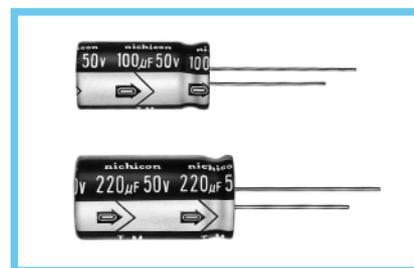


TM Timer Circuit Use series



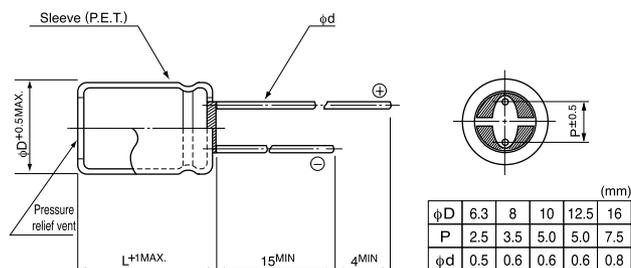
- Ideally suited for timer circuits.
- Excellent leakage current stability, even subjected to load or no load at high temperature for a long time.
- Adapted to the RoHS directive (2002/95/EC).



Specifications

| Item | Performance Characteristics | | | | | | | | | | | | | | | |
|---------------------------------|--|--------------------|------------------------------|-------|---|-----------------|---------------------------------|------|------|------|------|-----------------|-----------------|---|---|---|
| Category Temperature Range | -40 ~ +85°C | | | | | | | | | | | | | | | |
| Rated Voltage Range | 10 ~ 50V | | | | | | | | | | | | | | | |
| Rated Capacitance Range | 1 ~ 470µF | | | | | | | | | | | | | | | |
| Capacitance Tolerance | ±20% (M) (±10% (K) semi-standard) at 120Hz, 20°C | | | | | | | | | | | | | | | |
| Leakage Current | After 2 minutes' application of rated voltage, leakage current is 0.001CV+1 (µA) or less. | | | | | | | | | | | | | | | |
| tan δ | Measurement frequency : 120Hz, Temperature : 20°C | | | | | | | | | | | | | | | |
| | <table border="1"> <tr> <td>Rated voltage (V)</td> <td>10</td> <td>16</td> <td>25</td> <td>50</td> </tr> <tr> <td>tan δ (MAX.)</td> <td>0.17</td> <td>0.13</td> <td>0.10</td> <td>0.08</td> </tr> </table> | Rated voltage (V) | 10 | 16 | 25 | 50 | tan δ (MAX.) | 0.17 | 0.13 | 0.10 | 0.08 | | | | | |
| Rated voltage (V) | 10 | 16 | 25 | 50 | | | | | | | | | | | | |
| tan δ (MAX.) | 0.17 | 0.13 | 0.10 | 0.08 | | | | | | | | | | | | |
| Stability at Low Temperature | Measurement frequency : 120Hz | | | | | | | | | | | | | | | |
| | <table border="1"> <tr> <td>Rated voltage (V)</td> <td>10</td> <td>16</td> <td>25</td> <td>50</td> </tr> <tr> <td>Impedance ratio Z-25°C / Z+20°C</td> <td>2</td> <td>2</td> <td>1.5</td> <td>1.5</td> </tr> <tr> <td>ZT / Z20 (MAX.)</td> <td>Z-40°C / Z+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> </tr> </table> | Rated voltage (V) | 10 | 16 | 25 | 50 | Impedance ratio Z-25°C / Z+20°C | 2 | 2 | 1.5 | 1.5 | ZT / Z20 (MAX.) | Z-40°C / Z+20°C | 4 | 3 | 2 |
| Rated voltage (V) | 10 | 16 | 25 | 50 | | | | | | | | | | | | |
| Impedance ratio Z-25°C / Z+20°C | 2 | 2 | 1.5 | 1.5 | | | | | | | | | | | | |
| ZT / Z20 (MAX.) | Z-40°C / Z+20°C | 4 | 3 | 2 | 2 | | | | | | | | | | | |
| Endurance | After 2000 hours' application of rated voltage at 85°C, capacitors meet the characteristics requirements listed at right. | | | | | | | | | | | | | | | |
| | <table border="1"> <tr> <td>Capacitance change</td> <td>Within ±10% of initial value</td> </tr> <tr> <td>tan δ</td> <td>150% or less of initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Initial specified value or less</td> </tr> </table> | Capacitance change | Within ±10% of initial value | tan δ | 150% or less of initial specified value | Leakage current | Initial specified value or less | | | | | | | | | |
| Capacitance change | Within ±10% of initial value | | | | | | | | | | | | | | | |
| tan δ | 150% or less of initial specified value | | | | | | | | | | | | | | | |
| Leakage current | Initial specified value or less | | | | | | | | | | | | | | | |
| Shelf Life | After storing the capacitors under no load at 85°C for 1000 hours, and after performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they will meet the specified value for endurance characteristics listed above. | | | | | | | | | | | | | | | |
| Marking | Printed with white color letter on black sleeve. | | | | | | | | | | | | | | | |

Radial Lead Type

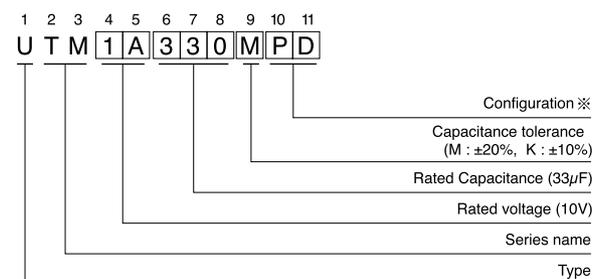


● Please refer to page 21 about the end seal configuration.

Dimensions

| V | | φD × L (mm) | | | | |
|-----------|------|-------------|-----------|-----------|-----------|--|
| Cap. (µF) | Code | 10 | 16 | 25 | 50 | |
| | | 1A | 1C | 1E | 1H | |
| 1 | 010 | | | | 6.3 × 11 | |
| 2.2 | 2R2 | | | | 6.3 × 11 | |
| 3.3 | 3R3 | | | 6.3 × 11 | 6.3 × 11 | |
| 4.7 | 4R7 | | | 6.3 × 11 | 8 × 11.5 | |
| 10 | 100 | | 6.3 × 11 | 8 × 11.5 | 10 × 12.5 | |
| 22 | 220 | 6.3 × 11 | 8 × 11.5 | 10 × 12.5 | 10 × 16 | |
| 33 | 330 | 8 × 11.5 | 10 × 12.5 | 10 × 16 | 10 × 20 | |
| 47 | 470 | 8 × 11.5 | 10 × 12.5 | 10 × 16 | 12.5 × 20 | |
| 100 | 101 | 10 × 16 | 10 × 20 | 12.5 × 20 | 12.5 × 25 | |
| 220 | 221 | 10 × 20 | 12.5 × 25 | 16 × 25 | 16 × 31.5 | |
| 330 | 331 | 12.5 × 25 | 16 × 25 | 16 × 25 | | |
| 470 | 471 | 12.5 × 25 | 16 × 25 | 16 × 31.5 | | |

Type numbering system (Example : 10V 33µF)



※ Configuration

| φ D | Pb-free leadwire Pb-free PET sleeve |
|-----------|--|
| 6.3 | ED |
| 8 · 10 | PD |
| 12.5 · 16 | HD |

Please refer to page 21, 22, 23 about the formed or taped product spec.
 Please refer to page 3 for the minimum order quantity.