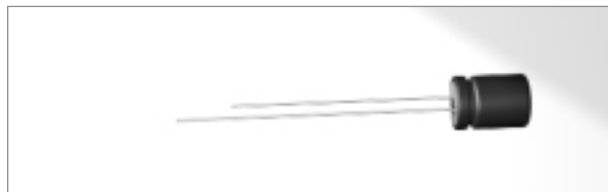


LSM Series 105 °C

Features

- 5.0 + 1 mm max height
- Load life 105 °C, 1000 hours assured
- For detail specifications, please refer to Engineering Bulletin No. E122



Specifications

| Item | Performance Characteristics | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|-----------------------|----|-----|----|----|----|----|----|-----------------|----|----|----|----|----|----|----|-----------------|----|---|---|---|---|---|---|
| Operating Temperature Range | -40 to +105 °C | | | | | | | | | | | | | | | | | | | | | | | | |
| Rated voltage Range | 4 to 50 VDC | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Range | 0.1 to 100 uF | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Tolerance | ±20 % (120 Hz, +20 °C) | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current (+20 °C, max.) | 1 ≤ 0.01 CV or 3 (uA) After 2 minutes whichever is greater measured with rated working voltage applied. | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation Factor (tan δ) | <table border="1"> <thead> <tr> <th>Working Voltage (VDC)</th> <th>4</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> </thead> <tbody> <tr> <td>D.F. (%) max</td> <td>37</td> <td>28</td> <td>24</td> <td>20</td> <td>16</td> <td>14</td> <td>12</td> </tr> </tbody> </table> (+ 20 °C, at 120 Hz) | Working Voltage (VDC) | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | D.F. (%) max | 37 | 28 | 24 | 20 | 16 | 14 | 12 | | | | | | | | |
| Working Voltage (VDC) | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | | | | | | | | | | | | | | | | | | |
| D.F. (%) max | 37 | 28 | 24 | 20 | 16 | 14 | 12 | | | | | | | | | | | | | | | | | | |
| Low Temperature Characteristics (120 Hz) | Impedance ratio max. <table border="1"> <thead> <tr> <th>Working Voltage (VDC)</th> <th>4</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> </thead> <tbody> <tr> <td>Z-25 °C/Z+20 °C</td> <td>6</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>8</td> <td>5</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table> | Working Voltage (VDC) | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | Z-25 °C/Z+20 °C | 6 | 3 | 3 | 2 | 2 | 2 | 2 | Z-40 °C/Z+20 °C | 12 | 8 | 5 | 4 | 3 | 3 | 3 |
| Working Voltage (VDC) | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | | | | | | | | | | | | | | | | | | |
| Z-25 °C/Z+20 °C | 6 | 3 | 3 | 2 | 2 | 2 | 2 | | | | | | | | | | | | | | | | | | |
| Z-40 °C/Z+20 °C | 12 | 8 | 5 | 4 | 3 | 3 | 3 | | | | | | | | | | | | | | | | | | |
| Load Life | Test conditions Duration time: 1000 Hrs Ambient temperature: +105 °C Applied voltage: Rated DC working voltage After test requirements: at + 20 % Capacitance change: ≤ 20% of the initial measured value (4V: ≤ ± 30 %) Dissipation Factor: ≤ 200 % of the initial measured value Leakage current: ≤ The initial specified value | | | | | | | | | | | | | | | | | | | | | | | | |
| Shelf Life | Test conditions Duration time: 500 Hrs Ambient temperature: + 105°C Applied voltage: None After test requirements at +20 °C: Some limits as Load life. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes. | | | | | | | | | | | | | | | | | | | | | | | | |

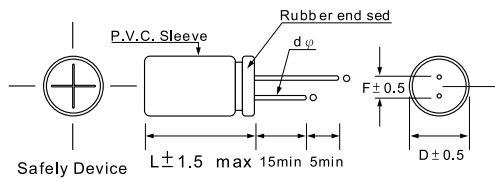
Multiplier for Ripple Current vs. Frequency

| CAP(uF)\Hz | | 50(60) | 120 | 1K | 10K≤ |
|------------|--------|--------|-----|------|------|
| Multiplier | 0.1~47 | 0.8 | 1 | 1.30 | 1.50 |
| | 100 | 0.8 | 1 | 1.15 | 1.20 |

Multiplier for Ripple Current vs. Temperature

| Temperature °C | 60 | 85 | 105 |
|----------------|-----|-----|------|
| Multiplier | 1.9 | 1.4 | 1.00 |

Diagram of Dimensions: (Unit: mm)



| | | | | | |
|----|---------|---------|---------|---------|---------|
| Dφ | 3 | 4 | 5 | 6.3 | 8 |
| F | 1.0±0.3 | 1.5±0.5 | 2.0±0.5 | 2.5±0.5 | 3.5±0.5 |
| dφ | 0.40 | 0.45 | | | 0.50 |

Case Size

φD x L (mm)

| UF | 4 V | 6.3 V | 10 V | 16 V | 25 V | 35 V | 50 V |
|------|-----|-------|------|------|------|------|------|
| 0.1 | | | | | | | 4X5 |
| 0.22 | | | | | | | 4X5 |
| 0.33 | | | | | | | 4X5 |
| 0.47 | | | | | | | 4X5 |
| 1 | | | | | | | 4X5 |
| 2.2 | | | | | | | 4X5 |
| 3.3 | | | | | | | 4X5 |
| 4.7 | | | | 4X5 | 4X5 | 4X5 | 4X5 |
| 10 | | | | 4X5 | 4X5 | 5X5 | 6X5 |
| 22 | | 4X5 | 4X5 | 4X5 | 5X5 | 6X5 | |
| 33 | 4X5 | 4X5 | 4X5 | 5X5 | 6X5 | | |
| 47 | 4X5 | 4X5 | 5X5 | 6X5 | 6X5 | | |
| 100 | 4X5 | 5X5 | 6X5 | 6X5 | 8X5 | | |
| 220 | 6X5 | 6X5 | 8X5 | 8X5 | | | |

Maximum Ripple Current

(mA, rms., 120 Hz at 105 °C)

| W.V. uF | 4 (5) | 6.3 (8) | 10 (13) | 16 (20) | 25 (32) | 35 (44) | 50 (63) |
|------------|-------|---------|---------|---------|---------|---------|---------|
| 0.1 | → | | | | | → | 1.0 |
| 0.22 | → | | | | | → | 2.0 |
| 0.33 | → | | | | | → | 2.8 |
| 0.47 | → | | | | | → | 4.0 |
| 1 | → | | | | | → | 8.0 |
| 2.2 | → | | | | → | 8.4 | 10 |
| 3.3 | → | | | → | 10 | 10 | 17 |
| 4.7 | → | | → | 10 | 12 | 18 | 20 |
| 10 | → | 15 | 28 | 18 | 27 | 29 | 30 |
| 22 | 19 | 21 | 33 | 35 | 42 | 46 | 48 |
| 33 | 28 | 37 | 39 | 42 | 52 | - | - |
| 47 | 33 | 38 | 46 | 58 | 62 | - | - |
| 100 | 38 | 60 | 76 | 86 | - | - | - |
| 220 | 60 | 90 | 90 | - | - | - | - |