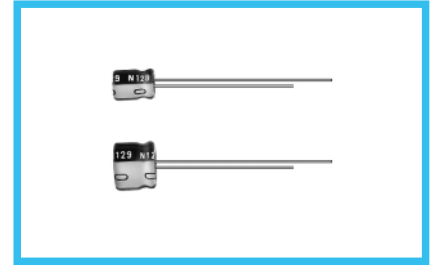
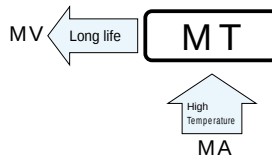


# MT series

5mmL, Wide Temperature Range



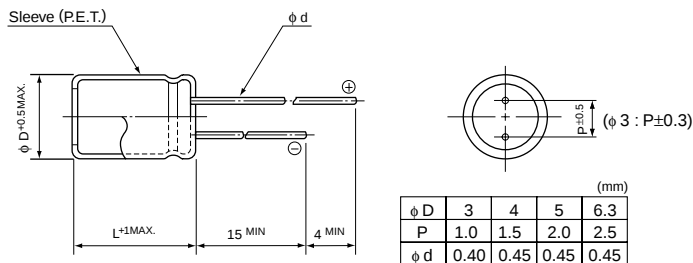
- Wide temperature range of -55 to +105°C, with 5mm height.
- Compliant to the RoHS directive (2011/65/EU).



## Specifications

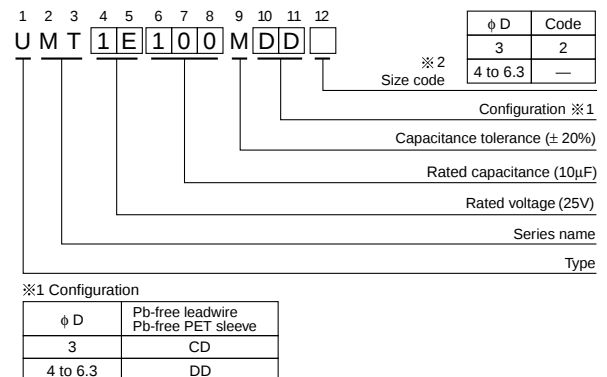
| Item                          | Performance Characteristics                                                                                                                                                                                                             |                 |                    |      |                                                                                                                               |             |             |    |                                     |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|------|-------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|----|-------------------------------------|
| Category Temperature Range    | -55 to +105°C                                                                                                                                                                                                                           |                 |                    |      |                                                                                                                               |             |             |    |                                     |
| Voltage Range                 | 4 to 50V                                                                                                                                                                                                                                |                 |                    |      |                                                                                                                               |             |             |    |                                     |
| Rated Capacitance Range       | 0.1 to 100μF                                                                                                                                                                                                                            |                 |                    |      |                                                                                                                               |             |             |    |                                     |
| Rated 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.                                                                                                                 |                 |                    |      |                                                                                                                               |             |             |    |                                     |
| Tangent of loss angle (tan δ) | Measurement frequency : 120Hz at 20°C                                                                                                                                                                                                   |                 |                    |      |                                                                                                                               |             |             |    |                                     |
|                               | Rated voltage (V)                                                                                                                                                                                                                       | 4               | 6.3                | 10   | 16                                                                                                                            | 25          | 35          | 50 | Figures in ( ) are for ϕ 3 product. |
| tan δ (MAX.)                  | 0.37                                                                                                                                                                                                                                    | 0.28            | 0.24               | 0.20 | 0.16                                                                                                                          | 0.13 (0.14) | 0.12 (0.14) |    |                                     |
| Stability at Low Temperature  | Measurement frequency : 120Hz                                                                                                                                                                                                           |                 |                    |      |                                                                                                                               |             |             |    |                                     |
|                               | Rated voltage (V)                                                                                                                                                                                                                       |                 | 4                  | 6.3  | 10                                                                                                                            | 16          | 25          | 35 | 50                                  |
|                               | Impedance ratio                                                                                                                                                                                                                         | Z-25°C / Z+20°C | 6                  | 3    | 3                                                                                                                             | 2           | 2           | 2  | 2                                   |
|                               | ZT / Z20 (MAX.)                                                                                                                                                                                                                         | Z-40°C / Z+20°C | 12                 | 8    | 5                                                                                                                             | 4           | 3           | 3  | 3                                   |
| Endurance                     | The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 105°C.                                                                                    |                 | Capacitance change |      | Within ±25% of the initial capacitance value (ϕ 3mm unit, and ≤ 16V)<br>Within ±20% of the initial capacitance value ( ≥ 25V) |             |             |    |                                     |
|                               |                                                                                                                                                                                                                                         |                 | tan δ              |      | 200% or less than the initial specified value                                                                                 |             |             |    |                                     |
|                               |                                                                                                                                                                                                                                         |                 | Leakage current    |      | Less than or equal to the initial specified value                                                                             |             |             |    |                                     |
| Shelf Life                    | After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above. |                 |                    |      |                                                                                                                               |             |             |    |                                     |
| Marking                       | Printed with white color letter on black sleeve.                                                                                                                                                                                        |                 |                    |      |                                                                                                                               |             |             |    |                                     |

## Radial Lead Type



- Please refer to page 20 about the end seal configuration.

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



※2 For φ 3mm unit, place size code of 2 to 12th digit.

## Dimensions

| Cap.(μF) | V<br>Code | 4     |    | 6.3   |    | 10    |    | 16    |         | 25    |         | 35      |        | 50                      |                 |
|----------|-----------|-------|----|-------|----|-------|----|-------|---------|-------|---------|---------|--------|-------------------------|-----------------|
|          |           | 0G    |    | 0J    |    | 1A    |    | 1C    |         | 1E    |         | 1V      |        | 1H                      |                 |
| 0.1      | 0R1       |       |    |       |    |       |    |       |         |       |         |         |        | • 4×5                   | 1.0             |
| 0.22     | R22       |       |    |       |    |       |    |       |         |       |         |         |        | • 4×5                   | 2.6             |
| 0.33     | R33       |       |    |       |    |       |    |       |         |       |         |         |        | • 4×5                   | 3.2             |
| 0.47     | R47       |       |    |       |    |       |    |       |         |       |         |         |        | • 4×5                   | 3.8             |
| 1        | 010       |       |    |       |    |       |    |       |         |       |         |         |        | • 4×5                   | 6.2 (5.9)       |
| 2.2      | 2R2       |       |    |       |    |       |    |       |         |       |         | 3 × 5   | 7.5    | • 4×5                   | 11 (9)          |
| 3.3      | 3R3       |       |    |       |    |       |    |       |         |       |         | • 4 × 5 | 11 (9) | 4 × 5                   | 14              |
| 4.7      | 4R7       |       |    |       |    |       |    |       |         | • 4×5 | 13 (10) | 4 × 5   | 15     | 5 × 5                   | 19              |
| 10       | 100       |       |    |       |    |       |    | • 4×5 | 18 (14) | 5×5   | 23      | 5×5     | 25     | 6.3×5                   | 30              |
| 22       | 220       | 4×5   | 22 | 4×5   | 22 | 5×5   | 27 | 5×5   | 30      | 6.3×5 | 38      | 6.3×5   | 48     |                         |                 |
| 33       | 330       | 5×5   | 30 | 5×5   | 30 | 5×5   | 35 | 6.3×5 | 40      | 6.3×5 | 48      |         |        |                         |                 |
| 47       | 470       | 5×5   | 36 | 5×5   | 36 | 6.3×5 | 46 | 6.3×5 | 50      |       |         |         |        |                         |                 |
| 100      | 101       | 6.3×5 | 60 | 6.3×5 | 60 |       |    |       |         |       |         |         |        | Case size<br>φ D×L (mm) | Rated<br>ripple |

Size φ3×5 is available for capacitors marked "•"  
Figures in ( ) are for φ 3 product.

Rated ripple current (mArms) at 105°C 120Hz

## Frequency coefficient of rated ripple current

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

Please refer to page 20, 21, 22 about the formed or taped product spec.  
Please refer to page 4 for the minimum order quantity.