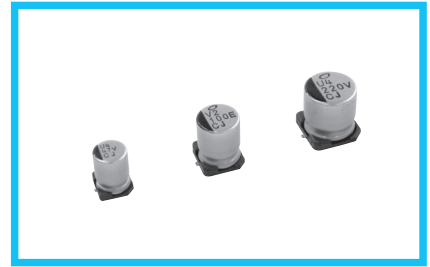


# ALUMINUM ELECTROLYTIC CAPACITORS



Chip Type, High Reliability.  
Low temperature ESR specification.



- Chip type, high temperature range, for +125°C use.
  - Added ESR specification after the test at -40°C (φ6.3 sizes provide only for the first stage.)
  - Applicable to automatic mounting machine fed with carrier tape.
  - Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).
  - AEC-Q200 Qualified.
- Please contact us for details.

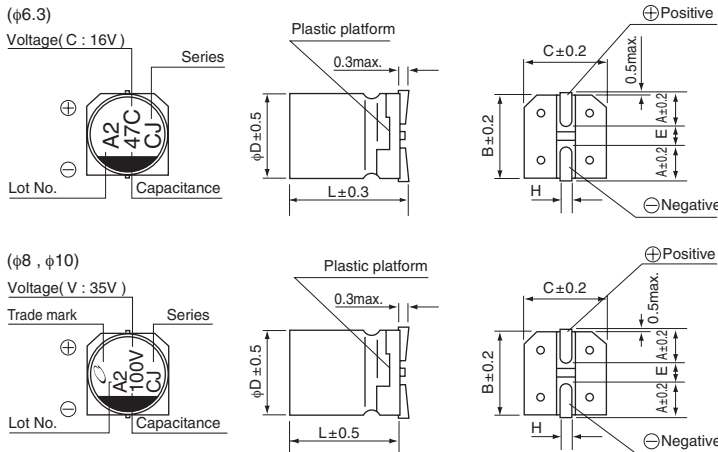


## Specifications

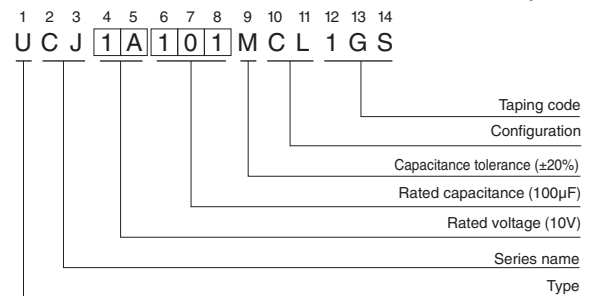
| Item                            | Performance Characteristics  |                    |  |       |   |                 |   |                                 |                     |      |      |      |      |
|---------------------------------|--|--------------------|--|-------|---|-----------------|---|---------------------------------|---------------------|------|------|------|------|
| Category Temperature Range      | -40 to +125°C  |                    |  |       |   |                 |   |                                 |                     |      |      |      |      |
| Rated Voltage Range             | 10 to 50V  |                    |  |       |   |                 |   |                                 |                     |      |      |      |      |
| Rated Capacitance Range         | 10 to 470μF  |                    |  |       |   |                 |   |                                 |                     |      |      |      |      |
| Capacitance Tolerance           | ±20% at 120Hz, 20°C  |                    |  |       |   |                 |   |                                 |                     |      |      |      |      |
| Leakage Current ※               | After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4(μA), whichever is greater.   |                    |  |       |   |                 |   |                                 |                     |      |      |      |      |
| Tangent of loss angle (tan δ)   | Measurement frequency : 120Hz at 20°C  |                    |  |       |   |                 |   |                                 |                     |      |      |      |      |
|                                 | <table border="1"> <tr> <td>Rated voltage (V)</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>tan δ (max.)</td> <td>0.32</td> <td>0.24</td> <td>0.21</td> <td>0.18</td> <td>0.18</td> </tr> </table>   | Rated voltage (V)  | 10   | 16    | 25  | 35              | 50  | tan δ (max.)                    | 0.32                | 0.24 | 0.21 | 0.18 | 0.18 |
| Rated voltage (V)               | 10   | 16                 | 25   | 35    | 50  |                 |   |                                 |                     |      |      |      |      |
| tan δ (max.)                    | 0.32   | 0.24               | 0.21   | 0.18  | 0.18  |                 |   |                                 |                     |      |      |      |      |
| Stability at Low Temperature    | Measurement frequency : 120Hz  |                    |  |       |   |                 |   |                                 |                     |      |      |      |      |
|                                 | <table border="1"> <tr> <td>Rated voltage (V)</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>Impedance ratio ZT / Z20 (max.)</td> <td>Z(-40°C) / Z(+20°C)</td> <td>12</td> <td>8</td> <td>6</td> <td>4</td> <td>4</td> </tr> </table>                                       | Rated voltage (V)  | 10   | 16    | 25  | 35              | 50  | Impedance ratio ZT / Z20 (max.) | Z(-40°C) / Z(+20°C) | 12   | 8    | 6    | 4    |
| Rated voltage (V)               | 10   | 16                 | 25   | 35    | 50  |                 |   |                                 |                     |      |      |      |      |
| Impedance ratio ZT / Z20 (max.) | Z(-40°C) / Z(+20°C)  | 12                 | 8  | 6     | 4   | 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 at 125°C.   |                    |  |       |   |                 |   |                                 |                     |      |      |      |      |
|                                 | <table border="1"> <tr> <td>Capacitance change</td> <td>Within ±30% of the initial capacitance value</td> </tr> <tr> <td>tan δ</td> <td>300% or less than the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Less than or equal to the initial specified value</td> </tr> </table>     | 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 |                                 |                     |      |      |      |      |
| 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.  |                    |  |       |   |                 |   |                                 |                     |      |      |      |      |
|                                 | <table border="1"> <tr> <td>Capacitance change</td> <td>Within ±10% of the initial capacitance value</td> </tr> <tr> <td>tan δ</td> <td>Less than or equal to the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Less than or equal to the initial specified value</td> </tr> </table> | 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 |                                 |                     |      |      |      |      |
| 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



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



| φD x L | 6.3 x 8.7  | 8 x 10     | 10 x 10    |
|--------|------------|------------|------------|
| A      | 2.4        | 2.9        | 3.2        |
| B      | 6.6        | 8.3        | 10.3       |
| C      | 6.6        | 8.3        | 10.3       |
| E      | 2.2        | 3.1        | 4.5        |
| L      | 8.7        | 10         | 10         |
| H      | 0.5 to 0.8 | 0.8 to 1.1 | 0.8 to 1.1 |

| Voltage |  | 10 | 16 | 25 | 35 | 50 |
|---------|--|----|----|----|----|----|
| V       |  |    |    |    |    |    |
| Code    |  | A  | C  | E  | V  | H  |

## Frequency coefficient of rated ripple current

| Frequency   | 50 Hz | 120 Hz | 300 Hz | 1 kHz | 10 kHz or more |
|-------------|-------|--------|--------|-------|----------------|
| Coefficient | 0.35  | 0.50   | 0.64   | 0.83  | 1.00           |

● Dimension table in next page.

UCJ

## ■ 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) | ESR ( $\Omega$ ) max.<br>(-40°C/100kHz) |                            | Rated Ripple<br>(mA <sub>rms</sub> )<br>(125°C/100kHz) | Part Number    |
|--------------------------------|---------------------------------|---------------------------------------|--------------|--|---|----------------------------|--|----------------|
|                                |                                 |                                       |              |  | Initial                                 | after<br>endurance<br>test |  |                |
| 10<br>(1A)                     | 100                             | 6.3 $\times$ 8.7                      | 0.32         | 30   | 14                                      | —                          | 95   | UCJ1A101MCL1GS |
|                                | 220                             | 8 $\times$ 10                         | 0.32         | 66   | 2.0                                     | 6.0                        | 250  | UCJ1A221MCL1GS |
|                                | 330                             | 10 $\times$ 10                        | 0.32         | 99   | 1.5                                     | 4.5                        | 400  | UCJ1A331MCL1GS |
|                                | 470                             | 10 $\times$ 10                        | 0.32         | 141  | 1.5                                     | 4.5                        | 400  | UCJ1A471MCL1GS |
| 16<br>(1C)                     | 47                              | 6.3 $\times$ 8.7                      | 0.24         | 22.56  | 14                                      | —                          | 95   | UCJ1C470MCL1GS |
|                                | 100                             | 8 $\times$ 10                         | 0.24         | 48   | 2.0                                     | 6.0                        | 250  | UCJ1C101MCL1GS |
|                                | 220                             | 10 $\times$ 10                        | 0.24         | 105.6  | 1.5                                     | 4.5                        | 400  | UCJ1C221MCL1GS |
|                                | 330                             | 10 $\times$ 10                        | 0.24         | 158.4  | 1.5                                     | 4.5                        | 400  | UCJ1C331MCL1GS |
| 25<br>(1E)                     | 22                              | 6.3 $\times$ 8.7                      | 0.21         | 16.5   | 14                                      | —                          | 95   | UCJ1E220MCL1GS |
|                                | 33                              | 6.3 $\times$ 8.7                      | 0.21         | 24.75  | 14                                      | —                          | 95   | UCJ1E330MCL1GS |
|                                | 47                              | 6.3 $\times$ 8.7                      | 0.21         | 35.25  | 14                                      | —                          | 95   | UCJ1E470MCL1GS |
|                                | 100                             | 8 $\times$ 10                         | 0.21         | 75   | 2.0                                     | 6.0                        | 250  | UCJ1E101MCL1GS |
|                                | 220                             | 10 $\times$ 10                        | 0.21         | 165  | 1.5                                     | 4.5                        | 400  | UCJ1E221MCL1GS |
|                                | 330                             | 10 $\times$ 10                        | 0.21         | 247.5  | 1.5                                     | 4.5                        | 400  | UCJ1E331MCL1GS |
| 35<br>(1V)                     | 10                              | 6.3 $\times$ 8.7                      | 0.18         | 10.5   | 14                                      | —                          | 95   | UCJ1V100MCL1GS |
|                                | 22                              | 6.3 $\times$ 8.7                      | 0.18         | 23.1   | 14                                      | —                          | 95   | UCJ1V220MCL1GS |
|                                | 33                              | 6.3 $\times$ 8.7                      | 0.18         | 34.65  | 14                                      | —                          | 95   | UCJ1V330MCL1GS |
|                                | 47                              | 6.3 $\times$ 8.7                      | 0.18         | 49.35  | 14                                      | —                          | 95   | UCJ1V470MCL1GS |
|                                | 100                             | 10 $\times$ 10                        | 0.18         | 105  | 1.5                                     | 4.5                        | 400  | UCJ1V101MCL1GS |
|                                | 220                             | 10 $\times$ 10                        | 0.18         | 231  | 1.5                                     | 4.5                        | 400  | UCJ1V221MCL1GS |
| 50<br>(1H)                     | 10                              | 6.3 $\times$ 8.7                      | 0.18         | 15   | 14                                      | —                          | 95   | UCJ1H100MCL1GS |
|                                | 22                              | 6.3 $\times$ 8.7                      | 0.18         | 33   | 14                                      | —                          | 95   | UCJ1H220MCL1GS |
|                                | 33                              | 8 $\times$ 10                         | 0.18         | 49.5   | 2.0                                     | 6.0                        | 200  | UCJ1H330MCL1GS |
|                                | 47                              | 10 $\times$ 10                        | 0.18         | 70.5   | 1.5                                     | 4.5                        | 330  | UCJ1H470MCL1GS |
|                                | 100                             | 10 $\times$ 10                        | 0.18         | 150  | 1.5                                     | 4.5                        | 330  | UCJ1H101MCL1GS |

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