

# UUX

Chip Type, Wide Temperature Range



- Chip type, operating over wide temperature range of to -55 to +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.

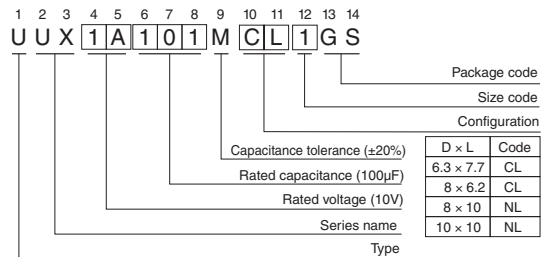


## Specifications

| Item                          | Performance Characteristics   |  |    |    |    |    |    |    |     |     |     |  |     |
|-------------------------------|---|--|----|----|----|----|----|----|-----|-----|-----|--|-----|
| Category Temperature Range    | -55 to +105°C (6.3 to 100V), -40 to +105°C (160 to 400V)  |  |    |    |    |    |    |    |     |     |     |  |     |
| Rated Voltage Range           | 6.3 to 400V   |  |    |    |    |    |    |    |     |     |     |  |     |
| Rated Capacitance Range       | 1 to 1000μF   |  |    |    |    |    |    |    |     |     |     |  |     |
| Capacitance Tolerance         | ±20% at 120Hz, 20°C   |  |    |    |    |    |    |    |     |     |     |  |     |
| Leakage Current               | Rated voltage (V)   | 6.3 to 100   |    |    |    |    |    |    |     |     |     | 160 to 400                                   |     |
|                               | Leakage Current   | After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV (μA). |    |    |    |    |    |    |     |     |     | I = 0.04CV+100 (μA) max.(1 minute's at 20°C) |     |
| Tangent of loss angle (tan δ) | Measurement frequency : 120Hz at 20°C   |  |    |    |    |    |    |    |     |     |     |  |     |
|                               | Rated voltage (V)   | 6.3  | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250  | 400 |
| Stability at Low Temperature  | Measurement frequency: 120Hz  |  |    |    |    |    |    |    |     |     |     |  |     |
|                               | Rated voltage (V)   | 6.3  | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250  | 400 |
|                               | Impedance ratio Z <sub>-55°C</sub> / Z <sub>20°C</sub>  | 4  | 4  | 3  | 3  | 3  | 2  | 3  | 4   | —   | —   | —  | —   |
| 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 (160 to 400V : 3000hours) at 105°C.  |  |    |    |    |    |    |    |     |     |     |  |     |
|                               | Capacitance change  | Within ±20% of the initial capacitance 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. |  |    |    |    |    |    |    |     |     |     |  |     |
|                               | Capacitance change  | Within ±10% of the initial capacitance value   |    |    |    |    |    |    |     |     |     |  |     |
| 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  | Less than or equal to the initial specified value  |    |    |    |    |    |    |     |     |     |  |     |
| Marking                       | Black print on the case top.  |  |    |    |    |    |    |    |     |     |     |  |     |

## Chip Type

## Type numbering system (Example : 10V 100μF)



| φD × L | 6.3 × 7.7  | 8 × 6.2    | 8 × 10     | 10 × 10    |
|--------|------------|------------|------------|------------|
| A      | 2.4        | 3.3        | 2.9        | 3.2        |
| B      | 6.6        | 8.3        | 8.3        | 10.3       |
| C      | 6.6        | 8.3        | 8.3        | 10.3       |
| E      | 2.2        | 2.3        | 3.1        | 4.5        |
| L      | 7.7        | 6.2        | 10         | 10         |
| H      | 0.5 to 0.8 | 0.5 to 0.8 | 0.8 to 1.1 | 0.8 to 1.1 |

● Dimension table in next page.



## ■ Dimensions

| Cap. (μF) | Code | 6.3     |          | 10      |          | 16      |          | 25      |          | 35      |          | 50      |          | 63      |          | 100     |                          |                 |
|-----------|------|---------|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|--------------------------|-----------------|
|           |      | 0J      |          | 1A      |          | 1C      |          | 1E      |          | 1V      |          | 1H      |          | 1J      |          | 2A      |                          |                 |
| 4.7       | 4R7  |         |          |         |          |         |          |         |          |         |          |         |          |         |          |         | 8x6.2                    | 42              |
| 10        | 100  |         |          |         |          |         |          |         |          |         |          |         |          |         | 8x6.2    | 51      | 8x10                     | 75              |
| 22        | 220  |         |          |         |          |         |          |         |          |         |          | ○ 8x6.2 | 67(64)   | 8x10    | 108      | ■ 10x10 | 150(121)                 |                 |
| 33        | 330  |         |          |         |          |         |          |         |          | ○ 8x6.2 | 76(75)   | 8x10    | 133      | ■ 10x10 | 185(179) | 10x10   | 180                      |                 |
| 47        | 470  |         |          |         |          |         |          | ○ 8x6.2 | 79(78)   | 8x10    | 124      | ■ 10x10 | 180(167) | 10x10   | 220      | 10x10   | 230                      |                 |
| 100       | 101  |         |          | 8x6.2   | 90       | ○ 8x10  | 148(111) | 8x10    | 181      | ■ 10x10 | 304(283) | 10x10   | 310      | 10x10   | 320      |         |                          |                 |
| 220       | 221  | ○ 8x10  | 161(121) | 8x10    | 173      | ■ 10x10 | 330(307) | ■ 10x10 | 351(283) | 10x10   | 450      |         |          |         |          |         |                          |                 |
| 330       | 331  | 8x10    | 288      | ■ 10x10 | 318(296) | ■ 10x10 | 441(410) | 10x10   | 372      |         |          |         |          |         |          |         |                          |                 |
| 470       | 471  | ■ 10x10 | 340(316) | ■ 10x10 | 351(326) | 10x10   | 489      |         |          |         |          |         |          |         |          |         |                          |                 |
| 680       | 681  | 10x10   | 408      | 10x10   | 392      |         |          |         |          |         |          |         |          |         |          |         |                          |                 |
| 1000      | 102  | 10x10   | 495      |         |          |         |          |         |          |         |          |         |          |         |          |         | Case size<br>φD × L (mm) | Rated<br>ripple |

| Cap. (μF) | Code | 160   |    | 200   |    | 250   |    | 400   |    |
|-----------|------|-------|----|-------|----|-------|----|-------|----|
|           |      | 2C    |    | 2D    |    | 2E    |    | 2G    |    |
| 1         | 010  |       |    |       |    |       |    | 8x10  | 25 |
| 1.8       | 1R8  |       |    |       |    |       |    | 8x10  | 26 |
| 2.2       | 2R2  |       |    |       |    |       |    | 8x10  | 27 |
| 3.3       | 3R3  |       |    | 8x10  | 31 | 8x10  | 31 | 10x10 | 38 |
| 3.9       | 3R9  |       |    | 8x10  | 34 | 8x10  | 34 | 10x10 | 39 |
| 4.7       | 4R7  |       |    | 8x10  | 37 | 8x10  | 37 | 10x10 | 40 |
| 6.8       | 6R8  |       |    | 8x10  | 44 | 8x10  | 44 |       |    |
| 10        | 100  | 8x10  | 57 | 10x10 | 64 | 10x10 | 64 |       |    |
| 18        | 180  | 10x10 | 64 |       |    |       |    |       |    |

Rated ripple current (mA rms) at 105°C 120Hz

Size φ6.3 × 7.7 is available for capacitors marked. "○" / Size φ8 × 10 is available for capacitors marked. "■"  
 ※ In this case, [6] will be put at 12th digit of type numbering system.

## ● Frequency coefficient of rated ripple current

| Cap. (μF)   | Frequency | 50 Hz | 120 Hz | 300 Hz | 1 kHz | 10 kHz or more |
|-------------|-----------|-------|--------|--------|-------|----------------|
| 1 to 47     |           | 0.80  | 1.00   | 1.15   | 1.40  | 1.67           |
| 100 to 1000 |           | 0.85  | 1.00   | 1.08   | 1.20  | 1.30           |

- Taping specifications are given in page 23.
- Recommended land size, soldering by reflow are given in page 18, 19.
- Please select UUX(p.176) if high C/V products are required.
- Please refer to page 3 for the minimum order quantity.