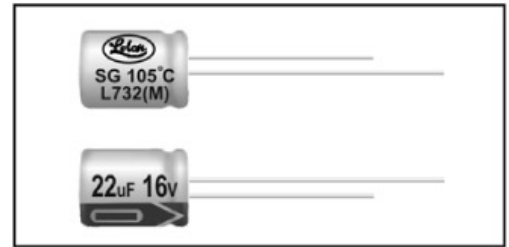
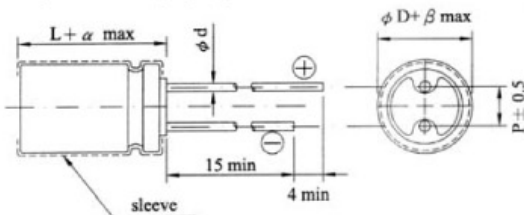


Feature

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


SPECIFICATIONS

| Items | Performance | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---------------|-----------|--------------------|------------------------------|--------------------|-----------------------------------|-----------------|------------------------|------|-------------|-----------------|-------------------|------|------------|------|------|------|------|------|---|-------------------|----|----|---|---|---|---|---|---|
| Operating Temperature Range | -40°C ~ +105°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Tolerance | ±20% (at 120Hz, 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation Factor (Tan δ at 120Hz, 20°C) | <table border="1"> <tr> <th>Rated Voltage</th> <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> </tr> <tr> <th>Tan δ (max)</th> <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> </table> | Rated Voltage | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | Tan δ (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 | | | | | | | | | | | | | | | | | | | | | | |
| Tan δ (max) | 0.35 | 0.23 | 0.20 | 0.17 | 0.15 | 0.12 | 0.10 | 0.10 | | | | | | | | | | | | | | | | | | | | | | |
| Low Temperature Characteristics (at 120Hz) | Impedance ratio shall not exceed the values given in the table below. <table border="1"> <tr> <th colspan="2">Rated Voltage</th> <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> </tr> <tr> <th rowspan="2">Impedance Ratio</th> <th>Z(-25°C)/Z(+20°C)</th> <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> <th>Z(-40°C)/Z(+20°C)</th> <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> </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 | | | | | | | | | | | | | | | | | | | | | |
| Load Life Test | <table border="1"> <tr> <th>Test Time</th> <td>1,000 hrs</td> </tr> <tr> <th>Capacitance Change</th> <td>Within ±20% of initial value</td> </tr> <tr> <th>Dissipation Factor</th> <td>Less than 200% of specified value</td> </tr> <tr> <th>Leakage Current</th> <td>Within specified value</td> </tr> </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 hrs at 105°C.</p> | Test Time | 1,000 hrs | Capacitance Change | Within ±20% of initial value | Dissipation Factor | Less than 200% of specified value | Leakage Current | Within specified value | | | | | | | | | | | | | | | | | | | | | |
| Test Time | 1,000 hrs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Change | Within ±20% of initial value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation Factor | Less than 200% of specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current | Within specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shelf Life Test | Test time: 500 hrs; other items are the same as those for the load life test. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ripple Current & Frequency Multipliers | <table border="1"> <tr> <th rowspan="2">Cap.(μF)</th> <th>Freq.(Hz)</th> <td>60 (50)</td> <td>120</td> <td>500</td> <td>1K</td> <td>10K up</td> </tr> <tr> <td>Under 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 to 330</td> <td>0.88</td> <td>1.00</td> <td>1.10</td> <td>1.15</td> <td>1.20</td> </tr> </table> | Cap.(μF) | Freq.(Hz) | 60 (50) | 120 | 500 | 1K | 10K up | Under 47 | 0.75 | 1.00 | 1.20 | 1.30 | 1.45 | 100 to 330 | 0.88 | 1.00 | 1.10 | 1.15 | 1.20 | | | | | | | | | | |
| Cap.(μF) | Freq.(Hz) | | 60 (50) | 120 | 500 | 1K | 10K up | | | | | | | | | | | | | | | | | | | | | | | |
| | Under 47 | 0.75 | 1.00 | 1.20 | 1.30 | 1.45 | | | | | | | | | | | | | | | | | | | | | | | | |
| 100 to 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 |
|-----|------|-----|-----|-----|
| φ D | 4 | 5 | 6.3 | 8 |
| P | 1.5 | 2.0 | 2.5 | 3.5 |
| φ d | 0.45 | 0.5 | | |
| α | 1.0 | | | |
| β | 0.5 | | | |

DIMENSION & PERMISSIBLE RIPPLE CURRENT

Dimension: φ D × L(mm)

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

| μF | V.DC Contents | 4V (0G) | | 6.3V (0J) | | 10V (1A) | | 16V (1C) | | 25V (1E) | | 35V (1V) | | 50V (1H) | | 63V (1J) | |
|------|---------------|---------|-----|-----------|-----|----------|-----|----------|-----|----------|-----|----------|----|----------|----|----------|-----|
| | | φ D×L | mA | φ D×L | mA | φ D×L | mA | φ D×L | mA | φ D×L | mA | φ D×L | mA | φ D×L | mA | φ D×L | mA |
| 0.1 | 0R1 | | | | | | | | | | | | | 4×7 | 2 | 4×7 | 2 |
| 0.22 | R22 | | | | | | | | | | | | | 4×7 | 3 | 4×7 | 3 |
| 0.33 | R33 | | | | | | | | | | | | | 4×7 | 4 | 4×7 | 4.4 |
| 0.47 | R47 | | | | | | | | | | | | | 4×7 | 5 | 4×7 | 7.9 |
| 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* | 26 |
| 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.