

# UUT

6mmL Chip Type, Wide Temperature Range



For SMD



Anti-Solvent Feature

- Chip type with load life 2000 hours at +105°C.
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2011/65/EU, (EU)2015/863).
- AEC-Q200 compliant. Please contact us for details.

Products which are scheduled to be discontinued.  
Not recommended for new designs.

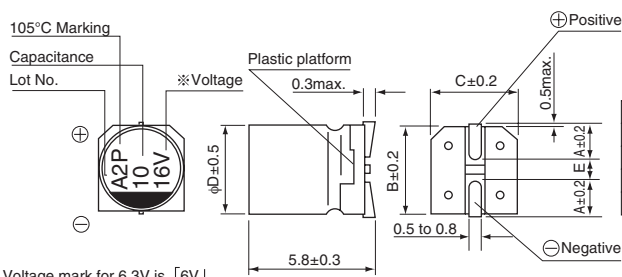


## Specifications

| Item                          | Performance Characteristics                                                                                                                                                                                                             |                     |             |            |                    |            |                                                                                                                          |            |    |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------|------------|--------------------|------------|--------------------------------------------------------------------------------------------------------------------------|------------|----|
| Category Temperature Range    | -55 to +105°C                                                                                                                                                                                                                           |                     |             |            |                    |            |                                                                                                                          |            |    |
| Rated Voltage Range           | 4 to 50V                                                                                                                                                                                                                                |                     |             |            |                    |            |                                                                                                                          |            |    |
| Rated Capacitance Range       | 1 to 100μF                                                                                                                                                                                                                              |                     |             |            |                    |            |                                                                                                                          |            |    |
| Capacitance Tolerance         | ±20% at 120Hz, 20°C                                                                                                                                                                                                                     |                     |             |            |                    |            |                                                                                                                          |            |    |
| Leakage Current ※             | After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01 CV or 3 (μA) , whichever is greater.                                                                                                       |                     |             |            |                    |            |                                                                                                                          |            |    |
| Tangent of loss angle (tan δ) | Measurement frequency : 120Hz at 20°C                                                                                                                                                                                                   |                     |             |            |                    |            |                                                                                                                          |            |    |
|                               | Rated voltage (V)<br>tan δ (max.)                                                                                                                                                                                                       | 4<br>0.37           | 6.3<br>0.28 | 10<br>0.24 | 16<br>0.20         | 25<br>0.16 | 35<br>0.13                                                                                                               | 50<br>0.12 |    |
| Stability at Low Temperature  | Measurement frequency : 120Hz                                                                                                                                                                                                           |                     |             |            |                    |            |                                                                                                                          |            |    |
|                               | Rated voltage (V)                                                                                                                                                                                                                       |                     | 4           | 6.3        | 10                 | 16         | 25                                                                                                                       | 35         | 50 |
|                               | Impedance ratio<br>ZT / Z20 (max.)                                                                                                                                                                                                      | Z(-25°C) / Z(+20°C) | 6           | 3          | 3                  | 2          | 2                                                                                                                        | 2          | 2  |
|                               |                                                                                                                                                                                                                                         | 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 2000 hours at 105°C.                                                                                    |                     |             |            | Capacitance change |            | Within ±25% of the initial capacitance value (16V or less)<br>Within ±20% of the initial capacitance value (25V or more) |            |    |
|                               |                                                                                                                                                                                                                                         |                     |             |            | 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. |                     |             |            |                    |            |                                                                                                                          |            |    |
| Resistance to soldering heat  | The capacitors are kept on a hot plate for 30 seconds, which is maintained at 250°C. The capacitors shall meet the characteristic requirements listed at right when they are removed from the plate and restored to 20°C.               |                     |             |            | Capacitance change |            | Within ±10% of the initial capacitance value                                                                             |            |    |
|                               |                                                                                                                                                                                                                                         |                     |             |            | tan δ              |            | Less than or equal to the initial specified value                                                                        |            |    |
|                               |                                                                                                                                                                                                                                         |                     |             |            | Leakage current    |            | Less than or equal to the initial specified value                                                                        |            |    |
| Marking                       | Black print on the case top.                                                                                                                                                                                                            |                     |             |            |                    |            |                                                                                                                          |            |    |

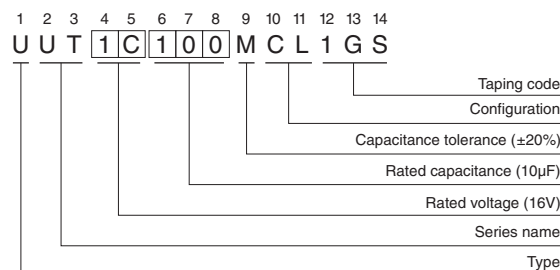
※ I : Leakage Current (μA), C : Rated Capacitance (μF), V : Rated Voltage (V)

## Chip Type



※ Voltage mark for 6.3V is 「6V」.

## Type numbering system (Example : 16V 10μF)



## 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           |

UUT

## ■ Dimensions

| Rated Voltage<br>(V)<br>(code) | Rated Capacitance<br>( $\mu$ F) | Case Size<br>$\phi$ D $\times$ L (mm) | $\tan \delta$ | Leakage Current<br>( $\mu$ A)<br>(at 20°C after<br>2 minutes) | Rated Ripple<br>(mArms)<br>(105°C/120Hz) | Part Number    |
|--------------------------------|---------------------------------|---------------------------------------|---------------|---------------------------------------------------------------|------------------------------------------|----------------|
| 4<br>(0G)                      | 22                              | 4 $\times$ 5.8                        | 0.37          | 3                                                             | 22                                       | UUT0G220MCL1GS |
|                                | 33                              | 5 $\times$ 5.8                        | 0.37          | 3                                                             | 30                                       | UUT0G330MCL1GS |
|                                | 47                              | 5 $\times$ 5.8                        | 0.37          | 3                                                             | 36                                       | UUT0G470MCL1GS |
|                                | 100                             | 6.3 $\times$ 5.8                      | 0.37          | 4                                                             | 60                                       | UUT0G101MCL1GS |
| 6.3<br>(0J)                    | 22                              | 4 $\times$ 5.8                        | 0.28          | 3                                                             | 22                                       | UUT0J220MCL1GS |
|                                | 33                              | 5 $\times$ 5.8                        | 0.28          | 3                                                             | 30                                       | UUT0J330MCL1GS |
|                                | 47                              | 5 $\times$ 5.8                        | 0.28          | 3                                                             | 36                                       | UUT0J470MCL1GS |
|                                | 100                             | 6.3 $\times$ 5.8                      | 0.28          | 6.3                                                           | 60                                       | UUT0J101MCL1GS |
| 10<br>(1A)                     | 22                              | 5 $\times$ 5.8                        | 0.24          | 3                                                             | 27                                       | UUT1A220MCL1GS |
|                                | 33                              | 5 $\times$ 5.8                        | 0.24          | 3.3                                                           | 35                                       | UUT1A330MCL1GS |
|                                | 47                              | 6.3 $\times$ 5.8                      | 0.24          | 4.7                                                           | 46                                       | UUT1A470MCL1GS |
|                                | 100                             | 6.3 $\times$ 5.8                      | 0.24          | 10                                                            | 60                                       | UUT1A101MCL1GS |
| 16<br>(1C)                     | 10                              | 4 $\times$ 5.8                        | 0.20          | 3                                                             | 18                                       | UUT1C100MCL1GS |
|                                | 22                              | 5 $\times$ 5.8                        | 0.20          | 3.52                                                          | 30                                       | UUT1C220MCL1GS |
|                                | 33                              | 6.3 $\times$ 5.8                      | 0.20          | 5.28                                                          | 40                                       | UUT1C330MCL1GS |
|                                | 47                              | 6.3 $\times$ 5.8                      | 0.20          | 7.52                                                          | 50                                       | UUT1C470MCL1GS |
| 25<br>(1E)                     | 4.7                             | 4 $\times$ 5.8                        | 0.16          | 3                                                             | 13                                       | UUT1E4R7MCL1GS |
|                                | 10                              | 5 $\times$ 5.8                        | 0.16          | 3                                                             | 23                                       | UUT1E100MCL1GS |
|                                | 22                              | 6.3 $\times$ 5.8                      | 0.16          | 5.5                                                           | 38                                       | UUT1E220MCL1GS |
|                                | 33                              | 6.3 $\times$ 5.8                      | 0.16          | 8.25                                                          | 48                                       | UUT1E330MCL1GS |
| 35<br>(1V)                     | 4.7                             | 4 $\times$ 5.8                        | 0.13          | 3                                                             | 15                                       | UUT1V4R7MCL1GS |
|                                | 10                              | 5 $\times$ 5.8                        | 0.13          | 3.5                                                           | 25                                       | UUT1V100MCL1GS |
|                                | 22                              | 6.3 $\times$ 5.8                      | 0.13          | 7.7                                                           | 42                                       | UUT1V220MCL1GS |
| 50<br>(1H)                     | 1                               | 4 $\times$ 5.8                        | 0.12          | 3                                                             | 6.2                                      | UUT1H010MCL1GS |
|                                | 2.2                             | 4 $\times$ 5.8                        | 0.12          | 3                                                             | 11                                       | UUT1H2R2MCL1GS |
|                                | 3.3                             | 4 $\times$ 5.8                        | 0.12          | 3                                                             | 14                                       | UUT1H3R3MCL1GS |
|                                | 4.7                             | 5 $\times$ 5.8                        | 0.12          | 3                                                             | 19                                       | UUT1H4R7MCL1GS |
|                                | 10                              | 6.3 $\times$ 5.8                      | 0.12          | 5                                                             | 30                                       | UUT1H100MCL1GS |

- For taping specifications, recommended land size/soldering by reflow and minimum order quantity, please refer to the Guidelines for Aluminum Electrolytic Capacitors.
- Please select UUX, UUU if high C/V products are required.