



SG Series

Features

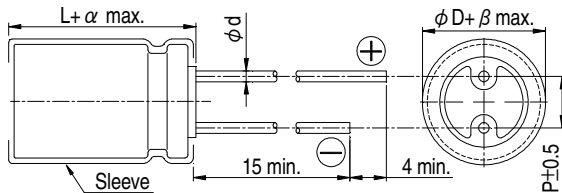
- 105°C, 1,000 hours assured
- High temperature Category range, with 7mm height
- RoHS compliance



Specifications

| Items | Performance | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---------------|-----------|--------------------|------------------------------|------|-----------------------------------|-----------------|------------------------|-----|------------|-----------------|-------------------|------|------|------|------|------|-----------|------|------|-------------------|------|------|---|---|---|---|---|---|
| Category Temperature Range | -40°C ~ +105°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Tolerance | ±20% (at 120 Hz, 20°C) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current (at 20°C) | I = 0.01CV or 3 (μA) whichever is greater (after 2 minutes) Where, C = rated capacitance in μF, V = rated DC working voltage in V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tanδ (at 120 Hz, 20°C) | <table border="1"> <thead> <tr> <th>Rated Voltage</th> <th>4</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> </tr> </thead> <tbody> <tr> <td>Tanδ (max)</td> <td>0.35</td> <td>0.23</td> <td>0.20</td> <td>0.17</td> <td>0.15</td> <td>0.12</td> <td>0.10</td> <td>0.10</td> </tr> </tbody> </table> | Rated Voltage | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | Tanδ (max) | 0.35 | 0.23 | 0.20 | 0.17 | 0.15 | 0.12 | 0.10 | 0.10 | | | | | | | | | | | |
| Rated Voltage | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | | | | | | | | | | | | | | | | | | | | | | |
| Tanδ (max) | 0.35 | 0.23 | 0.20 | 0.17 | 0.15 | 0.12 | 0.10 | 0.10 | | | | | | | | | | | | | | | | | | | | | | |
| Low Temperature Characteristics (at 120 Hz) | <p>Impedance ratio shall not exceed the values given in the table below.</p> <table border="1"> <thead> <tr> <th colspan="2">Rated Voltage</th> <th>4</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Impedance Ratio</td> <td>Z(-25°C)/Z(+20°C)</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z(-40°C)/Z(+20°C)</td> <td>12</td> <td>10</td> <td>8</td> <td>6</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> </tr> </tbody> </table> | Rated Voltage | | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | Impedance Ratio | Z(-25°C)/Z(+20°C) | 6 | 4 | 3 | 3 | 2 | 2 | 2 | 2 | Z(-40°C)/Z(+20°C) | 12 | 10 | 8 | 6 | 4 | 4 | 4 | 4 |
| Rated Voltage | | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | | | | | | | | | | | | | | | | | | | | | |
| Impedance Ratio | Z(-25°C)/Z(+20°C) | 6 | 4 | 3 | 3 | 2 | 2 | 2 | 2 | | | | | | | | | | | | | | | | | | | | | |
| | Z(-40°C)/Z(+20°C) | 12 | 10 | 8 | 6 | 4 | 4 | 4 | 4 | | | | | | | | | | | | | | | | | | | | | |
| Endurance | <table border="1"> <thead> <tr> <th>Test Time</th> <th>1,000 Hrs</th> </tr> </thead> <tbody> <tr> <td>Capacitance Change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>Tanδ</td> <td>Less than 200% of specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Within specified value</td> </tr> </tbody> </table> <p>* The above specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied with rated ripple current for 1,000 hours at 105°C.</p> | Test Time | 1,000 Hrs | Capacitance Change | Within ±20% of initial value | Tanδ | Less than 200% of specified value | Leakage Current | Within specified value | | | | | | | | | | | | | | | | | | | | | |
| Test Time | 1,000 Hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Change | Within ±20% of initial value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tanδ | Less than 200% of specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current | Within specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shelf Life Test | Test time: 500 hours; other items are the same as those for the Endurance. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ripple Current and Frequency Multipliers | <table border="1"> <thead> <tr> <th rowspan="2">Cap.(μF)</th> <th colspan="5">Freq.(Hz)</th> </tr> <tr> <th>60 (50)</th> <th>120</th> <th>500</th> <th>1k</th> <th>10k up</th> </tr> </thead> <tbody> <tr> <td>≤ 47</td> <td>0.75</td> <td>1.00</td> <td>1.20</td> <td>1.30</td> <td>1.45</td> </tr> <tr> <td>100 ~ 330</td> <td>0.88</td> <td>1.00</td> <td>1.10</td> <td>1.15</td> <td>1.20</td> </tr> </tbody> </table> | Cap.(μF) | Freq.(Hz) | | | | | 60 (50) | 120 | 500 | 1k | 10k up | ≤ 47 | 0.75 | 1.00 | 1.20 | 1.30 | 1.45 | 100 ~ 330 | 0.88 | 1.00 | 1.10 | 1.15 | 1.20 | | | | | | |
| Cap.(μF) | Freq.(Hz) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 60 (50) | 120 | 500 | 1k | 10k up | | | | | | | | | | | | | | | | | | | | | | | | | |
| ≤ 47 | 0.75 | 1.00 | 1.20 | 1.30 | 1.45 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100 ~ 330 | 0.88 | 1.00 | 1.10 | 1.15 | 1.20 | | | | | | | | | | | | | | | | | | | | | | | | | |

Diagram of Dimensions



Lead Spacing and Diameter Unit: mm

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

Dimension and Permissible Ripple Current

Dimension: φD × L(mm)

Ripple Current: mA/rms at 120 Hz, 105°C

| μF | Contents | 4V (0G) | | 6.3V (0J) | | 10V (1A) | | 16V (1C) | | 25V (1E) | | 35V (1V) | | 50V (1H) | | 63V (1J) | |
|-----|----------|---------|-----|-----------|-----|----------|-----|----------|-----|----------|-----|----------|-----|----------|------|----------|-----|
| | | φD×L | mA | φD×L | mA | φD×L | mA | φD×L | mA | φD×L | mA | φD×L | mA | φD×L | mA | φD×L | mA |
| 1 | 010 | | | | | | | | | | | | | 4×7 | 10 | 4×7 | 11 |
| 2.2 | 2R2 | | | | | | | | | | | | | 4×7 | 15 | 4×7 | 17 |
| 3.3 | 3R3 | | | | | | | | | | | | | 4×7 | 18 | 4×7 | 21 |
| 4.7 | 4R7 | | | | | | | | | | | | 4×7 | 22 | 5×7* | 23 | 5×7 |
| 10 | 100 | | | | | | | 4×7 | 25 | 4×7 | 26 | 5×7* | 30 | 6.3×7* | 34 | 6.3×7 | 40 |
| 22 | 220 | | | 4×7 | 31 | 4×7 | 32 | 5×7* | 39 | 5×7* | 41 | 6.3×7 | 47 | 6.3×7 | 53 | 8×7 | 70 |
| 33 | 330 | 4×7 | 32 | 4×7 | 32 | 4×7 | 35 | 5×7 | 43 | 6.3×7 | 53 | 8×7* | 71 | 8×7 | 76 | | |
| 47 | 470 | 4×7 | 38 | 4×7 | 38 | 5×7* | 47 | 6.3×7* | 59 | 6.3×7 | 65 | 8×7 | 83 | 8×7 | 85 | | |
| 100 | 101 | 5×7 | 61 | 6.3×7* | 75 | 6.3×7 | 80 | 6.3×7 | 90 | 8×7 | 125 | | | | | | |
| 220 | 221 | 6.3×7 | 90 | 6.3×7 | 99 | 8×7 | 140 | 8×7 | 146 | | | | | | | | |
| 330 | 331 | 8×7 | 156 | 8×7 | 156 | | | | | | | | | | | | |

Note: Case size in mark of "*" is available to product down size.

Part Numbering System

| | | | | | | | |
|-------------|-------------|-----------------------|---------------|--------------------------------|-------------|-------------|---------------------------|
| SG Series | 330μF | ±20% | 6.3V | Bulk Package | Gas Type | 8 φ × 7L | Pb-free and PET sleeve |
| SG- | 331 | M | 0J | BK | - | 0807 | |
| Series Name | Capacitance | Capacitance Tolerance | Rated Voltage | Lead Configuration and Package | Rubber Type | Case Size | Lead Wire and Sleeve type |

Note: For more details, please refer to "Part Numbering System (Radial Type)" on page 13.

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