.12 | 17 |
| | 10 | 5 × 5 | 0.12 | 24 |
| | 22 | 6.3 × 5 | 0.12 | 48 |
| | 0.1 | 4 × 5 | 0.10 | 1 |
| | 0.22 | 4 × 5 | 0.10 | 2 |
| | 0.33 | 4 × 5 | 0.10 | 3 |
| | 0.47 | 4 × 5 | 0.10 | 4 |

SS Series

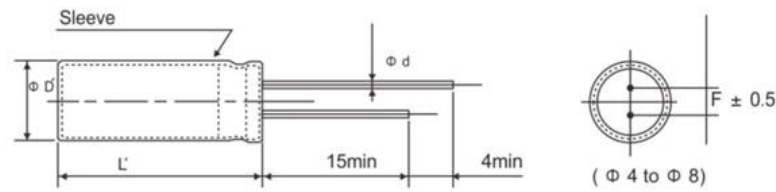
- Low profile with 7mm height
- Endurance: +105 °C 2,000hours
- Wide temperature range of -40 °C +105 °C
- RoHS Compliant



● SPECIFICATIONS

| Items | Characteristics | | | | | | | | |
|---|--|---------------------------------------|------|------|------|------|------|------|------------------|
| Category Temperature Range | -40to+105 °C | | | | | | | | |
| Rated Voltage Range | 6.3to 63vdc | | | | | | | | |
| Capacitance Tolerance | ± 20%(M) (at20 °C ,120Hz) | | | | | | | | |
| Leakage Current | I ≤ 0.01CV or 3uA whichever is greater (at 20 °C after 2minutes) Where, I:Max.leakage current(uA),C:Nominal capacitance (UF) V:Rated voltage(V) | | | | | | | | |
| Dissipation Factor (tanδ) | Rated voltage(Vdc) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | (at20 °C ,120Hz) |
| | Tanδ (Max) | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | 0.09 | |
| Low Temperature Characteristics (Max.Impedance Ratio) | Rated voltage(Vdc) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | (at120Hz) |
| | Z(-25 °C)/Z(+20 °C) | 4 | 3 | 2 | | | | | |
| | Z(-40 °C)/Z(+20 °C) | 8 | 5 | 4 | 3 | | | | |
| Endurance | The following specifications shall be satisfied when the capacitors are restored to 20 °C after the rated voltage is applied for 2,000 hours at 105 °C | | | | | | | | |
| | Capacitance change | ≤ ± 20% of the initial value | | | | | | | |
| | DF (tanδ) | ≤ 200% of the initial specified value | | | | | | | |
| | Leakage current | ≤ The initial specified value | | | | | | | |
| Shelf Life | The following specifications shall be satisfied when the capacitor are restored to 20 °C after exposing them for 1,000hours at 105 °C without voltage applied. | | | | | | | | |
| | Capacitance change | ≤ ± 20% of the initial value | | | | | | | |
| | DF (tanδ) | ≤ 200% of the specified value | | | | | | | |
| | Leakage current | ≤ 200% the initial specified value | | | | | | | |

● DIMENSIONS[MM]



| Φ D | 4 | 5 | 6.3 | 8 |
|------|------------|------|-----|-----|
| Φ d | 0.45 | 0.45 | 0.5 | 0.5 |
| F | 1.5 | 2.0 | 2.5 | 3.5 |
| Φ D' | Φ D+0.5max | | | |
| L' | L+2max | | | |

● RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current

| WV(Vdc) | 50/60 | 120 | 1k | 10k-100k |
|-----------|-------|------|------|----------|
| 6.3 to 16 | 0.80 | 1.00 | 1.30 | 1.50 |
| 25 to 35 | 0.80 | 1.00 | 1.20 | 1.20 |
| ≥ 50 | 0.80 | 1.00 | 1.15 | 1.20 |

The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5 °C rise, When long life performance is required in actual use, the rms ripple current has to be reduced

SS Series

STANDARD RATINGS

| WV(V _{dc}) | Cap (μ F) | Case size φ DxL(mm) | Tanδ | Ripple current (mA _{rms} /105 °C, 120Hz) |
|----------------------|-----------|---------------------|------|---|
| 6.3(0J) | 22 | 4 × 7 | 0.22 | 28 |
| | 33 | 4 × 7 | 0.22 | 32 |
| | | 5 × 7 | 0.22 | 35 |
| | 47 | 5 × 7 | 0.22 | 47 |
| | 68 | 5 × 7 | 0.22 | 50 |
| | 100 | 6.3 × 7 | 0.22 | 75 |
| | 220 | 8 × 7 | 0.22 | 92 |
| 10(1A) | 22 | 4 × 7 | 0.19 | 32 |
| | 33 | 5 × 7 | 0.19 | 68 |
| | 47 | 5 × 7 | 0.19 | 51 |
| | 68 | 6.3 × 7 | 0.19 | 68 |
| | 100 | 6.3 × 7 | 0.19 | 80 |
| | | 8 × 7 | 0.19 | 95 |
| 220 | 8 × 7 | 0.19 | 130 | |
| 16(1C) | 10 | 4 × 7 | 0.16 | 28 |
| | 22 | 4 × 7 | 0.16 | 35 |
| | | 5 × 7 | 0.16 | 42 |
| | 33 | 5 × 7 | 0.16 | 50 |
| | 47 | 6.3 × 7 | 0.16 | 67 |
| | 68 | 6.3 × 7 | 0.16 | 70 |
| | | 8 × 7 | 0.16 | 78 |
| 100 | 8 × 7 | 0.16 | 110 | |
| 25(1E) | 4.7 | 4 × 7 | 0.14 | 17 |
| | 6.8 | 4 × 7 | 0.14 | 19 |
| | 10 | 4 × 7 | 0.14 | 28 |
| | | 5 × 7 | 0.14 | 33 |
| | 22 | 5 × 7 | 0.14 | 43 |
| | | 6.3 × 7 | 0.14 | 45 |
| | 33 | 6.3 × 7 | 0.14 | 62 |
| | 47 | 8 × 7 | 0.14 | 75 |
| | 68 | 8 × 7 | 0.14 | 80 |
| 100 | 8 × 7 | 0.14 | 115 | |

| WV(V _{dc}) | Cap (μ F) | Case size φ DxL(mm) | Tanδ | Ripple current (mA _{rms} /105 °C, 120Hz) |
|----------------------|-----------|---------------------|------|---|
| 35(1V) | 4.7 | 4 × 7 | 0.12 | 22 |
| | 6.8 | 4 × 7 | 0.12 | 24 |
| | | 5 × 7 | 0.12 | 28 |
| | 10 | 5 × 7 | 0.12 | 35 |
| | 22 | 6.3 × 7 | 0.12 | 60 |
| | 33 | 6.3 × 7 | 0.12 | 50 |
| | | 8 × 7 | 0.12 | 68 |
| | 47 | 8 × 7 | 0.12 | 80 |
| 68 | 8 × 7 | 0.12 | 85 | |
| 50(1H) | 0.1 | 4 × 7 | 0.10 | 1.5 |
| | 0.22 | 4 × 7 | 0.10 | 2.5 |
| | 0.33 | 4 × 7 | 0.10 | 3.5 |
| | 0.47 | 4 × 7 | 0.10 | 5 |
| | 0.68 | 4 × 7 | 0.10 | 7 |
| | 1 | 4 × 7 | 0.10 | 10 |
| | 2.2 | 4 × 7 | 0.10 | 20 |
| | 3.3 | 4 × 7 | 0.10 | 26 |
| | 4.7 | 4 × 7 | 0.10 | 27 |
| | | 5 × 7 | 0.10 | 29 |
| | 10 | 6.3 × 7 | 0.10 | 38 |
| | 22 | 8 × 7 | 0.10 | 63 |
| 33 | 8 × 7 | 0.10 | 78 | |
| 63(1J) | 0.1 | 4 × 7 | 0.09 | 1.5 |
| | 0.22 | 4 × 7 | 0.09 | 2.5 |
| | 0.33 | 4 × 7 | 0.09 | 3.5 |
| | 0.47 | 4 × 7 | 0.09 | 6 |
| | 1 | 4 × 7 | 0.09 | 12 |
| | 2.2 | 4 × 7 | 0.09 | 20 |
| | 3.3 | 5 × 7 | 0.09 | 28 |
| | 4.7 | 6.3 × 7 | 0.09 | 33 |
| | 10 | 6.3 × 7 | 0.09 | 40 |
| | 22 | 8 × 7 | 0.09 | 65 |