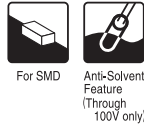


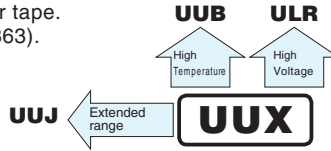
# ALUMINUM ELECTROLYTIC CAPACITORS

# 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.

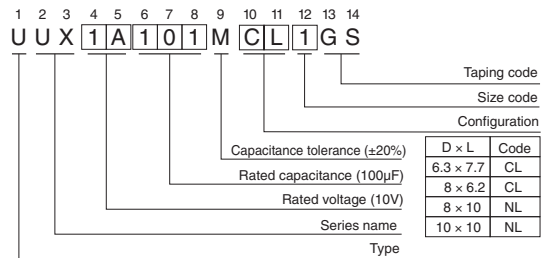
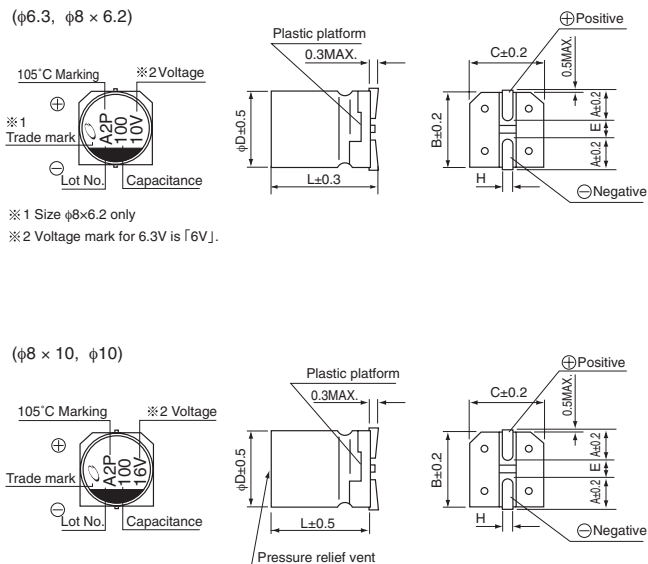


## Specifications

| 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-55°C / Z+20°C   | 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 |

## 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           |

● Dimension table in next page.

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## ■ Dimensions

| Rated Voltage (V)<br>(code) | Rated Capacitance (μF) | Case Size φD×L (mm) | tan δ | Leakage Current (μA)<br>(at 20°C after 1 minute) | Rated Ripple (mArms)<br>(105°C/120Hz) | Part Number    |
|-----------------------------|------------------------|---------------------|-------|--|---------------------------------------|----------------|
| 6.3<br>(0J)                 | 220                    | 8×10                | 0.22  | 41.58  | 161                                   | UUX0J221MNL1GS |
|                             | 220                    | 6.3×7.7             | 0.22  | 41.58  | 121                                   | UUX0J221MCL6GS |
|                             | 330                    | 8×10                | 0.22  | 62.37  | 288                                   | UUX0J331MNL1GS |
|                             | 470                    | 10×10               | 0.22  | 88.83  | 340                                   | UUX0J471MNL1GS |
|                             | 470                    | 8×10                | 0.22  | 88.83  | 316                                   | UUX0J471MNL6GS |
|                             | 680                    | 10×10               | 0.22  | 128.52   | 408                                   | UUX0J681MNL1GS |
|                             | 1000                   | 10×10               | 0.22  | 189  | 495                                   | UUX0J102MNL1GS |
| 10<br>(1A)                  | 100                    | 8×6.2               | 0.19  | 30   | 90                                    | UUX1A101MCL1GS |
|                             | 220                    | 8×10                | 0.19  | 66   | 173                                   | UUX1A221MNL1GS |
|                             | 330                    | 10×10               | 0.19  | 99   | 318                                   | UUX1A331MNL1GS |
|                             | 330                    | 8×10                | 0.19  | 99   | 296                                   | UUX1A331MNL6GS |
|                             | 470                    | 10×10               | 0.19  | 141  | 351                                   | UUX1A471MNL1GS |
|                             | 470                    | 8×10                | 0.19  | 141  | 326                                   | UUX1A471MNL6GS |
|                             | 680                    | 10×10               | 0.19  | 204  | 392                                   | UUX1A681MNL1GS |
| 16<br>(1C)                  | 100                    | 8×10                | 0.16  | 48   | 148                                   | UUX1C101MNL1GS |
|                             | 100                    | 6.3×7.7             | 0.16  | 48   | 111                                   | UUX1C101MCL6GS |
|                             | 220                    | 10×10               | 0.16  | 105.6  | 330                                   | UUX1C221MNL1GS |
|                             | 220                    | 8×10                | 0.16  | 105.6  | 307                                   | UUX1C221MNL6GS |
|                             | 330                    | 10×10               | 0.16  | 158.4  | 441                                   | UUX1C331MNL1GS |
|                             | 330                    | 8×10                | 0.16  | 158.4  | 410                                   | UUX1C331MNL6GS |
|                             | 470                    | 10×10               | 0.16  | 225.6  | 489                                   | UUX1C471MNL1GS |
| 25<br>(1E)                  | 47                     | 8×6.2               | 0.14  | 35.25  | 79                                    | UUX1E470MCL1GS |
|                             | 47                     | 6.3×7.7             | 0.14  | 35.25  | 78                                    | UUX1E470MCL6GS |
|                             | 100                    | 8×10                | 0.14  | 75   | 181                                   | UUX1E101MNL1GS |
|                             | 220                    | 10×10               | 0.14  | 165  | 351                                   | UUX1E221MNL1GS |
|                             | 220                    | 8×10                | 0.14  | 165  | 283                                   | UUX1E221MNL6GS |
|                             | 330                    | 10×10               | 0.14  | 247.5  | 372                                   | UUX1E331MNL1GS |
| 35<br>(1V)                  | 33                     | 8×6.2               | 0.12  | 34.65  | 76                                    | UUX1V330MCL1GS |
|                             | 33                     | 6.3×7.7             | 0.12  | 34.65  | 75                                    | UUX1V330MCL6GS |
|                             | 47                     | 8×10                | 0.12  | 49.35  | 124                                   | UUX1V470MNL1GS |
|                             | 100                    | 10×10               | 0.12  | 105  | 304                                   | UUX1V101MNL1GS |
|                             | 100                    | 8×10                | 0.12  | 105  | 283                                   | UUX1V101MNL6GS |
|                             | 220                    | 10×10               | 0.12  | 231  | 450                                   | UUX1V221MNL1GS |
| 50<br>(1H)                  | 22                     | 8×6.2               | 0.10  | 33   | 67                                    | UUX1H220MCL1GS |
|                             | 22                     | 6.3×7.7             | 0.10  | 33   | 64                                    | UUX1H220MCL6GS |
|                             | 33                     | 8×10                | 0.10  | 49.5   | 133                                   | UUX1H330MNL1GS |
|                             | 47                     | 10×10               | 0.10  | 70.5   | 180                                   | UUX1H470MNL1GS |
|                             | 47                     | 8×10                | 0.10  | 70.5   | 167                                   | UUX1H470MNL6GS |
|                             | 100                    | 10×10               | 0.10  | 150  | 310                                   | UUX1H101MNL1GS |
| 63<br>(1J)                  | 10                     | 8×6.2               | 0.10  | 18.9   | 51                                    | UUX1J100MCL1GS |
|                             | 22                     | 8×10                | 0.10  | 41.58  | 108                                   | UUX1J220MNL1GS |
|                             | 33                     | 10×10               | 0.10  | 62.37  | 185                                   | UUX1J330MNL1GS |
|                             | 33                     | 8×10                | 0.10  | 62.37  | 179                                   | UUX1J330MNL6GS |
|                             | 47                     | 10×10               | 0.10  | 88.83  | 220                                   | UUX1J470MNL1GS |
|                             | 100                    | 10×10               | 0.10  | 189  | 320                                   | UUX1J101MNL1GS |

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## ■ Dimensions

| Rated Voltage (V)<br>(code) | Rated Capacitance (μF) | Case Size<br>φD×L (mm) | tan δ | Leakage Current (μA)<br>(at 20°C after<br>1 minute) | Rated Ripple (mArms)<br>(105°C/120Hz) | Part Number    |
|-----------------------------|------------------------|------------------------|-------|---|---------------------------------------|----------------|
| 100<br>(2A)                 | 4.7                    | 8×6.2                  | 0.08  | 14.1  | 42                                    | UUX2A4R7MNL1GS |
|                             | 10                     | 8×10                   | 0.08  | 30  | 75                                    | UUX2A100MNL1GS |
|                             | 22                     | 10×10                  | 0.08  | 66  | 150                                   | UUX2A220MNL1GS |
|                             | 22                     | 8×10                   | 0.08  | 66  | 121                                   | UUX2A220MNL6GS |
|                             | 33                     | 10×10                  | 0.08  | 99  | 180                                   | UUX2A330MNL1GS |
|                             | 47                     | 10×10                  | 0.08  | 141   | 230                                   | UUX2A470MNL1GS |
| 160<br>(2C)                 | 10                     | 8×10                   | 0.20  | 164   | 57                                    | UUX2C100MNL1GS |
|                             | 18                     | 10×10                  | 0.20  | 215.2   | 64                                    | UUX2C180MNL1GS |
| 200<br>(2D)                 | 3.3                    | 8×10                   | 0.20  | 126.4   | 31                                    | UUX2D3R3MNL1GS |
|                             | 3.9                    | 8×10                   | 0.20  | 131.2   | 34                                    | UUX2D3R9MNL1GS |
|                             | 4.7                    | 8×10                   | 0.20  | 137.6   | 37                                    | UUX2D4R7MNL1GS |
|                             | 6.8                    | 8×10                   | 0.20  | 154.4   | 44                                    | UUX2D6R8MNL1GS |
|                             | 10                     | 10×10                  | 0.20  | 180   | 64                                    | UUX2D100MNL1GS |
| 250<br>(2E)                 | 3.3                    | 8×10                   | 0.20  | 133   | 31                                    | UUX2E3R3MNL1GS |
|                             | 3.9                    | 8×10                   | 0.20  | 139   | 34                                    | UUX2E3R9MNL1GS |
|                             | 4.7                    | 8×10                   | 0.20  | 147   | 37                                    | UUX2E4R7MNL1GS |
|                             | 6.8                    | 8×10                   | 0.20  | 168   | 44                                    | UUX2E6R8MNL1GS |
|                             | 10                     | 10×10                  | 0.20  | 200   | 64                                    | UUX2E100MNL1GS |
| 400<br>(2G)                 | 1                      | 8×10                   | 0.25  | 116   | 25                                    | UUX2G010MNL1GS |
|                             | 1.8                    | 8×10                   | 0.25  | 128.8   | 26                                    | UUX2G1R8MNL1GS |
|                             | 2.2                    | 8×10                   | 0.25  | 135.2   | 27                                    | UUX2G2R2MNL1GS |
|                             | 3.3                    | 10×10                  | 0.25  | 152.8   | 38                                    | UUX2G3R3MNL1GS |
|                             | 3.9                    | 10×10                  | 0.25  | 162.4   | 39                                    | UUX2G3R9MNL1GS |
|                             | 4.7                    | 10×10                  | 0.25  | 175.2   | 40                                    | UUX2G4R7MNL1GS |

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

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