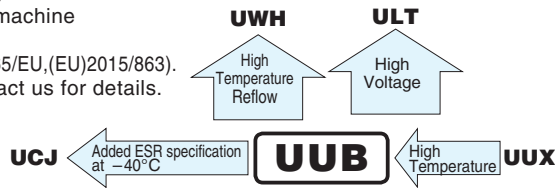


# UUB

Chip Type, High Reliability



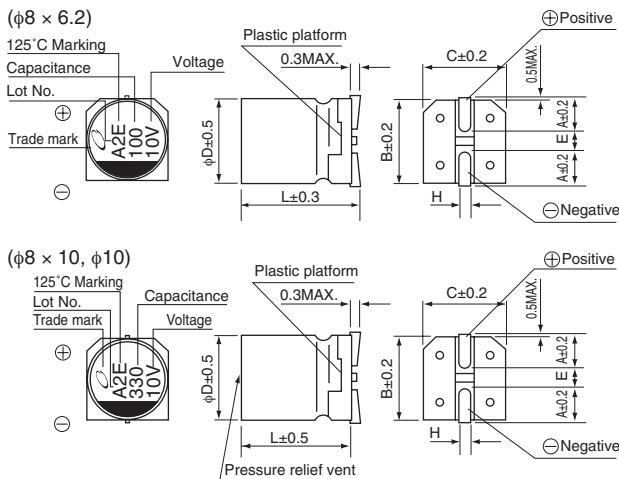
- Chip type, high temperature range, for +125°C use.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2011/65/EU, (EU)2015/863).
- AEC-Q200 compliant. Please contact us for details.



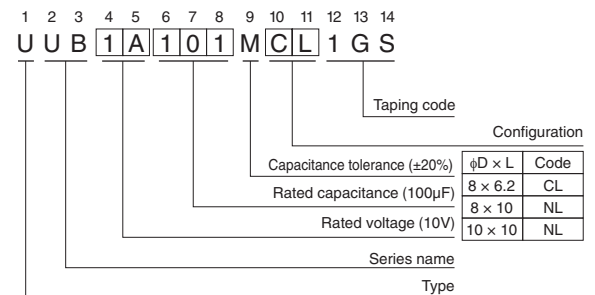
## Specifications

| Item                          | Performance Characteristics                                                                                                                                                                                                             |                                                                                                      |      |      |      |      |                    |            |                                                   |      |     |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------|------|------|------|--------------------|------------|---------------------------------------------------|------|-----|
| Category Temperature Range    | -40 to +125°C                                                                                                                                                                                                                           |                                                                                                      |      |      |      |      |                    |            |                                                   |      |     |
| Rated Voltage Range           | 10 to 400V                                                                                                                                                                                                                              |                                                                                                      |      |      |      |      |                    |            |                                                   |      |     |
| Rated Capacitance Range       | 1 to 330μF                                                                                                                                                                                                                              |                                                                                                      |      |      |      |      |                    |            |                                                   |      |     |
| Capacitance Tolerance         | ±20% at 120Hz, 20°C                                                                                                                                                                                                                     |                                                                                                      |      |      |      |      |                    |            |                                                   |      |     |
| Leakage Current               | Rated voltage (V)<br>10 to 50                                                                                                                                                                                                           |                                                                                                      |      |      |      |      |                    | 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)                                                                                                                                                                                                                       | 10                                                                                                   | 16   | 25   | 35   | 50   | 160                | 200        | 250                                               | 400  |     |
|                               | tan δ (MAX.)                                                                                                                                                                                                                            | 0.32                                                                                                 | 0.24 | 0.21 | 0.18 | 0.18 | 0.30               | 0.30       | 0.30                                              | 0.30 |     |
| Stability at Low Temperature  | Measurement frequency : 120Hz                                                                                                                                                                                                           |                                                                                                      |      |      |      |      |                    |            |                                                   |      |     |
|                               | Rated voltage (V)                                                                                                                                                                                                                       |                                                                                                      | 10   | 16   | 25   | 35   | 50                 | 160        | 200                                               | 250  | 400 |
|                               | Impedance ratio<br>ZT / Z20 (MAX.)                                                                                                                                                                                                      | Z-40°C / Z+20°C                                                                                      | 12   | 8    | 6    | 4    | 4                  | 8          | 8                                                 | 8    | 12  |
| 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 (1000 hours for φ8 × 6.2) at 125°C.                                                          |                                                                                                      |      |      |      |      | Capacitance change |            | Within ±30% of the initial capacitance value      |      |     |
|                               |                                                                                                                                                                                                                                         |                                                                                                      |      |      |      |      | tan δ              |            | 300% 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 125°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.                                                                                                                                                                                                            |                                                                                                      |      |      |      |      |                    |            |                                                   |      |     |

## Chip Type



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



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

## 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           |

● Dimension table in next page.

UUB

## ■ 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>1 minute) | Rated Ripple<br>(mA <sub>rms</sub> )<br>(125°C/120Hz) | Part Number    |
|--------------------------------|---------------------------------|---------------------------------------|---------------|--------------------------------------------------------------|-------------------------------------------------------|----------------|
| 10<br>(1A)                     | 100                             | 8 $\times$ 6.2                        | 0.32          | 30                                                           | 58                                                    | UUB1A101MCL1GS |
|                                | 220                             | 8 $\times$ 10                         | 0.32          | 66                                                           | 90                                                    | UUB1A221MNL1GS |
|                                | 330                             | 10 $\times$ 10                        | 0.32          | 99                                                           | 112                                                   | UUB1A331MNL1GS |
| 16<br>(1C)                     | 100                             | 8 $\times$ 10                         | 0.24          | 48                                                           | 66                                                    | UUB1C101MNL1GS |
|                                | 220                             | 10 $\times$ 10                        | 0.24          | 105.6                                                        | 102                                                   | UUB1C221MNL1GS |
| 25<br>(1E)                     | 47                              | 8 $\times$ 6.2                        | 0.21          | 35.25                                                        | 48                                                    | UUB1E470MCL1GS |
|                                | 100                             | 8 $\times$ 10                         | 0.21          | 75                                                           | 74                                                    | UUB1E101MNL1GS |
|                                | 220                             | 10 $\times$ 10                        | 0.21          | 165                                                          | 116                                                   | UUB1E221MNL1GS |
| 35<br>(1V)                     | 33                              | 8 $\times$ 6.2                        | 0.18          | 34.65                                                        | 44                                                    | UUB1V330MCL1GS |
|                                | 47                              | 8 $\times$ 10                         | 0.18          | 49.35                                                        | 52                                                    | UUB1V470MNL1GS |
|                                | 100                             | 10 $\times$ 10                        | 0.18          | 105                                                          | 80                                                    | UUB1V101MNL1GS |
| 50<br>(1H)                     | 10                              | 8 $\times$ 6.2                        | 0.18          | 15                                                           | 24                                                    | UUB1H100MCL1GS |
|                                | 22                              | 8 $\times$ 6.2                        | 0.18          | 33                                                           | 38                                                    | UUB1H220MCL1GS |
|                                | 33                              | 8 $\times$ 10                         | 0.18          | 49.5                                                         | 46                                                    | UUB1H330MNL1GS |
|                                | 47                              | 10 $\times$ 10                        | 0.18          | 70.5                                                         | 58                                                    | UUB1H470MNL1GS |
| 160<br>(2C)                    | 6.8                             | 8 $\times$ 10                         | 0.30          | 143.52                                                       | 42                                                    | UUB2C6R8MNL1GS |
|                                | 10                              | 10 $\times$ 10                        | 0.30          | 164                                                          | 59                                                    | UUB2C100MNL1GS |
| 200<br>(2D)                    | 4.7                             | 8 $\times$ 10                         | 0.30          | 137.6                                                        | 36                                                    | UUB2D4R7MNL1GS |
|                                | 6.8                             | 10 $\times$ 10                        | 0.30          | 154.4                                                        | 59                                                    | UUB2D6R8MNL1GS |
|                                | 10                              | 10 $\times$ 10                        | 0.30          | 180                                                          | 59                                                    | UUB2D100MNL1GS |
| 250<br>(2E)                    | 3.3                             | 8 $\times$ 10                         | 0.30          | 133                                                          | 28                                                    | UUB2E3R3MNL1GS |
|                                | 4.7                             | 10 $\times$ 10                        | 0.30          | 147                                                          | 59                                                    | UUB2E4R7MNL1GS |
| 400<br>(2G)                    | 1                               | 8 $\times$ 10                         | 0.30          | 116                                                          | 26                                                    | UUB2G010MNL1GS |
|                                | 1.8                             | 8 $\times$ 10                         | 0.30          | 128.8                                                        | 27                                                    | UUB2G1R8MNL1GS |
|                                | 2.2                             | 10 $\times$ 10                        | 0.30          | 135.2                                                        | 36                                                    | UUB2G2R2MNL1GS |
|                                | 3.3                             | 10 $\times$ 10                        | 0.30          | 152.8                                                        | 38                                                    | UUB2G3R3MNL1GS |

• For taping specifications, recommended land size/soldering by reflow and minimum order quantity, please refer to the Guidelines for Aluminum Electrolytic Capacitors.