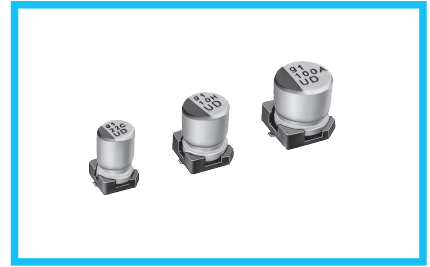
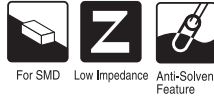


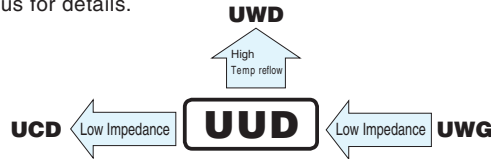
# ALUMINUM ELECTROLYTIC CAPACITORS

# UUD

Chip Type, Low Impedance



- Chip type, low impedance temperature range up 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.

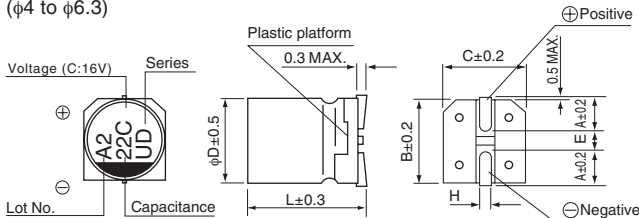


## Specifications

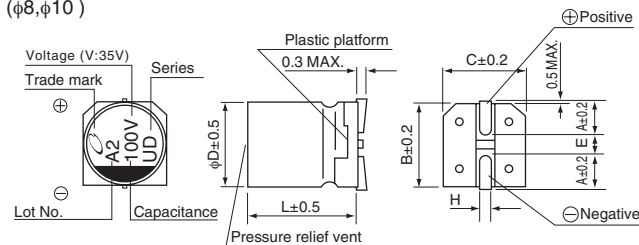
| Item                          | Performance Characteristics   |  |    |    |    |    |    |  |                    |  |       |   |                 |   |
|-------------------------------|---|--|----|----|----|----|----|--|--------------------|--|-------|---|-----------------|---|
| Category Temperature Range    | -55 to +105°C   |  |    |    |    |    |    |  |                    |  |       |   |                 |   |
| Rated Voltage Range           | 6.3 to 50V  |  |    |    |    |    |    |  |                    |  |       |   |                 |   |
| Rated Capacitance Range       | 1 to 1500μF   |  |    |    |    |    |    |  |                    |  |       |   |                 |   |
| 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   |  |    |    |    |    |    | ( ) is φ8 over   |                    |  |       |   |                 |   |
|                               | Rated voltage (V)   | 6.3  | 10 | 16 | 25 | 35 | 50 |  |                    |  |       |   |                 |   |
| Stability at Low Temperature  | Measurement frequency : 120Hz   |  |    |    |    |    |    |  |                    |  |       |   |                 |   |
|                               | Impedance ratio   | Z-25°C / Z+20°C                              | 3  | 2  | 2  | 2  | 2  |  | 2                  |  |       |   |                 |   |
| Endurance                     | The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 5000 hours (2000 hours for φD = 4, 5 and 6.3) at 105°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>200% 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 | 200% 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                         | 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. |  |    |    |    |    |    | <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   |  |    |    |    |    |    |  |                    |  |       |   |                 |   |
| 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.  |  |    |    |    |    |    |  |                    |  |       |   |                 |   |

## Chip Type

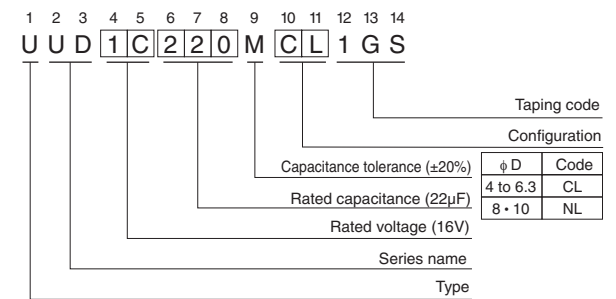
(φ4 to φ6.3)



(φ8, φ10)



## Type numbering system (Example : 16V 22μF)



| φD × L | 4 × 5.8    | 5 × 5.8    | 6.3 × 5.8  | 6.3 × 7.7  | 8 × 10     | 10 × 10    |
|--------|------------|------------|------------|------------|------------|------------|
| A      | 1.8        | 2.1        | 2.4        | 2.4        | 2.9        | 3.2        |
| B      | 4.3        | 5.3        | 6.6        | 6.6        | 8.3        | 10.3       |
| C      | 4.3        | 5.3        | 6.6        | 6.6        | 8.3        | 10.3       |
| E      | 1.0        | 1.3        | 2.2        | 2.2        | 3.1        | 4.5        |
| L      | 5.8        | 5.8        | 5.8        | 7.7        | 10         | 10         |
| H      | 0.5 to 0.8 | 0.5 to 0.8 | 0.5 to 0.8 | 0.5 to 0.8 | 0.8 to 1.1 | 0.8 to 1.1 |

Voltage

|      |     |    |    |    |    |    |
|------|-----|----|----|----|----|----|
| V    | 6.3 | 10 | 16 | 25 | 35 | 50 |
| Code | j   | A  | C  | E  | V  | H  |

● Dimension table in next page.

## ● 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           |

UUD

## ■ Dimensions

| Rated Voltage (V) (code) | Rated Capacitance (μF) | Case Size φD×L (mm) | tan δ | Leakage Current (μA) (at 20°C after 2 minutes) | Impedance (Ω) MAX. (20°C/100kHz) | Rated Ripple (mArms) (105°C/100kHz) | Part Number    |
|--------------------------|------------------------|---------------------|-------|--|----------------------------------|-------------------------------------|----------------|
| 6.3 (0J)                 | 27                     | 4×5.8               | 0.26  | 3  | 1.80                             | 80                                  | UUD0J270MCL1GS |
|                          | 33                     | 5×5.8               | 0.26  | 3  | 0.76                             | 150                                 | UUD0J330MCL1GS |
|                          | 47                     | 5×5.8               | 0.26  | 3  | 0.76                             | 150                                 | UUD0J470MCL1GS |
|                          | 56                     | 5×5.8               | 0.26  | 3.528  | 0.76                             | 150                                 | UUD0J560MCL1GS |
|                          | 68                     | 6.3×5.8             | 0.26  | 4.284  | 0.44                             | 230                                 | UUD0J680MCL1GS |
|                          | 100                    | 6.3×5.8             | 0.26  | 6.3  | 0.44                             | 230                                 | UUD0J101MCL1GS |
|                          | 150                    | 6.3×5.8             | 0.26  | 9.45   | 0.44                             | 230                                 | UUD0J151MCL1GS |
|                          | 220                    | 6.3×5.8             | 0.26  | 13.86  | 0.44                             | 230                                 | UUD0J221MCL1GS |
|                          | 330                    | 6.3×7.7             | 0.26  | 20.79  | 0.34                             | 280                                 | UUD0J331MCL1GS |
|                          | 470                    | 8×10                | 0.28  | 29.61  | 0.17                             | 450                                 | UUD0J471MNL1GS |
|                          | 680                    | 8×10                | 0.28  | 42.84  | 0.17                             | 450                                 | UUD0J681MNL1GS |
|                          | 1000                   | 8×10                | 0.28  | 63   | 0.17                             | 450                                 | UUD0J102MNL1GS |
|                          | 1500                   | 10×10               | 0.28  | 94.5   | 0.09                             | 670                                 | UUD0J152MNL1GS |
| 10 (1A)                  | 22                     | 4×5.8               | 0.20  | 3  | 1.80                             | 80                                  | UUD1A220MCL1GS |
|                          | 27                     | 5×5.8               | 0.20  | 3  | 0.76                             | 150                                 | UUD1A270MCL1GS |
|                          | 33                     | 5×5.8               | 0.20  | 3.3  | 0.76                             | 150                                 | UUD1A330MCL1GS |
|                          | 47                     | 6.3×5.8             | 0.20  | 4.7  | 0.44                             | 230                                 | UUD1A470MCL1GS |
|                          | 56                     | 6.3×5.8             | 0.20  | 5.6  | 0.44                             | 230                                 | UUD1A560MCL1GS |
|                          | 68                     | 6.3×5.8             | 0.20  | 6.8  | 0.44                             | 230                                 | UUD1A680MCL1GS |
|                          | 100                    | 6.3×5.8             | 0.20  | 10   | 0.44                             | 230                                 | UUD1A101MCL1GS |
|                          | 150                    | 6.3×5.8             | 0.20  | 15   | 0.44                             | 230                                 | UUD1A151MCL1GS |
|                          | 220                    | 6.3×7.7             | 0.20  | 22   | 0.34                             | 280                                 | UUD1A221MCL1GS |
|                          | 330                    | 8×10                | 0.24  | 33   | 0.17                             | 450                                 | UUD1A331MNL1GS |
|                          | 470                    | 8×10                | 0.24  | 47   | 0.17                             | 450                                 | UUD1A471MNL1GS |
|                          | 680                    | 10×10               | 0.24  | 68   | 0.09                             | 670                                 | UUD1A681MNL1GS |
|                          | 1000                   | 10×10               | 0.24  | 100  | 0.09                             | 670                                 | UUD1A102MNL1GS |
| 16 (1C)                  | 15                     | 4×5.8               | 0.16  | 3  | 1.80                             | 80                                  | UUD1C150MCL1GS |
|                          | 22                     | 5×5.8               | 0.16  | 3.52   | 0.76                             | 150                                 | UUD1C220MCL1GS |
|                          | 27                     | 5×5.8               | 0.16  | 4.32   | 0.76                             | 150                                 | UUD1C270MCL1GS |
|                          | 33                     | 6.3×5.8             | 0.16  | 5.28   | 0.44                             | 230                                 | UUD1C330MCL1GS |
|                          | 47                     | 6.3×5.8             | 0.16  | 7.52   | 0.44                             | 230                                 | UUD1C470MCL1GS |
|                          | 56                     | 6.3×5.8             | 0.16  | 8.96   | 0.44                             | 230                                 | UUD1C560MCL1GS |
|                          | 68                     | 6.3×5.8             | 0.16  | 10.88  | 0.44                             | 230                                 | UUD1C680MCL1GS |
|                          | 100                    | 6.3×5.8             | 0.16  | 16   | 0.44                             | 230                                 | UUD1C101MCL1GS |
|                          | 150                    | 6.3×7.7             | 0.16  | 24   | 0.34                             | 280                                 | UUD1C151MCL1GS |
|                          | 220                    | 6.3×7.7             | 0.16  | 35.2   | 0.34                             | 280                                 | UUD1C221MCL1GS |
|                          | 330                    | 8×10                | 0.20  | 52.8   | 0.17                             | 450                                 | UUD1C331MNL1GS |
|                          | 470                    | 8×10                | 0.20  | 75.2   | 0.17                             | 450                                 | UUD1C471MNL1GS |
|                          | 680                    | 10×10               | 0.20  | 108.8  | 0.09                             | 670                                 | UUD1C681MNL1GS |

UUD

## ■ Dimensions

| Rated Voltage (V)<br>(code) | Rated Capacitance (μF) | Case Size φD×L (mm) | tan δ | Leakage Current (μA)<br>(at 20°C after 2 minutes) | Impedance (Ω)<br>MAX.<br>(20°C/100kHz) | Rated Ripple (mArms)<br>(105°C/100kHz) | Part Number    |
|-----------------------------|------------------------|---------------------|-------|---|--|--|----------------|
| 25<br>(1E)                  | 10                     | 4×5.8               | 0.14  | 3   | 1.80                                   | 80                                     | UUD1E100MCL1GS |
|                             | 15                     | 5×5.8               | 0.14  | 3.75  | 0.76                                   | 150                                    | UUD1E150MCL1GS |
|                             | 22                     | 5×5.8               | 0.14  | 5.5   | 0.76                                   | 150                                    | UUD1E220MCL1GS |
|                             | 27                     | 6.3×5.8             | 0.14  | 6.75  | 0.44                                   | 230                                    | UUD1E270MCL1GS |
|                             | 33                     | 6.3×5.8             | 0.14  | 8.25  | 0.44                                   | 230                                    | UUD1E330MCL1GS |
|                             | 47                     | 6.3×5.8             | 0.14  | 11.75   | 0.44                                   | 230                                    | UUD1E470MCL1GS |
|                             | 56                     | 6.3×5.8             | 0.14  | 14  | 0.44                                   | 230                                    | UUD1E560MCL1GS |
|                             | 68                     | 6.3×5.8             | 0.14  | 17  | 0.44                                   | 230                                    | UUD1E680MCL1GS |
|                             | 100                    | 6.3×7.7             | 0.14  | 25  | 0.34                                   | 280                                    | UUD1E101MCL1GS |
|                             | 150                    | 8×10                | 0.16  | 37.5  | 0.17                                   | 450                                    | UUD1E151MNL1GS |
|                             | 220                    | 8×10                | 0.16  | 55  | 0.17                                   | 450                                    | UUD1E221MNL1GS |
|                             | 330                    | 8×10                | 0.16  | 82.5  | 0.17                                   | 450                                    | UUD1E331MNL1GS |
|                             | 470                    | 10×10               | 0.16  | 117.5   | 0.09                                   | 670                                    | UUD1E471MNL1GS |
| 35<br>(1V)                  | 4.7                    | 4×5.8               | 0.12  | 3   | 1.80                                   | 80                                     | UUD1V47MCL1GS  |
|                             | 10                     | 5×5.8               | 0.12  | 3.5   | 0.76                                   | 150                                    | UUD1V100MCL1GS |
|                             | 15                     | 5×5.8               | 0.12  | 5.25  | 0.76                                   | 150                                    | UUD1V150MCL1GS |
|                             | 22                     | 5×5.8               | 0.12  | 7.7   | 0.76                                   | 150                                    | UUD1V220MCL1GS |
|                             | 27                     | 6.3×5.8             | 0.12  | 9.45  | 0.44                                   | 230                                    | UUD1V270MCL1GS |
|                             | 33                     | 6.3×5.8             | 0.12  | 11.55   | 0.44                                   | 230                                    | UUD1V330MCL1GS |
|                             | 47                     | 6.3×5.8             | 0.12  | 16.45   | 0.44                                   | 230                                    | UUD1V470MCL1GS |
|                             | 56                     | 6.3×7.7             | 0.12  | 19.6  | 0.34                                   | 280                                    | UUD1V560MCL1GS |
|                             | 68                     | 6.3×7.7             | 0.12  | 23.8  | 0.34                                   | 280                                    | UUD1V680MCL1GS |
|                             | 100                    | 8×10                | 0.14  | 35  | 0.17                                   | 450                                    | UUD1V101MNL1GS |
|                             | 150                    | 8×10                | 0.14  | 52.5  | 0.17                                   | 450                                    | UUD1V151MNL1GS |
|                             | 220                    | 8×10                | 0.14  | 77  | 0.17                                   | 450                                    | UUD1V221MNL1GS |
|                             | 330                    | 10×10               | 0.14  | 115.5   | 0.09                                   | 670                                    | UUD1V331MNL1GS |
| 50<br>(1H)                  | 1                      | 4×5.8               | 0.12  | 3   | 5.00                                   | 30                                     | UUD1H010MCL1GS |
|                             | 2.2                    | 4×5.8               | 0.12  | 3   | 5.00                                   | 30                                     | UUD1H2R2MCL1GS |
|                             | 3.3                    | 4×5.8               | 0.12  | 3   | 5.00                                   | 30                                     | UUD1H3R3MCL1GS |
|                             | 4.7                    | 5×5.8               | 0.12  | 3   | 1.52                                   | 85                                     | UUD1H47MCL1GS  |
|                             | 10                     | 6.3×5.8             | 0.12  | 5   | 0.88                                   | 165                                    | UUD1H100MCL1GS |
|                             | 15                     | 6.3×5.8             | 0.12  | 7.5   | 0.88                                   | 165                                    | UUD1H150MCL1GS |
|                             | 22                     | 6.3×5.8             | 0.12  | 11  | 0.88                                   | 165                                    | UUD1H220MCL1GS |
|                             | 27                     | 6.3×7.7             | 0.12  | 13.5  | 0.68                                   | 185                                    | UUD1H270MCL1GS |
|                             | 33                     | 6.3×7.7             | 0.12  | 16.5  | 0.68                                   | 185                                    | UUD1H330MCL1GS |
|                             | 47                     | 6.3×7.7             | 0.12  | 23.5  | 0.68                                   | 185                                    | UUD1H470MCL1GS |
|                             | 56                     | 8×10                | 0.14  | 28  | 0.34                                   | 300                                    | UUD1H560MNL1GS |
|                             | 68                     | 8×10                | 0.14  | 34  | 0.34                                   | 300                                    | UUD1H680MNL1GS |
|                             | 100                    | 8×10                | 0.14  | 50  | 0.34                                   | 300                                    | UUD1H101MNL1GS |
|                             | 150                    | 10×10               | 0.14  | 75  | 0.18                                   | 670                                    | UUD1H151MNL1GS |
| 220                         | 10×10                  | 0.14                | 110   | 0.18  | 670                                    | UUD1H221MNL1GS                         |                |

- Taping specifications are given in page 20.
- Recommended land size, soldering by reflow are given in page 16, 17.
- Please refer to page 3 for the minimum order quantity.

# Mouser Electronics

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[UUD1A330MCL1GS](#) [UUD1A331MNL1GS](#) [UUD1A470MCL1GS](#) [UUD1A471MNL1GS](#) [UUD1A560MCL1GS](#)  
[UUD1A680MCL1GS](#) [UUD1A681MNL1GS](#) [UUD1C101MCL1GS](#) [UUD1C150MCL1GS](#) [UUD1C151MCL1GS](#)  
[UUD1C220MCL1GS](#) [UUD1C221MCL1GS](#) [UUD1C270MCL1GS](#) [UUD1C330MCL1GS](#) [UUD1C331MNL1GS](#)  
[UUD1C470MCL1GS](#) [UUD1C471MNL1GS](#) [UUD1C560MCL1GS](#) [UUD1C680MCL1GS](#) [UUD1E471MCLHNAGS](#)  
[UUD1V221MNQ1GS](#) [UUD1C471MNS1GS](#) [UUD1V221MNS1GS](#) [UUD1V331MNS1GS](#)