

## SM series

+105°C,7mmL(高)

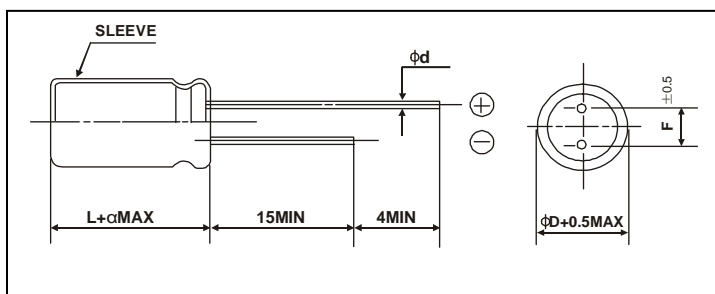
### ◆ FEATURES

- Rated working voltage range 6.3 to 50V DC Operation temperature range -40 to 105°C.
- This series is for communication equipments, switching power supply, industrial measuring instruments, automotive electric products, etc

### ◆ SPECIFICATIONS

| Items  | Characteristics  |   |                    |                                  |      |      |      |
|--|--|---|--------------------|----------------------------------|------|------|------|
| Category Temperature Range                       | -40~+105°C   |   |                    |                                  |      |      |      |
| Rated Voltage Range                              | 6.3~50V.DC   |   |                    |                                  |      |      |      |
| Nominal Capacitance Range                        | 0.1~470μ F   |   |                    |                                  |      |      |      |
| Capacitance Tolerance                            | ±20%(120Hz,+20°C)  |   |                    |                                  |      |      |      |
| Leakage Current(MAX)                             | I=0.01CV or 3(μA)<br>after 2 minutes whichever is greater measured with rated working voltage at 20°C                            |   |                    |                                  |      |      |      |
| Dissipation Factor(MAX)<br>Tanδ (20°C,120Hz)     | Rated Voltage(V)   | 6.3                                       | 10                 | 16                               | 25   | 35   | 50   |
|  | Tanδ   | 0.24                                      | 0.20               | 0.16                             | 0.14 | 0.12 | 0.10 |
| Load Life  | After applying rated voltage with max ripple current for 1000 hrs at 105°C, the capacitors shall meet the following requirements |   |                    |                                  |      |      |      |
|  | Capacitance Change   | Within ±20% of the initial value          |                    |                                  |      |      |      |
|  | Dissipation Factor   | Not more than 200% of the specified value |                    |                                  |      |      |      |
|  | Leakage Current  | Not more than the specified value         |                    |                                  |      |      |      |
| Shelf Life                                       | After Leaving capacitors under no load at 105°C for 1000hrs, they meet the characteristic requirements listed at right           |   | Capacitance change | Within ±20% of the initial value |      |      |      |
|  |  |   | Tanδ               | ≤200% of initial specified value |      |      |      |
|  |  |   | Leakage current    | ≤200% of initial specified value |      |      |      |
| Low Temperature Stability<br>Impedance Rate(MAX) | Rated Voltage(V)   | 6.3                                       | 10                 | 16                               | 25   | 35   | 50   |
|  | Z-25°C/Z+20°C  | 4   | 3                  | 2                                | 2    | 2    | 2    |
|  | Z-40°C/Z+20°C  | 8   | 6                  | 4                                | 4    | 3    | 3    |
| Other  | JISC-5141 EIAJ RC-2372   |   |                    |                                  |      |      |      |

### ◆ CASE SIZE TABLE



| φD | 4    | 5   | 6.3 | 8   |
|----|------|-----|-----|-----|
| F  | 1.5  | 2.0 | 2.5 | 3.5 |
| φd | 0.45 | 0.5 |     |     |
| α  | 1.0  |     |     |     |

### ◆ RIPPLE CURRENT MULTIPLIER

| Cap(μ F) | Frequency(Hz) |     |      |      |      |
|----------|---------------|-----|------|------|------|
|          | 50            | 120 | 300  | 1K   | 10K~ |
| ≤47      | 0.75          | 1.0 | 1.35 | 1.57 | 2.0  |
| 56~470   | 0.8           | 1.0 | 1.23 | 1.34 | 1.5  |

## ◆ STANDARD RATINGS

Size:  $\Phi D \times L$ (mm)

| Voltage<br>Code | Cap( $\mu$ F) | 6.3V  |     | 10V   |     | 16V          |          | 25V          |           | 35V          |            | 50V   |     |
|-----------------|---------------|-------|-----|-------|-----|--------------|----------|--------------|-----------|--------------|------------|-------|-----|
|                 |               | OJ    |     | 1A    |     | 1C           |          | 1E           |           | 1V           |            | 1H    |     |
| 0.1             | 104           |       |     |       |     |              |          |              |           |              |            | 4×7   | 1.0 |
| 0.22            | 224           |       |     |       |     |              |          |              |           |              |            | 4×7   | 2.3 |
| 0.33            | 334           |       |     |       |     |              |          |              |           |              |            | 4×7   | 3.5 |
| 0.47            | 474           |       |     |       |     |              |          |              |           |              |            | 4×7   | 5   |
| 1.0             | 105           |       |     |       |     |              |          |              |           |              |            | 4×7   | 10  |
| 2.2             | 225           |       |     |       |     |              |          |              |           |              |            | 4×7   | 19  |
| 3.3             | 335           |       |     |       |     |              |          |              |           |              |            | 4×7   | 24  |
| 4.7             | 475           |       |     |       |     |              |          |              |           |              |            | 4×7   | 28  |
| 10              | 106           |       |     |       |     | 4×7          | 28       | 4×7          | 28        | 5×7          | 32         | 5×7   | 38  |
| 22              | 226           | 4×7   | 34  | 4×7   | 35  | 4×7          | 39       | 4×7<br>5×7   | 39<br>48  | 5×7          | 52         | 6.3×7 | 58  |
| 33              | 336           | 4×7   | 40  | 4×7   | 43  | 4×7<br>5×7   | 45<br>52 | 5×7          | 58        | 6.3×7        | 65         | 6.3×7 | 72  |
| 47              | 476           | 4×7   | 48  | 4×7   | 45  | 4×7<br>5×7   | 52<br>65 | 5×7<br>6.3×7 | 62<br>71  | 5×7<br>6.3×7 | 69<br>81   | 8×7   | 90  |
| 100             | 107           | 5×7   | 78  | 5×7   | 74  | 5×7<br>6.3×7 | 71<br>98 | 6.3×7<br>8×7 | 81<br>115 | 6.3×7<br>8×7 | 101<br>145 | 8×9   | 195 |
| 220             | 227           | 6.3×7 | 120 | 6.3×7 | 138 | 6.3×7        | 186      |              |           |              |            |       |     |
| 330             | 337           | 8×9   | 204 | 8×7   | 201 | 8×9          | 221      |              |           |              |            |       |     |
| 470             | 477           | 8×9   | 243 | 8×9   | 230 | 8×9          | 228      |              |           |              |            |       |     |

Maximum Allowable Ripple Current(mA rms) at 105°C 120Hz