

SURFACE MOUNT ALUMINUM ELECTROLYTIC CAPACITORS



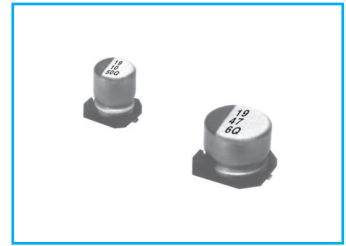
Upgrade

JM

Chip type, Long Life Series



Solvent Proof
WV ≤ 100V



- Long Life Compared with JC series
- Designed for surface mounting on high density PC board
- Applicable to automatic insertion machine using carrier tape
- Complied to the RoHS directive

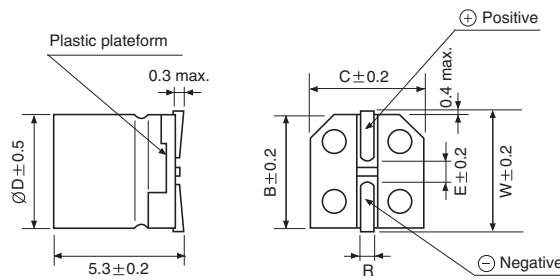
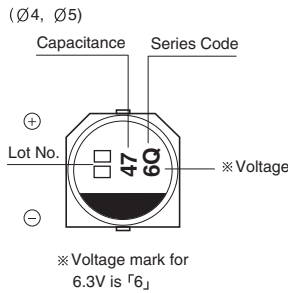
JC → JM
Long life

| Item | Characteristics | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|-----------------|---------------------------|--------------------|------------------------------|-----------|-----------------------------------|-----------|-----------|---------------|------|------|------|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Operating temperature range | -25 ~ +105°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage current max. | WV ≤ 100 I = 0.01CV or 3μA whichever is greater (after 2 minutes) WV ≥ 160 I = 0.04CV + 100μA (after 1 minutes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance tolerance | ±20% at 120Hz, 20°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation factor max. (at 120Hz, 20°C) | <table border="1"> <tr> <td>WV</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> <td>160</td> <td>200</td> <td>250</td> <td>400</td> <td>450</td> </tr> <tr> <td>tanδ</td> <td>0.32</td> <td>0.28</td> <td>0.21</td> <td>0.21</td> <td>0.18</td> <td>0.18</td> <td>0.12</td> <td>0.12</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.20</td> <td>0.20</td> </tr> </table> | WV | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 400 | 450 | tanδ | 0.32 | 0.28 | 0.21 | 0.21 | 0.18 | 0.18 | 0.12 | 0.12 | 0.15 | 0.15 | 0.15 | 0.20 | 0.20 |
| WV | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 400 | 450 | | | | | | | | | | | | | | | | |
| tanδ | 0.32 | 0.28 | 0.21 | 0.21 | 0.18 | 0.18 | 0.12 | 0.12 | 0.15 | 0.15 | 0.15 | 0.20 | 0.20 | | | | | | | | | | | | | | | | |
| Low temperature characteristics (Impedance ratio at 120Hz) | <table border="1"> <tr> <td>WV</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25 ~ 50</td> <td>63 ~ 100</td> <td>160 ~ 250</td> <td>400 ~ 450</td> </tr> <tr> <td>Z-25°C/Z+20°C</td> <td>8</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>6</td> </tr> </table> | WV | 6.3 | 10 | 16 | 25 ~ 50 | 63 ~ 100 | 160 ~ 250 | 400 ~ 450 | Z-25°C/Z+20°C | 8 | 8 | 6 | 4 | 3 | 3 | 6 | | | | | | | | | | | | |
| WV | 6.3 | 10 | 16 | 25 ~ 50 | 63 ~ 100 | 160 ~ 250 | 400 ~ 450 | | | | | | | | | | | | | | | | | | | | | | |
| Z-25°C/Z+20°C | 8 | 8 | 6 | 4 | 3 | 3 | 6 | | | | | | | | | | | | | | | | | | | | | | |
| Load life (after application of the rated voltage for 3000 hours at 105°C) | <table border="1"> <tr> <td>Leakage current</td> <td>Less than specified value</td> </tr> <tr> <td>Capacitance change</td> <td>Within ±30% of initial value</td> </tr> <tr> <td>tanδ</td> <td>Less than 300% of specified value</td> </tr> </table> | Leakage current | Less than specified value | Capacitance change | Within ±30% of initial value | tanδ | Less than 300% of specified value | | | | | | | | | | | | | | | | | | | | | | |
| Leakage current | Less than specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance change | Within ±30% of initial value | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tanδ | Less than 300% of specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shelf life (at 105°C) | After 1000 hours no load test, leakage current, capacitance and tanδ are same as load life value. The measurement shall be performed at 20°C by the KS C IEC 60384 - 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Resistance to soldering heat | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them at 250°C for 10 seconds. <table border="1"> <tr> <td>Leakage current</td> <td>Less than specified value</td> </tr> <tr> <td>Capacitance change</td> <td>Within ±10% of initial value</td> </tr> <tr> <td>tanδ</td> <td>Less than specified value</td> </tr> </table> | Leakage current | Less than specified value | Capacitance change | Within ±10% of initial value | tanδ | Less than specified value | | | | | | | | | | | | | | | | | | | | | | |
| Leakage current | Less than specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance change | Within ±10% of initial value | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tanδ | Less than specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

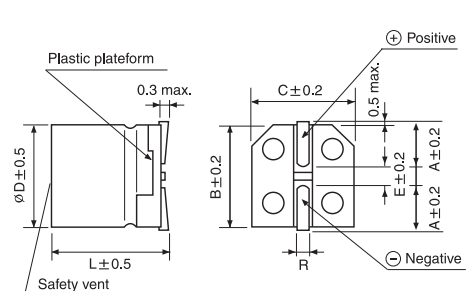
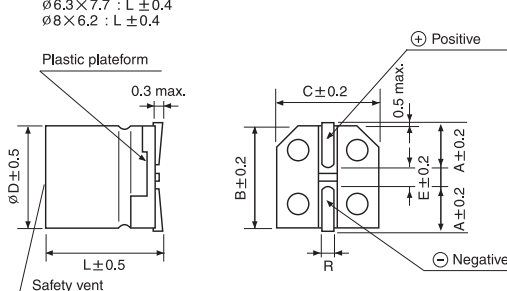
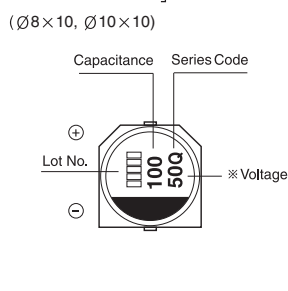
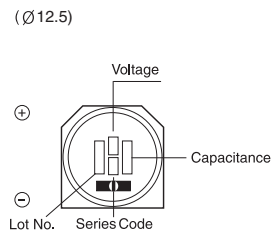
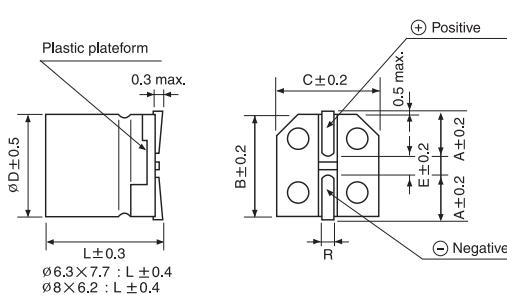
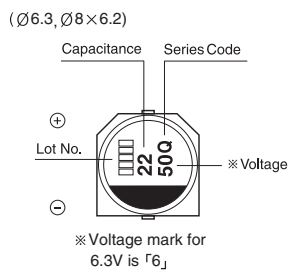
● DRAWING -Series code of JM is "Q"

Unit : mm

CHIP TYPES



| ∅D×L | W | A | B | C | E | R |
|-----------|-----|-----|------|------|-----|---------|
| 4×5.3 | 4.8 | | 4.3 | 4.3 | 1.0 | 0.5~0.8 |
| 5×5.3 | 5.8 | | 5.3 | 5.3 | 1.4 | 0.5~0.8 |
| 6.3×5.3 | | 2.4 | 6.6 | 6.6 | 2.2 | 0.5~0.8 |
| 6.3×5.8 | | 2.4 | 6.6 | 6.6 | 2.2 | 0.5~0.8 |
| 6.3×7.7 | | 2.4 | 6.6 | 6.6 | 2.2 | 0.5~0.8 |
| 8×6.2 | | 3.3 | 8.3 | 8.3 | 2.3 | 0.5~0.8 |
| 8×10 | | 2.9 | 8.3 | 8.3 | 3.1 | 0.8~1.1 |
| 10×10 | | 3.2 | 10.3 | 10.3 | 4.5 | 0.8~1.1 |
| 12.5×13.5 | | 4.6 | 12.8 | 12.8 | 4.5 | 1.1~1.4 |



SURFACE MOUNT ALUMINUM ELECTROLYTIC CAPACITORS

JM series

● DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

| μF \diagdown WV | 6.3 | | 10 | | 16 | | 25 | | 35 | |
|----------------------------|-----------|-----|-----------|-----|--|-----|-----------|-----|-----------|-----|
| 10 | 4×5.3 | 10 | 4×5.3 | 15 | 4×5.3 | 19 | 5×5.3 | 24 | 6.3×5.3 | 26 |
| 22 | 4×5.3 | 25 | 5×5.3 | 30 | 5×5.3 | 33 | 6.3×5.3 | 38 | 6.3×5.8 | 42 |
| 33 | 5×5.3 | 35 | 5×5.3 | 38 | 6.3×5.3 | 42 | 6.3×5.8 | 48 | 8×6.2 | 76 |
| 47 | 5×5.3 | 42 | 6.3×5.3 | 52 | 6.3×5.8 | 60 | 8×6.2 | 79 | 8×10 | 124 |
| 100 | 6.3×5.8 | 60 | 6.3×5.8 | 60 | 8×10 | 148 | 8×10 | 181 | 10×10 | 310 |
| 220 | 8×10 | 161 | 8×10 | 173 | 10×10 | 330 | 10×10 | 351 | 10×10 | 480 |
| 330 | 8×10 | 288 | 10×10 | 318 | 10×10 | 441 | 10×10 | 372 | 12.5×13.5 | 500 |
| 470 | 10×10 | 340 | 10×10 | 351 | 10×10 | 489 | 10×10 | 450 | 12.5×13.5 | 600 |
| 680 | 10×10 | 408 | 10×10 | 392 | 12.5×13.5 | 500 | 12.5×13.5 | 500 | | |
| 1000 | 10×10 | 495 | 10×10 | 550 | 12.5×13.5 | 600 | | | | |
| 1500 | 10×10 | 560 | 12.5×13.5 | 650 | Ripple current (mA rms) at 105°C, 120Hz Case size $\varnothing D \times L$ (mm) | | | | | |
| 2200 | 12.5×13.5 | 730 | | | | | | | | |

| μF \diagdown WV | 50 | | 63 | | 100 | |
|----------------------------|-----------|-----|-----------|-----|-----------|-----|
| 10 | 6.3×5.8 | 30 | 8×6.2 | 32 | | |
| 22 | 8×6.2 | 67 | 8×10 | 60 | 8×10 | 90 |
| 33 | 8×10 | 133 | 8×10 | 110 | 10×10 | 120 |
| 47 | 10×10 | 180 | 10×10 | 130 | 12.5×13.5 | 250 |
| 68 | 10×10 | 200 | 10×10 | 160 | 12.5×13.5 | 300 |
| 100 | 10×10 | 310 | 12.5×13.5 | 270 | | |
| 220 | 12.5×13.5 | 480 | | | | |

| μF \diagdown WV | 160 | | 200 | | 250 | | 400 | | 450 | |
|----------------------------|--|----|-----------|----|-----------|----|-----------|----|-----------|----|
| 3.3 | | | | | 10×10 | 30 | 12.5×13.5 | 30 | 12.5×13.5 | 40 |
| 4.7 | | | 10×10 | 45 | 12.5×13.5 | 65 | | | | |
| 10 | 10×10 | 45 | 12.5×13.5 | 75 | | | | | | |
| 22 | 12.5×13.5 | 85 | 12.5×13.5 | 85 | | | | | | |
| 33 | 12.5×13.5 | 95 | | | | | | | | |
| 47 | Ripple current (mA rms) at 105°C, 120Hz Case size $\varnothing D \times L$ (mm) | | | | | | | | | |
| 68 | | | | | | | | | | |
| 100 | | | | | | | | | | |

● FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

| Frequency | 50Hz | 120Hz | 300Hz | 1kHz | 10kHz \leq |
|-------------|------|-------|-------|------|--------------|
| Coefficient | 0.70 | 1.00 | 1.17 | 1.36 | 1.50 |