

# SEV SERIES

## 85°C Standard

- Load Life : 85°C 2000 hours.
- AEC-Q200.

RoHS  
compliance



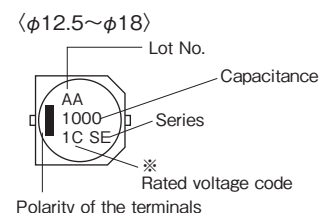
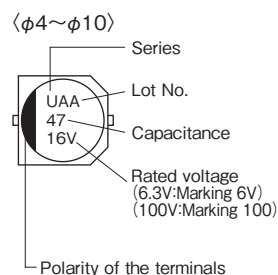
## SPECIFICATIONS

| Items                                             | Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |                                   |                    |                                            |                 |                                    |      |      |      |     |                |      |                |      |      |      |      |      |      |      |                |    |                 |      |      |      |      |      |      |      |      |      |         |   |      |      |      |      |      |      |      |      |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------------------|--------------------|--------------------------------------------|-----------------|------------------------------------|------|------|------|-----|----------------|------|----------------|------|------|------|------|------|------|------|----------------|----|-----------------|------|------|------|------|------|------|------|------|------|---------|---|------|------|------|------|------|------|------|------|
| Category Temperature Range                        | −40~+85℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                        |                                   |                    |                                            |                 |                                    |      |      |      |     |                |      |                |      |      |      |      |      |      |      |                |    |                 |      |      |      |      |      |      |      |      |      |         |   |      |      |      |      |      |      |      |      |
| Rated Voltage Range                               | 4~100Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                        |                                   |                    |                                            |                 |                                    |      |      |      |     |                |      |                |      |      |      |      |      |      |      |                |    |                 |      |      |      |      |      |      |      |      |      |         |   |      |      |      |      |      |      |      |      |
| Capacitance Tolerance                             | ±20% (20℃,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=Capacitance(μF)                      V=Rated Voltage(Vdc)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                        |                                   |                    |                                            |                 |                                    |      |      |      |     |                |      |                |      |      |      |      |      |      |      |                |    |                 |      |      |      |      |      |      |      |      |      |         |   |      |      |      |      |      |      |      |      |
| Dissipation Factor(MAX)<br>(tanδ)                 | <table><tr><td colspan="2">Rated Voltage<br/>(Vdc)</td><td>4</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td></tr><tr><td rowspan="3">tanδ</td><td>φ4,φ5,φ6.3×5.5</td><td>0.40</td><td>0.26</td><td>0.22</td><td>0.18</td><td>0.16</td><td>0.13</td><td>0.12</td><td>—</td><td>—</td></tr><tr><td>φ6.3×8,φ8~φ12.5</td><td>0.50</td><td>0.35</td><td>0.26</td><td>0.20</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.12</td><td>0.10</td></tr><tr><td>φ16,φ18</td><td>—</td><td>0.48</td><td>0.34</td><td>0.24</td><td>0.18</td><td>0.14</td><td>0.12</td><td>0.12</td><td>0.10</td></tr></table> <p>(20℃,120Hz)</p> <p>When rated capacitance is over 1000μF, tanδ shall be added 0.02 to the listed value with increase of every 1000μF.</p> | Rated Voltage<br>(Vdc) |                                   | 4                  | 6.3                                        | 10              | 16                                 | 25   | 35   | 50   | 63  | 100            | tanδ | φ4,φ5,φ6.3×5.5 | 0.40 | 0.26 | 0.22 | 0.18 | 0.16 | 0.13 | 0.12 | —              | —  | φ6.3×8,φ8~φ12.5 | 0.50 | 0.35 | 0.26 | 0.20 | 0.16 | 0.14 | 0.12 | 0.12 | 0.10 | φ16,φ18 | — | 0.48 | 0.34 | 0.24 | 0.18 | 0.14 | 0.12 | 0.12 | 0.10 |
| Rated Voltage<br>(Vdc)                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 4                      | 6.3                               | 10                 | 16                                         | 25              | 35                                 | 50   | 63   | 100  |     |                |      |                |      |      |      |      |      |      |      |                |    |                 |      |      |      |      |      |      |      |      |      |         |   |      |      |      |      |      |      |      |      |
| tanδ                                              | φ4,φ5,φ6.3×5.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.40                   | 0.26                              | 0.22               | 0.18                                       | 0.16            | 0.13                               | 0.12 | —    | —    |     |                |      |                |      |      |      |      |      |      |      |                |    |                 |      |      |      |      |      |      |      |      |      |         |   |      |      |      |      |      |      |      |      |
|                                                   | φ6.3×8,φ8~φ12.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.50                   | 0.35                              | 0.26               | 0.20                                       | 0.16            | 0.14                               | 0.12 | 0.12 | 0.10 |     |                |      |                |      |      |      |      |      |      |      |                |    |                 |      |      |      |      |      |      |      |      |      |         |   |      |      |      |      |      |      |      |      |
|                                                   | φ16,φ18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | —                      | 0.48                              | 0.34               | 0.24                                       | 0.18            | 0.14                               | 0.12 | 0.12 | 0.10 |     |                |      |                |      |      |      |      |      |      |      |                |    |                 |      |      |      |      |      |      |      |      |      |         |   |      |      |      |      |      |      |      |      |
| Endurance                                         | <p>After applying rated voltage with rated ripple current for 2000 hrs at 85℃, the capacitors shall meet the following requirements.</p> <table><tr><td>Capacitance Change</td><td>Within ±25% of the initial value.</td></tr><tr><td>Dissipation Factor</td><td>Not more than 200% of the specified value.</td></tr><tr><td>Leakage Current</td><td>Not more than the specified value.</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                      | 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. |      |      |      |     |                |      |                |      |      |      |      |      |      |      |                |    |                 |      |      |      |      |      |      |      |      |      |         |   |      |      |      |      |      |      |      |      |
| 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                        |                                   |                    |                                            |                 |                                    |      |      |      |     |                |      |                |      |      |      |      |      |      |      |                |    |                 |      |      |      |      |      |      |      |      |      |         |   |      |      |      |      |      |      |      |      |
| Low Temperature Stability<br>Impedance Ratio(MAX) | <table><tr><td>Rated Voltage<br/>(Vdc)</td><td>4</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td></tr><tr><td>Z(−25℃)/Z(20℃)</td><td>7</td><td>4</td><td>3</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Z(−40℃)/Z(20℃)</td><td>15</td><td>8</td><td>8</td><td>4</td><td>4</td><td>3</td><td>3</td><td>5</td><td>5</td></tr></table> <p>(120Hz)</p>                                                                                                                                                                                                                                                                                                                                                               | Rated Voltage<br>(Vdc) | 4                                 | 6.3                | 10                                         | 16              | 25                                 | 35   | 50   | 63   | 100 | Z(−25℃)/Z(20℃) | 7    | 4              | 3    | 2    | 2    | 2    | 2    | 2    | 2    | Z(−40℃)/Z(20℃) | 15 | 8               | 8    | 4    | 4    | 3    | 3    | 5    | 5    |      |      |         |   |      |      |      |      |      |      |      |      |
| Rated Voltage<br>(Vdc)                            | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 6.3                    | 10                                | 16                 | 25                                         | 35              | 50                                 | 63   | 100  |      |     |                |      |                |      |      |      |      |      |      |      |                |    |                 |      |      |      |      |      |      |      |      |      |         |   |      |      |      |      |      |      |      |      |
| Z(−25℃)/Z(20℃)                                    | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 4                      | 3                                 | 2                  | 2                                          | 2               | 2                                  | 2    | 2    |      |     |                |      |                |      |      |      |      |      |      |      |                |    |                 |      |      |      |      |      |      |      |      |      |         |   |      |      |      |      |      |      |      |      |
| Z(−40℃)/Z(20℃)                                    | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 8                      | 8                                 | 4                  | 4                                          | 3               | 3                                  | 5    | 5    |      |     |                |      |                |      |      |      |      |      |      |      |                |    |                 |      |      |      |      |      |      |      |      |      |         |   |      |      |      |      |      |      |      |      |

## MULTIPLIER FOR RIPPLE CURRENT

| Frequency (Hz) | 60(50) | 120  | 500  | 1k   | 10k≤ |
|----------------|--------|------|------|------|------|
| 0.47~1μF       | 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



※ Voltage code

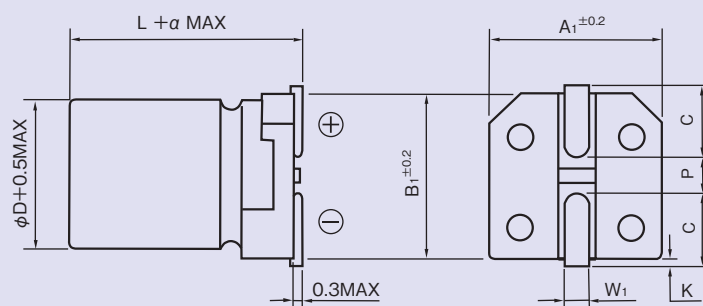
| Rated Voltage (Vdc) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 |
|---------------------|-----|----|----|----|----|----|----|-----|
| Rated Voltage code  | 0J  | 1A | 1C | 1E | 1V | 1H | 1J | 2A  |

## PART NUMBER

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

## ◆ DIMENSIONS

(mm)



| $\phi D$ | L    | A1   | B1   | C   | W1      | P   | K       | $\alpha$ |
|----------|------|------|------|-----|---------|-----|---------|----------|
| 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**

Size  $\phi D \times L$ (mm), Rated Ripple Current (mA r.m.s./85°C, 120Hz)[illegible]