## Aluminium Electrolytic Capacitors

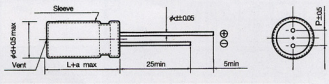
# SS,SX Series

- The usage same as GR series.
- It provides a smaller size as 7mm.
- The product is applied of 85℃(SS Series) or 105℃(SX Series).

### SPECIFICATION

| ITEM | SPECIFICATION | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Capacitance Tolerance (120Hz 20℃) | ±20%(M) | | | | | | | | |
| Rated Workig Voltage | 4-63WV | | | | | | | | |
| Operatiom Temperature Range | -40 ~ +85℃(SS Series) | | | | | -40 ~ +105℃(SX Series) | | | |
| Surge voltage(V) (20℃) | WV | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 |
| | SV | 5 | 8 | 13 | 20 | 32 | 44 | 63 | 79 |
| Leakage Current (20℃) | I≤0.01CV or 3<br>Whichever is greater after rated voltage applied for 3 minutes<br>I:Leakage Current (μA) C:capacitance(μF) V:Voltage(V) | | | | | | | | |
| Dissipation Factor(tan δ) (120Hz 20℃) | WV | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 |
| | DF | 0.35 | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 |
| Low Temperature Characteristics | Impedance ratio at 120Hz | | | | | | | | |
| | Comparison Z \ WV | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 |
| | -25℃/20℃ | 6 | 4 | 3 | 2 | 2 | 2 | 2 | 2 |
| | -40℃/20℃ | 12 | 8 | 6 | 4 | 4 | 4 | 4 | 4 |
| Load Life | After 1000 hours application of W.V, at 85℃(SS Series) or 105℃(SX Series).<br>The capacitor shall meet the following limits | | | | | | | | |
| | Capacitance Change | ≤ ±20% of initial Value | | | | | | | |
| | Dissipation Factor | ≤ 200% of initial Specified Value | | | | | | | |
| | Leakage Current | ≤ Initial Specified Value | | | | | | | |
| Others | Satisfied JIS C-5141 | | | | | | | | |

### DIMENSIONS(unit:mm)




| ØD | 4 | 5 | 6.3 | 8 |
|---|---|---|---|---|
| P | 1.5 | 2.0 | 2.5 | 3.5 |
| Ød | 0.45 | 0.5 | 0.5 | 0.6 |
| a | 1.0 | 1.0 | 1.0 | 1.0 |

### RIPPLE CURRENT COEFFICIENTS

Frequency Multipliers

| WV \ Freq.(Hz) | 50 | 120 | 1K | 10K~ |
|---|---|---|---|---|
| 4~16 | 0.80 | 1.00 | 1.10 | 1.20 |
| 25~35 | 0.80 | 1.00 | 1.50 | 1.70 |
| 50~63 | 0.80 | 1.00 | 1.60 | 1.90 |

Temperature Multipliers

| Temp.(℃) | ~75 | 85 |
|---|---|---|
| Coefficient | 1.35 | 1.00 |

### CASE SIZE & MAX RIPLE CURRENT

CASE SIZE ØDXL (mm) | MAX RIPPLE CURRENT (MA/120HZ),(85℃/SS Series,105℃/SX Series)

| μF \ WV | 4 | | 6.3 | | 10 | | 16 | | 25 | | 35 | | 50 | | 63 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.10 | | | | | | | | | | | | | 4×7 | 1.0 | 4×7 | 1.3 |
| 0.22 | | | | | | | | | | | | | 4×7 | 2.3 | 4×7 | 2.9 |
| 0.33 | | | | | | | | | | | | | 4×7 | 3.5 | 4×7 | 4.4 |
| 0.47 | | | | | | | | | | | | | 4×7 | 5.0 | 4×7 | 7.9 |
| 1.0 | | | | | | | | | | | | | 4×7 | 10 | 4×7 | 11 |
| 2.2 | | | | | | | | | | | | | 4×7 | 15 | 4×7 | 17 |
| 3.3 | | | | | | | | | | | | | 4×7 | 18 | 4×7 | 21 |
| 4.7 | | | | | | | | | | | 4×7 | 24 | 4×7 | 23 | 5×7 | 26 |
| 10 | | | | | | | 4×7 | 29 | 4×7 | 32 | 5×7 | 36 | 6.3×7 | 38 | | |
| 22 | | | | | 4×7 | 35 | 4×7 | 39 | 5×7 | 48 | 6.3×7 | 57 | | | | |
| 33 | 4×7 | 33 | 4×7 | 40 | 4×7 | 43 | 5×7 | 55 | 6.3×7 | 62 | | | | | | |
| 47 | 4×7 | 39 | 4×7 | 48 | 5×7 | 59 | 6.3×7 | 68 | | | | | | | | |
| 100 | 5×7 | 65 | 5×7 | 78 | 6.3×7 | 87 | 6.3×7 | 98 | | | | | | | | |
| 220 | 6.3×7 | 110 | 6.3×7 | 120 | 8×7 | 145 | | | | | | | | | | |

## Aluminium Electrolytic Capacitors

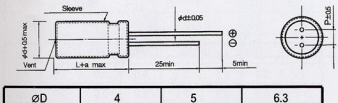
# SM Series

- The sizes are smaller then SS series .
- Its height is 5 mm.

### SPECIFICATION

| ITEM | SPECIFICATION | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Capacitance Tolerance (120Hz 20℃) | ±20%(M) | | | | | | | |
| Rated Workig Voltage | 4~50WV | | | | | | | |
| Operatiom Temperature Range | -40 ~ +85℃ | | | | | | | |
| Surge voltage(V) (20℃) | WV | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 |
| | SV | 5 | 8 | 13 | 20 | 32 | 44 | 63 |
| Leakage Current (20℃) | I≤0.01CV or 3<br>Whichever is greater after rated voltage applied for 3 minutes<br>I:Leakage Current (μA) C:capacitance(μF) V:Voltage(V) | | | | | | | |
| Dissipation Factor(tan δ) (120Hz 20℃) | WV | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 |
| | DF | 0.35 | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 |
| Low Temperature Characteristics | Impedance ratio at 120Hz | | | | | | | |
| | Comparison Z \ WV | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 |
| | -25℃/20℃ | 6 | 4 | 3 | 2 | 2 | 2 | 2 |
| | -40℃/20℃ | 12 | 8 | 6 | 4 | 4 | 4 | 4 |
| Load Life | After 1000 hours application of W.V. at 85℃.<br>The capacitor shall meet the following limits. | | | | | | | |
| | Capacitance Change | ≤ ±20% of initial Value | | | | | | |
| | Dissipation Factor | ≤ 200% of initial Specified Value | | | | | | |
| | Leakage Current | ≤ Initial Specified Value | | | | | | |
| Others | Satisfied JIS C-5141 | | | | | | | |

### DIMENSIONS(unit:mm)




| ØD | 4 | 5 | 6.3 |
|---|---|---|---|
| P | 1.5 | 2.0 | 2.5 |
| Ød | 0.45 | 0.5 | 0.5 |
| a | 1.0 | 1.0 | 1.0 |

### RIPPLE CURRENT COEFFICIENTS

Frequency Multipliers

| WV \ Freq.(Hz) | 50 | 120 | 1K | 10K |
|---|---|---|---|---|
| 4~16 | 0.80 | 1.00 | 1.10 | 1.20 |
| 25~50 | 0.80 | 1.00 | 1.50 | 1.70 |

Temperature Multipliers

| Temp.(℃) | -75 | 85 |
|---|---|---|
| Coefficient | 1.35 | 1.00 |

### CASE SIZE & MAX RIPLE CURRENT

CASE SIZE ØDXL (mm) | MAX RIPPLE CURRENT (MA/85℃, 120HZ)

| μF \ WV | 4 | | 6.3 | | 10 | | 16 | | 25 | | 35 | | 50 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.10 | | | | | | | | | | | | | 4×5 | 1.0 |
| 0.22 | | | | | | | | | | | | | 4×5 | 2.0 |
| 0.33 | | | | | | | | | | | | | 4×5 | 2.9 |
| 0.47 | | | | | | | | | | | | | 4×5 | 4.0 |
| 1.0 | | | | | | | | | | | | | 4×5 | 8.5 |
| 2.2 | | | | | | | | | | | | | 4×5 | 12 |
| 3.3 | | | | | | | | | | | | | 4×5 | 15 |
| 4.7 | | | | | | | | | 4×5 | 13 | 4×5 | 16 | 5×5 | 19 |
| 10 | | | 4×5 | 18 | 4×5 | 20 | 4×5 | 24 | 5×5 | 27 | 5×5 | 30 | 6.3×5 | 32 |
| 22 | 4×5 | 22 | 4×5 | 27 | 5×5 | 29 | 5×5 | 33 | 6.3×5 | 40 | 6.3×5 | 48 | | |
| 33 | 4×5 | 28 | 5×5 | 34 | 5×5 | 36 | 6.3×5 | 46 | 6.3×5 | 53 | | | | |
| 47 | 5×5 | 33 | 5×5 | 40 | 6.3×5 | 50 | 6.3×5 | 57 | | | | | | |
| 100 | 6.3×5 | 55 | 6.3×5 | 66 | | | | | | | | | | |