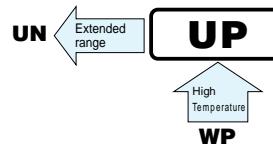


6mmL Chip Type, Bi-Polarized
series

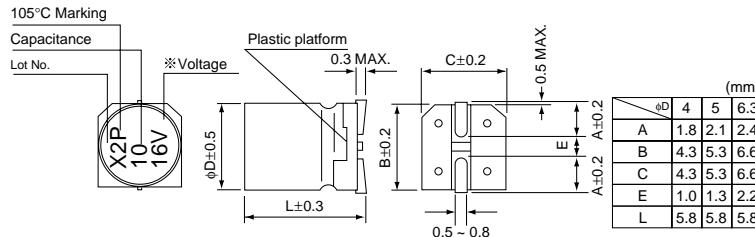
- Chip type, bi-polarized withstanding high temperature range up to +105°C.
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine using carrier tape.



■ Specifications

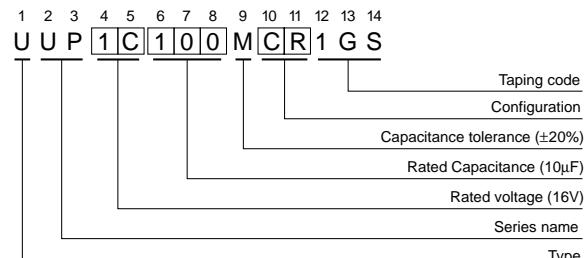
| Item | Performance Characteristics | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------|--|------|------|------|------|------|--|--------------------|------------------------------|-------|---|-----------------|---------------------------------|----|---------------------------------|------|------|------|------|------|------|---------------------------------|---|---|---|---|---|---|
| Category Temperature Range | -55 ~ +105°C | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rated Voltage Range | 6.3 ~ 50V | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rated Capacitance Range | 0.1 ~ 47μF | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Tolerance | ±20% at 120Hz, 20°C | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current | After 2 minutes' application of rated voltage, leakage current is not more than 0.05 CV or 10 (μA), whichever is greater. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tan δ | <table border="1"> <thead> <tr> <th>Rated voltage (V)</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>tan δ (MAX.)</td> <td>0.24</td> <td>0.20</td> <td>0.17</td> <td>0.17</td> <td>0.15</td> <td>0.15</td> </tr> </tbody> </table> | | | | | | | Rated voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | tan δ (MAX.) | 0.24 | 0.20 | 0.17 | 0.17 | 0.15 | 0.15 | | | | | | | |
| Rated voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | | | | | | | | | | | | | | | | | | | | | | |
| tan δ (MAX.) | 0.24 | 0.20 | 0.17 | 0.17 | 0.15 | 0.15 | | | | | | | | | | | | | | | | | | | | | | |
| Stability at Low Temperature | <table border="1"> <thead> <tr> <th>Rated voltage (V)</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>Impedance ratio Z-25°C / Z+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>ZT / Z20 (MAX.) Z-40°C / Z+20°C</td> <td>8</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> </tr> </tbody> </table> | | | | | | | Rated voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | Impedance ratio Z-25°C / Z+20°C | 4 | 3 | 2 | 2 | 2 | 2 | ZT / Z20 (MAX.) Z-40°C / Z+20°C | 8 | 6 | 4 | 4 | 3 | 3 |
| Rated voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | | | | | | | | | | | | | | | | | | | | | | |
| Impedance ratio Z-25°C / Z+20°C | 4 | 3 | 2 | 2 | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | |
| ZT / Z20 (MAX.) Z-40°C / Z+20°C | 8 | 6 | 4 | 4 | 3 | 3 | | | | | | | | | | | | | | | | | | | | | | |
| Endurance | <p>After 1000 hours' application of rated voltage at 105°C with the polarity inverted every 250 hours, capacitors meet the characteristic requirements listed at right.</p> <table border="1"> <thead> <tr> <th>Capacitance change</th> <th>Within ±20% of initial value</th> </tr> </thead> <tbody> <tr> <td>tan δ</td> <td>200% or less of initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Initial specified value or less</td> </tr> </tbody> </table> | | | | | | | Capacitance change | Within ±20% of initial value | tan δ | 200% or less of initial specified value | Leakage current | Initial specified value or less | | | | | | | | | | | | | | | |
| Capacitance change | Within ±20% of initial value | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tan δ | 200% or less of initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage current | Initial specified value or less | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shelf Life | After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for endurance characteristics listed above. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Resistance to soldering heat | The capacitors shall be kept on the hot plate maintained at 250°C for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the characteristic requirements listed at right. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Marking | Black print on the case top. | | | | | | | | | | | | | | | | | | | | | | | | | | | |

■ Chip Type



※ Voltage mark for 6.3V is 6V.

Type numbering system (Example : 16V 10μF)



• The lead-free product is also available upon request.
In this case, [] will be put at 11th digit of type numbering system.

■ Dimensions

| Cap.(μF) | Code | 6.3 | | 10 | | 16 | | 25 | | 35 | | 50 | |
|----------|------|-----|----|-----|----|-----|-----|----|-----|-----|-----|-----------------------|-----------------|
| | | 0J | 1A | 1C | 1E | 1V | 1H | | | | | | |
| 0.1 | 0R1 | | | | | | | | | | | 4 | 1.0 |
| 0.22 | R22 | | | | | | | | | | | 4 | 2.0 |
| 0.33 | R33 | | | | | | | | | | | 4 | 2.8 |
| 0.47 | R47 | | | | | | | | | | | 4 | 4.0 |
| 1 | 010 | | | | | | | | | | | 4 | 8.4 |
| 2.2 | 2R2 | | | | | | | | | 4 | 8.4 | 5 | 13 |
| 3.3 | 3R3 | | | | | 5 | 12 | 5 | 16 | 5 | 16 | 5 | 17 |
| 4.7 | 4R7 | | | 4 | 12 | 5 | 16 | 5 | 18 | 6.3 | 20 | | |
| 10 | 100 | | 4 | 17 | 5 | 23 | 6.3 | 27 | 6.3 | 29 | | | |
| 22 | 220 | 5 | 28 | 6.3 | 33 | 6.3 | 37 | | | | | | |
| 33 | 330 | 6.3 | 37 | 6.3 | 41 | 6.3 | 49 | | | | | | |
| 47 | 470 | 6.3 | 45 | | | | | | | | | Case size Φ D (mm) | Rated ripple |

Rated Ripple (mA rms) at 105°C 120Hz

■ Frequency coefficient of rated ripple current

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

- Taping specifications are given in page 22.
- Recommended land size are given in page 23
- Please refer to page 3 for the minimum order quantity.