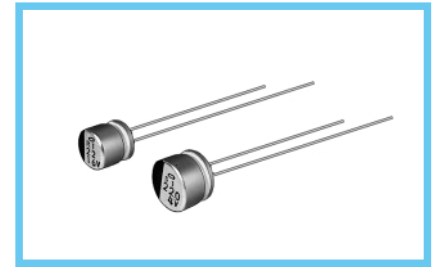
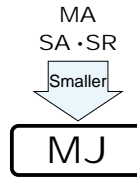


**MJ** 5.2mmL MAX.  
series



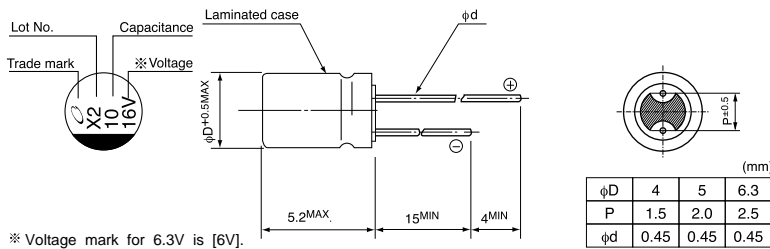
- 5.2mmL MAX. height.
- Adapted to the RoHS directive (2002/95/EC).



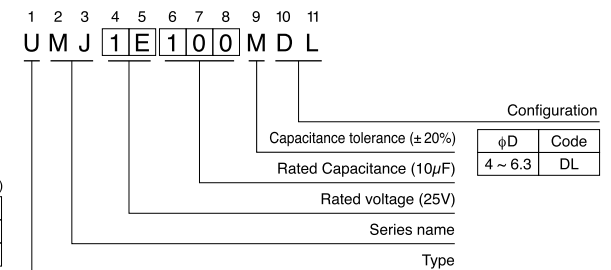
## Specifications

| Item                            | Performance Characteristics   |                    |                              |       |   |                 |                                 |    |    |              |                                 |      |      |      |      |      |      |   |   |                 |                 |    |   |   |   |   |   |
|---------------------------------|---|--------------------|------------------------------|-------|---|-----------------|---------------------------------|----|----|--------------|---------------------------------|------|------|------|------|------|------|---|---|-----------------|-----------------|----|---|---|---|---|---|
| Category Temperature Range      | -40 ~ +85°C   |                    |                              |       |   |                 |                                 |    |    |              |                                 |      |      |      |      |      |      |   |   |                 |                 |    |   |   |   |   |   |
| Rated Voltage Range             | 4 ~ 50V   |                    |                              |       |   |                 |                                 |    |    |              |                                 |      |      |      |      |      |      |   |   |                 |                 |    |   |   |   |   |   |
| Rated Capacitance Range         | 0.1 ~ 220μF   |                    |                              |       |   |                 |                                 |    |    |              |                                 |      |      |      |      |      |      |   |   |                 |                 |    |   |   |   |   |   |
| Capacitance Tolerance           | ±20% at 120Hz, 20°C   |                    |                              |       |   |                 |                                 |    |    |              |                                 |      |      |      |      |      |      |   |   |                 |                 |    |   |   |   |   |   |
| Leakage Current                 | After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3 (μA), whichever is greater.   |                    |                              |       |   |                 |                                 |    |    |              |                                 |      |      |      |      |      |      |   |   |                 |                 |    |   |   |   |   |   |
| tan δ                           | Measurement frequency : 120Hz, Temperature : 20°C   |                    |                              |       |   |                 |                                 |    |    |              |                                 |      |      |      |      |      |      |   |   |                 |                 |    |   |   |   |   |   |
|                                 | <table border="1"> <tr> <td>Rated voltage (V)</td> <td>4</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>tan δ (MAX.)</td> <td>0.35</td> <td>0.26</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.12</td> </tr> </table>  | Rated voltage (V)  | 4                            | 6.3   | 10                                      | 16              | 25                              | 35 | 50 | tan δ (MAX.) | 0.35                            | 0.26 | 0.20 | 0.16 | 0.14 | 0.12 | 0.12 |   |   |                 |                 |    |   |   |   |   |   |
| Rated voltage (V)               | 4   | 6.3                | 10                           | 16    | 25                                      | 35              | 50                              |    |    |              |                                 |      |      |      |      |      |      |   |   |                 |                 |    |   |   |   |   |   |
| tan δ (MAX.)                    | 0.35  | 0.26               | 0.20                         | 0.16  | 0.14                                    | 0.12            | 0.12                            |    |    |              |                                 |      |      |      |      |      |      |   |   |                 |                 |    |   |   |   |   |   |
| Stability at Low Temperature    | Measurement frequency : 120Hz   |                    |                              |       |   |                 |                                 |    |    |              |                                 |      |      |      |      |      |      |   |   |                 |                 |    |   |   |   |   |   |
|                                 | <table border="1"> <tr> <td colspan="2">Rated voltage (V)</td> <td>4</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>Impedance ratio Z-25°C / Z+20°C</td> <td></td> <td>7</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.)</td> <td>Z-40°C / Z+20°C</td> <td>15</td> <td>8</td> <td>8</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> </tr> </table> | Rated voltage (V)  |                              | 4     | 6.3                                     | 10              | 16                              | 25 | 35 | 50           | Impedance ratio Z-25°C / Z+20°C |      | 7    | 4    | 3    | 2    | 2    | 2 | 2 | ZT / Z20 (MAX.) | Z-40°C / Z+20°C | 15 | 8 | 8 | 4 | 4 | 3 |
| Rated voltage (V)               |   | 4                  | 6.3                          | 10    | 16                                      | 25              | 35                              | 50 |    |              |                                 |      |      |      |      |      |      |   |   |                 |                 |    |   |   |   |   |   |
| Impedance ratio Z-25°C / Z+20°C |   | 7                  | 4                            | 3     | 2                                       | 2               | 2                               | 2  |    |              |                                 |      |      |      |      |      |      |   |   |                 |                 |    |   |   |   |   |   |
| ZT / Z20 (MAX.)                 | Z-40°C / Z+20°C   | 15                 | 8                            | 8     | 4                                       | 4               | 3                               | 3  |    |              |                                 |      |      |      |      |      |      |   |   |                 |                 |    |   |   |   |   |   |
| Endurance                       | After 1000 hours' application of rated voltage at 85°C, capacitors meet the characteristic requirements listed at right.  |                    |                              |       |   |                 |                                 |    |    |              |                                 |      |      |      |      |      |      |   |   |                 |                 |    |   |   |   |   |   |
|                                 | <table border="1"> <tr> <td>Capacitance change</td> <td>Within ±20% of initial value</td> </tr> <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> </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 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                         | Black print on the case top.  |                    |                              |       |   |                 |                                 |    |    |              |                                 |      |      |      |      |      |      |   |   |                 |                 |    |   |   |   |   |   |

## Radial Lead Type



## Type numbering system (Example : 25V 10μF)



## Dimensions

| Cap. (μF) | Code | 4   |    | 6.3 |    | 10  |    | 16  |    | 25  |    | 35  |    | 50                |              |
|-----------|------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-------------------|--------------|
|           |      | 0G  | 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                 | 13           |
| 3.3       | 3R3  |     |    |     |    |     |    |     |    |     |    |     |    | 4                 | 17           |
| 4.7       | 4R7  |     |    |     |    |     |    |     |    |     |    |     |    | 4                 | 20           |
| 10        | 100  |     |    |     |    |     |    |     |    | 4   | 16 | 4   | 18 | 5                 | 20           |
| 22        | 220  |     |    | 4   | 28 | 5   | 33 | 5   | 37 | 5   | 27 | 5   | 29 | 6.3               | 33           |
| 33        | 330  | 4   | 28 | 5   | 37 | 5   | 41 | 6.3 | 49 | 6.3 | 42 | 6.3 | 46 |                   |              |
| 47        | 470  | 4   | 33 | 5   | 45 | 6.3 | 52 | 6.3 | 58 |     |    |     |    |                   |              |
| 100       | 101  | 5   | 56 | 6.3 | 70 |     |    |     |    |     |    |     |    |                   |              |
| 220       | 221  | 6.3 | 96 |     |    |     |    |     |    |     |    |     |    | Case size φD (mm) | Rated ripple |

Rated Ripple (mArms) at 85°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     |

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