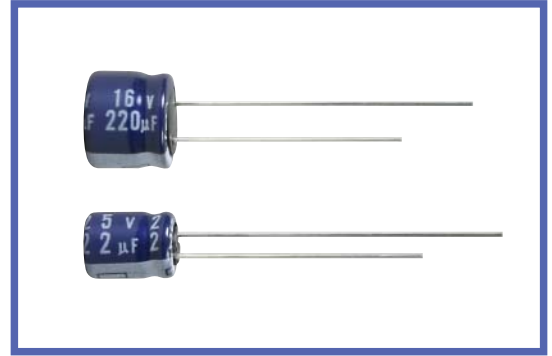


MS7 SERIES
85°C 7mm Height.
◆ FEATURES

- RoHS compliance.


◆ SPECIFICATIONS

| Items | Characteristics | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|--------------------|------------------------------------|--------------------|--|-----------------|------------------------------------|------|----|----|------------------|------|------|------|------|------|------|------|------|------------------|----|----|---|---|---|---|---|---|
| Category Temperature Range | -40 ~ +85°C | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rated Voltage Range | 4~63V.DC | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Tolerance | ± 20%(20°C, 120Hz) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current(MAX) | I=0.01CV or 3µA whichever is greater. (After 2 minutes application of rated voltage) I=Leakage Current(µA) C=Rated Capacitance(µF) V=Rated Voltage(V) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation Factor(MAX) (tanδ) | <table border="1"> <thead> <tr> <th>Rated Voltage (V)</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</td> <td>0.35</td> <td>0.24</td> <td>0.20</td> <td>0.17</td> <td>0.15</td> <td>0.13</td> <td>0.10</td> <td>0.10</td> </tr> </tbody> </table> (20°C, 120Hz) | Rated Voltage (V) | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | tanδ | 0.35 | 0.24 | 0.20 | 0.17 | 0.15 | 0.13 | 0.10 | 0.10 | | | | | | | | | |
| Rated Voltage (V) | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | | | | | | | | | | | | | | | | | | | | |
| tanδ | 0.35 | 0.24 | 0.20 | 0.17 | 0.15 | 0.13 | 0.10 | 0.10 | | | | | | | | | | | | | | | | | | | | |
| Endurance | After applying rated voltage with rated ripple current for 1000 hrs at 85°C, the capacitors shall meet the following requirements. <table border="1"> <tbody> <tr> <td>Capacitance Change</td> <td>Within ± 20% 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> </tbody> </table> | 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. | | | | | | | | | | | | | | | | | | | | | |
| 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. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low Temperature Stability Impedance Ratio(MAX) | <table border="1"> <thead> <tr> <th>Rated Voltage (V)</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>Z(-25°C)/Z(20°C)</td> <td>7</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>15</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> (120Hz) | Rated Voltage (V) | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | Z(-25°C)/Z(20°C) | 7 | 4 | 3 | 3 | 2 | 2 | 2 | 2 | Z(-40°C)/Z(20°C) | 15 | 10 | 8 | 6 | 4 | 4 | 4 | 4 |
| Rated Voltage (V) | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | | | | | | | | | | | | | | | | | | | | |
| Z(-25°C)/Z(20°C) | 7 | 4 | 3 | 3 | 2 | 2 | 2 | 2 | | | | | | | | | | | | | | | | | | | | |
| Z(-40°C)/Z(20°C) | 15 | 10 | 8 | 6 | 4 | 4 | 4 | 4 | | | | | | | | | | | | | | | | | | | | |

◆ MULTIPLIER FOR RIPPLE CURRENT

Frequency coefficient

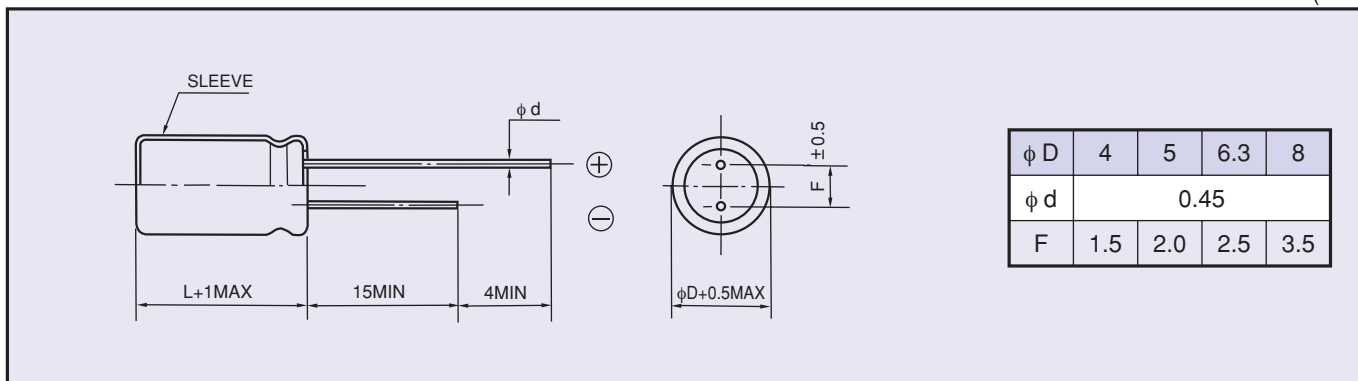
| Frequency (Hz) | | 60(50) | 120 | 500 | 1k | 10k≤ |
|----------------|-----------|--------|-----|------|------|------|
| Coefficient | 0.1~1µF | 0.50 | 1.0 | 1.20 | 1.30 | 1.50 |
| | 2.2~4.7µF | 0.65 | 1.0 | 1.20 | 1.30 | 1.50 |
| | 10~47µF | 0.8 | 1.0 | 1.20 | 1.30 | 1.50 |
| | 100~470µF | 0.8 | 1.0 | 1.10 | 1.15 | 1.20 |

◆ PART NUMBER

| | | | | | | |
|---------------|--------|-------------------|-----------------------|--------|--------------|-----------|
| □□□ | MS7 | □□□□□ | □ | □□□ | □□ | D×L |
| Rated Voltage | Series | Rated Capacitance | Capacitance Tolerance | Option | Lead Forming | Case Size |

◆ **DIMENSIONS**

(mm)



◆ **STANDARD SIZE**

Size φ D×L(mm), Ripple Current (mA r.m.s./85°C, 120Hz)

| Cap(μF) \ WV (V.DC) | 4 (0G) | | 6.3 (0J) | | 10 (1A) | | 16 (1C) | |
|---------------------|--------|--------|----------|--------|---------|--------|---------|--------|
| | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple |
| 10 | | | | | | | 4×7 | 28 |
| 22 | | | 4×7 | 34 | 4×7 | 38 | 4×7 | 42 |
| 33 | 4×7 | 33 | 4×7 | 42 | 4×7 | 46 | 5×7 | 62 |
| 47 | 4×7 | 39 | 4×7 | 50 | 5×7 | 66 | 5×7 | 73 |
| 100 | 5×7 | 65 | 5×7 | 87 | 6.3×7 | 99 | 6.3×7 | 110 |
| 220 | 6.3×7 | 110 | 6.3×7 | 133 | 8×7 | 165 | 8×7 | 145 |
| 330 | 8×7 | 165 | 8×7 | 180 | 8×7 | 210 | | |
| 470 | 8×7 | 190 | | | | | | |

| Cap(μF) \ WV (V.DC) | 25 (1E) | | 35 (1V) | | 50 (1H) | | 63 (1J) | |
|---------------------|---------|--------|---------|--------|---------|--------|---------|--------|
| | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple |
| 0.1 | | | | | 4×7 | 1.3 | 4×7 | 1.3 |
| 0.22 | | | | | 4×7 | 3.0 | 4×7 | 3.0 |
| 0.33 | | | | | 4×7 | 4.4 | 4×7 | 4.4 |
| 0.47 | | | | | 4×7 | 6.3 | 4×7 | 6.3 |
| 1 | | | | | 4×7 | 12 | 4×7 | 12 |
| 2.2 | | | | | 4×7 | 16 | 4×7 | 16 |
| 3.3 | | | 4×7 | 18 | 4×7 | 19 | 5×7 | 24 |
| 4.7 | 4×7 | 21 | 4×7 | 22 | 4×7 | 24 | 6.3×7 | 33 |
| 10 | 4×7 | 31 | 5×7 | 32 | 5×7 | 42 | 6.3×7 | 45 |
| 22 | 5×7 | 55 | 6.3×7 | 60 | 6.3×7 | 64 | | |
| 33 | 6.3×7 | 66 | 6.3×7 | 73 | 8×7 | 75 | | |
| 47 | 6.3×7 | 80 | 8×7 | 95 | 8×7 | 85 | | |
| 100 | 8×7 | 115 | 8×7 | 115 | | | | |