# SEV SERIES

**85°C Standard, Lead Free Reflow Soldering.**

## ◆FEATURES

- Case Dia φ 3~φ 18mm
- Lead free reflow soldering is available.
- Available for high density mounting.
- RoHS compliance.

## ◆SPECIFICATIONS

| Items | Characteristics |
|---|---|
| Category Temperature Range | −40~+85°C |
| Rated Voltage Range | 4~100V.DC |
| Capacitance Tolerance | ± 20%(20°C,120Hz) |
| Leakage Current(MAX) | I=0.01CV or 3μA whichever is greater. (After 2 minutes application of rated voltage)<br>I=Leakage Current(μA) C=Rated Capacitance(μF) V=Rated Voltage(V) |
| Dissipation Factor(MAX) (tanδ) | (20°C,120Hz) |
| Endurance | After applying rated voltage with rated ripple current for 2000 hrs at 85°C, the capacitors shall meet the following requirements. |
| Low Temperature Stability Impedance Ratio(MAX) | (120Hz) |

| Rated Voltage (V) | | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 |
|---|---|---|---|---|---|---|---|---|---|---|
| tanδ | φ 3 | 0.40 | 0.30 | - | 0.20 | 0.16 | 0.14 | 0.14 | - | - |
| | φ4,φ5,φ6.3×5.5 | 0.40 | 0.26 | 0.22 | 0.18 | 0.16 | 0.13 | 0.12 | - | - |
| | φ6.3×8,φ8~φ18 | 0.50 | 0.35 | 0.26 | 0.20 | 0.16 | 0.14 | 0.12 | 0.12 | 0.10 |

When rated capacitance is over 1000μF, tanδ shall be added 0.02 to the listed value with increase of every 1000μF.

| | |
|---|---|
| Capacitance Change | Within ±25% of the initial value. |
| Dissipation Factor | Not more than 200% of the specified value. |
| Leakage Current | Not more than the specified value. |

| Rated Voltage | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 |
|---|---|---|---|---|---|---|---|---|---|
| Z(-25°C)/Z(20°C) | 7 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 |
| Z(-40°C)/Z(20°C) | 15 | 8 | 8 | 4 | 4 | 3 | 3 | 5 | 5 |

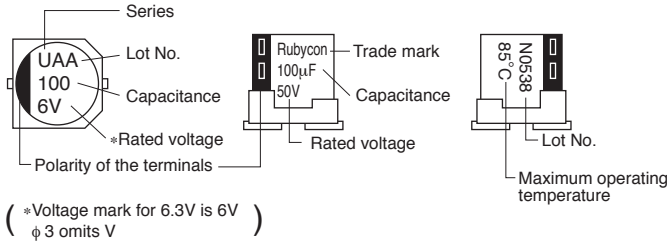
## ◆MULTIPLIER FOR RIPPLE CURRENT

Frequency coefficient

| Frequency (Hz) | | 60(50) | 120 | 500 | 1k | 10k≦ |
|---|---|---|---|---|---|---|
| Coefficient | 0.1~1μF | 0.50 | 1.00 | 1.20 | 1.30 | 1.50 |
| | 2.2~4.7μF | 0.65 | 1.00 | 1.20 | 1.30 | 1.50 |
| | 10~47μF | 0.80 | 1.00 | 1.20 | 1.30 | 1.50 |
| | 100~1000μF | 0.80 | 1.00 | 1.10 | 1.15 | 1.20 |
| | 2200~10000μF | 0.80 | 1.00 | 1.05 | 1.10 | 1.15 |

## ◆MARKING

[φ 3~φ 6.3, φ 8×6.5] [φ 8×10.5, φ 10~φ 18]



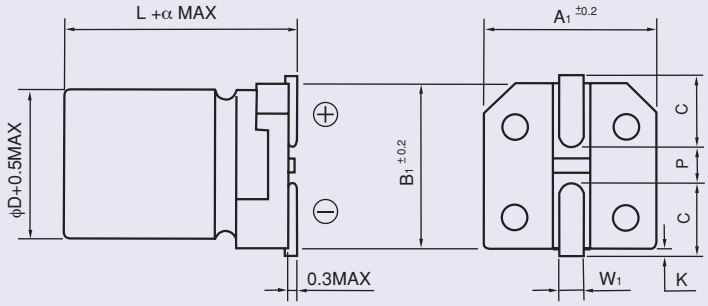

( ∗Voltage mark for 6.3V is 6V
φ 3 omits V )

## ◆PART NUMBER

□□□ Rated Voltage / SEV Series / □□□□□ Rated Capacitance / □ Capacitance Tolerance / □□□ Option / D×L Case Size

## ◆ DIMENSIONS

(mm)




φ8×10.5~ φ18 have sleeve.

| φ D | L | A1 | B1 | C | W1 | P | K | α |
|---|---|---|---|---|---|---|---|---|
| 3 | 5.5 | 3.3 | 3.3 | 1.5 | 0.45~0.8 | 0.8 | 0.5 MAX | 0 |
| 4 | 5.5 | 4.3 | 4.3 | 1.8 | 0.5~0.8 | 1.0 | 0.5 MAX | 0 |
| 5 | 5.5 | 5.3 | 5.3 | 2.2 | 0.5~0.8 | 1.3 | 0.5 MAX | 0 |
| 6.3 | 5.5 | 6.6 | 6.6 | 2.7 | 0.5~0.8 | 1.8 | 0.5 MAX | 0 |
| 6.3 | 8 | 6.6 | 6.6 | 2.7 | 0.5~0.8 | 1.8 | 0.5 MAX | 0 |
| 8 | 6.5 | 8.3 | 8.3 | 3.4 | 0.5~0.8 | 2.2 | 0.5 MAX | 0 |
| 8 | 10.5 | 8.3 | 8.3 | 2.9 | 0.8~1.1 | 3.1 | 0.5 MAX | 0 |
| 10 | 10.5 | 10.3 | 10.3 | 3.2 | 0.8~1.1 | 4.5 | 0.5 MAX | 0 |
| 12.5 | 13.5 | 13 | 13 | 4.9 | 0.8~1.1 | 4.5 | 0.7±0.4 | 0.5 |
| 12.5 | 16 | 13 | 13 | 4.9 | 0.8~1.1 | 4.5 | 0.7±0.4 | 0.5 |
| 16 | 16.5 | 17 | 17 | 6 | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5 |
| 16 | 21.5 | 17 | 17 | 6 | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5 |
| 18 | 16.5 | 19 | 19 | 7 | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5 |
| 18 | 21.5 | 19 | 19 | 7 | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5 |

## ◆ STANDARD SIZE, RATED RIPPLE CURRENT

Size φD×L(mm), Ripple Current (mA r.m.s./85°C, 120Hz)

| WV(V.DC) / Cap(μF) | 4 (0G) | | 6.3 (0J) | | 10 (1A) | | 16 (1C) | | 25 (1E) | | 35 (1V) | | 50 (1H) | | 63 (1J) | | 100 (2A) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple |
| 0.1 | | | | | | | | | | | | | 3×5.5<br>4×5.5 | 1.0 | | | | |
| 0.22 | | | | | | | | | | | | | 3×5.5<br>4×5.5 | 2.0 | | | | |
| 0.33 | | | | | | | | | | | | | 3×5.5<br>4×5.5 | 2.8 | | | | |
| 0.47 | | | | | | | | | | | | | 3×5.5<br>4×5.5 | 4.0 | | | | |
| 1 | | | | | | | | | | | | | 3×5.5<br>4×5.5 | 8.0<br>8.4 | | | | |
| 2.2 | | | | | | | | | | | 3×5.5 | 8.4 | 3×5.5<br>4×5.5 | 10<br>14 | | | | |
| 3.3 | | | | | | | | | | | 3×5.5 | 10 | 4×5.5 | 17 | | | | |
| 4.7 | | | | | | | 3×5.5 | 12 | 3×5.5<br>4×5.5 | 12<br>18 | 4×5.5 | 18 | 4×5.5<br>5×5.5 | 18<br>22 | | | 8×10.5 | 80 |
| 10 | | | | | | | 3×5.5<br>4×5.5 | 18<br>25 | 4×5.5 | 25 | 5×5.5 | 30 | 5×5.5<br>6.3×5.5 | 30<br>35 | | | 8×10.5 | 90 |
| 22 | 3×5.5 | 19 | 3×5.5<br>4×5.5 | 21<br>29 | | | 4×5.5<br>5×5.5 | 30<br>39 | | | 6.3×5.5 | 48 | 6.3×5.5<br>8×6.5 | 48<br>80 | 8×10.5 | 75 | 8×10.5 | 130 |
| 33 | 4×5.5 | 28 | | | 4×5.5<br>5×5.5 | 32<br>43 | 5×5.5 | 43 | 6.3×5.5 | 54 | 6.3×5.5 | 58 | 6.3×8<br>8×10.5 | 95<br>200 | 8×10.5 | 160 | 10×10.5 | 170 |
| 47 | 4×5.5 | 34 | 4×5.5<br>5×5.5 | 36<br>46 | | | 5×5.5<br>6.3×5.5 | 50<br>60 | 6.3×5.5 | 60 | 6.3×8<br>8×6.5 | 105<br>115 | 8×10.5<br>10×10.5 | 240<br>280 | 8×10.5 | 170 | 12.5×13.5 | 250 |
| 100 | 5×5.5 | 61 | 5×5.5<br>6.3×5.5 | 61<br>71 | 6.3×5.5 | 71 | 6.3×5.5<br>8×6.5 | 86<br>135 | 6.3×8<br>8×6.5 | 145<br>160 | 8×10.5<br>10×10.5 | 280<br>480 | 8×10.5<br>10×10.5 | 320<br>500 | 10×10.5 | 240 | 12.5×16 | 440 |
| 220 | 6.3×5.5 | 96 | 6.3×5.5 | 96 | 6.3×8<br>8×6.5 | 175<br>190 | 6.3×8<br>8×10.5 | 165<br>290 | 8×10.5<br>10×10.5 | 300<br>560 | 10×10.5 | 570 | 12.5×13.5 | 580 | 12.5×16 | 580 | 16×21.5<br>18×16.5 | 665 |
| 330 | | | 6.3×8<br>8×6.5 | 190<br>210 | 8×10.5 | 330 | 8×10.5<br>10×10.5 | 330<br>670 | 10×10.5 | 680 | | | 12.5×13.5 | 600 | 18×16.5 | 680 | 18×21.5 | 825 |
| 470 | 6.3× 8 | 200 | 8×10.5 | 380 | 8×10.5<br>10×10.5 | 380<br>680 | 8×10.5<br>10×10.5 | 385<br>690 | 12.5×13.5 | 700 | 12.5×13.5 | 700 | 16×16.5 | 740 | 16×21.5<br>18×16.5 | 850 | | |
| 1000 | | | 10×10.5 | 700 | 12.5×13.5 | 710 | 12.5×13.5 | 720 | 12.5×16 | 820 | 16×16.5 | 1000 | 18×21.5 | 1150 | | | | |
| 2200 | | | 12.5×16 | 890 | 12.5×16 | 960 | 16×16.5 | 1150 | 16×21.5<br>18×16.5 | 1350 | 18×21.5 | 1550 | | | | | | |
| 3300 | | | 16×16.5 | 1200 | 16×16.5 | 1300 | 16×21.5<br>18×16.5 | 1450 | 18×21.5 | 1700 | | | | | | | | |
| 4700 | | | 16×16.5 | 1400 | 16×21.5<br>18×16.5 | 1500 | 18×21.5 | 1750 | | | | | | | | | | |
| 6800 | | | 16×21.5<br>18×16.5 | 1650 | 18×21.5 | 1850 | | | | | | | | | | | | |
| 10000 | | | 18×21.5 | 2000 | | | | | | | | | | | | | | |