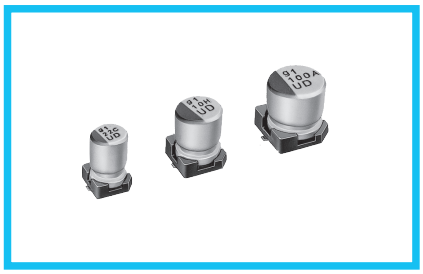
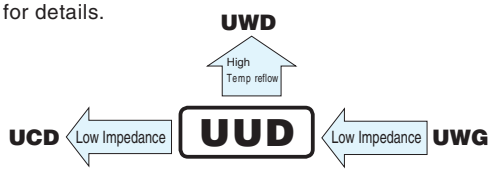
nichicon

# 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.

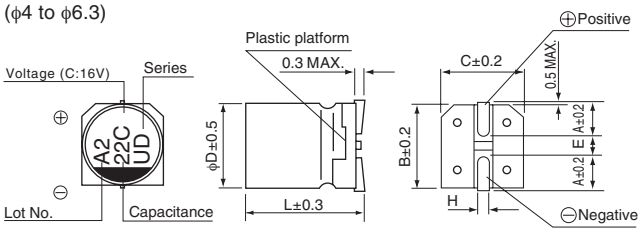



## ■Specifications

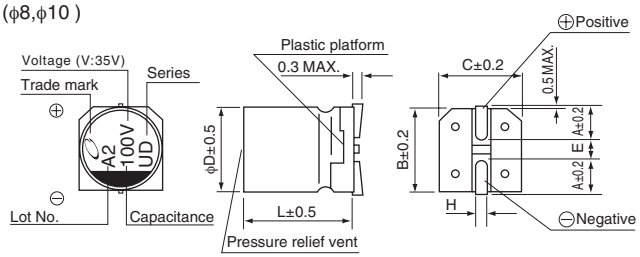
| Item | Performance Characteristics |
|---|---|
| Category Temperature Range | −55 to +105°C |
| Rated Voltage Range | 6.3 to 50V |
| Rated Capacitance Range | 1 to 1500μF |
| Capacitance Tolerance | ±20% at 120Hz, 20°C |
| Leakage Current | After 2 minutes' application of rated voltage at 20°C, leakage 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<br>Rated voltage (V) 6.3 / 10 / 16 / 25 / 35 / 50<br>tan δ (MAX.) 0.26 (0.28) / 0.20 (0.24) / 0.16 (0.20) / 0.14 (0.16) / 0.12 (0.14) / 0.12 (0.14)<br>( ) is φ8 over |
| Stability at Low Temperature | Measurement frequency : 120Hz<br>Rated voltage (V): 6.3 / 10 / 16 / 25 / 35 / 50<br>Impedance ratio ZT / Z20 (MAX.) Z−25°C / Z+20°C: 3 / 2 / 2 / 2 / 2 / 2<br>Z−55°C / Z+20°C: 5 / 4 / 4 / 3 / 3 / 3 |
| 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.<br>Capacitance change: Within ±30% of the initial capacitance value<br>tan δ: 200% or less than the initial specified value<br>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. |
| 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.<br>Capacitance change: Within ±10% of the initial capacitance value<br>tan δ: Less than or equal to the initial specified value<br>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 )




Voltage

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

●Dimension table in next page.

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

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| U | U | D | 1 | C | 2 | 2 | 0 | M | C | L | 1 | G | S |

Package code
Configuration
Capacitance tolerance (±20%)
Rated capacitance (22μF)
Rated voltage (16V)
Series name
Type

| φD | Code |
|---|---|
| 4 to 6.3 | CL |
| 8・10 | NL |

(mm)

| 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 |

# UUD

## ■ Dimensions

| Cap. (μF) \ V | 6.3 | | | 10 | | | 16 | | | 25 | | | 35 | | | 50 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Code | 0J | | | 1A | | | 1C | | | 1E | | | 1V | | | 1H | | |
| **1** (010) | | | | | | | | | | | | | | | | 4×5.8 | 5.00 | 30 |
| **2.2** (2R2) | | | | | | | | | | | | | | | | 4×5.8 | 5.00 | 30 |
| **3.3** (3R3) | | | | | | | | | | | | | | | | 4×5.8 | 5.00 | 30 |
| **4.7** (4R7) | | | | | | | | | | | | | 4×5.8 | 1.80 | 80 | 5×5.8 | 1.52 | 85 |
| **10** (100) | | | | | | | | | | 4×5.8 | 1.80 | 80 | 5×5.8 | 0.76 | 150 | 6.3×5.8 | 0.88 | 165 |
| **15** (150) | | | | | | | 4×5.8 | 1.80 | 80 | 5×5.8 | 0.76 | 150 | 5×5.8 | 0.76 | 150 | 6.3×5.8 | 0.88 | 165 |
| **22** (220) | | | | 4×5.8 | 1.80 | 80 | 5×5.8 | 0.76 | 150 | 5×5.8 | 0.76 | 150 | 5×5.8 | 0.76 | 150 | 6.3×5.8 | 0.88 | 165 |
| **27** (270) | 4×5.8 | 1.80 | 80 | 5×5.8 | 0.76 | 150 | 5×5.8 | 0.76 | 150 | 6.3×5.8 | 0.44 | 230 | 6.3×5.8 | 0.44 | 230 | 6.3×7.7 | 0.68 | 185 |
| **33** (330) | 5×5.8 | 0.76 | 150 | 5×5.8 | 0.76 | 150 | 6.3×5.8 | 0.44 | 230 | 6.3×5.8 | 0.44 | 230 | 6.3×5.8 | 0.44 | 230 | 6.3×7.7 | 0.68 | 185 |
| **47** (470) | 5×5.8 | 0.76 | 150 | 6.3×5.8 | 0.44 | 230 | 6.3×5.8 | 0.44 | 230 | 6.3×5.8 | 0.44 | 230 | 6.3×5.8 | 0.44 | 230 | 6.3×7.7 | 0.68 | 185 |
| **56** (560) | 5×5.8 | 0.76 | 150 | 6.3×5.8 | 0.44 | 230 | 6.3×5.8 | 0.44 | 230 | 6.3×5.8 | 0.44 | 230 | 6.3×7.7 | 0.34 | 280 | 8×10 | 0.34 | 300 |
| **68** (680) | 6.3×5.8 | 0.44 | 230 | 6.3×5.8 | 0.44 | 230 | 6.3×5.8 | 0.44 | 230 | 6.3×5.8 | 0.44 | 230 | 6.3×7.7 | 0.34 | 280 | 8×10 | 0.34 | 300 |
| **100** (101) | 6.3×5.8 | 0.44 | 230 | 6.3×5.8 | 0.44 | 230 | 6.3×5.8 | 0.44 | 230 | 6.3×7.7 | 0.34 | 280 | 8×10 | 0.17 | 450 | 8×10 | 0.34 | 300 |
| **150** (151) | 6.3×5.8 | 0.44 | 230 | 6.3×5.8 | 0.44 | 230 | 6.3×7.7 | 0.34 | 280 | 8×10 | 0.17 | 450 | 8×10 | 0.17 | 450 | 10×10 | 0.18 | 670 |
| **220** (221) | 6.3×5.8 | 0.44 | 230 | 6.3×7.7 | 0.34 | 280 | 6.3×7.7 | 0.34 | 280 | 8×10 | 0.17 | 450 | 8×10 | 0.17 | 450 | 10×10 | 0.18 | 670 |
| **330** (331) | 6.3×7.7 | 0.34 | 280 | 8×10 | 0.17 | 450 | 8×10 | 0.17 | 450 | 8×10 | 0.17 | 450 | 10×10 | 0.09 | 670 | | | |
| **470** (471) | 8×10 | 0.17 | 450 | 8×10 | 0.17 | 450 | 8×10 | 0.17 | 450 | 10×10 | 0.09 | 670 | | | | | | |
| **680** (681) | 8×10 | 0.17 | 450 | 10×10 | 0.09 | 670 | 10×10 | 0.09 | 670 | | | | | | | | | |
| **1000** (102) | 8×10 | 0.17 | 450 | 10×10 | 0.09 | 670 | | | | | | | | | | Case size φD×L (mm) | Impedance | Rated ripple |
| **1500** (152) | 10×10 | 0.09 | 670 | | | | | | | | | | | | | | | |

Max. Impedance (Ω) at 20°C 100kHz,
Rated ripple current (mArms) at 105°C 100kHz

## ● 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 |

- Taping specifications are given in page 23.
- Recommended land size, soldering by reflow are given in page 18, 19.
- Please refer to page 3 for the minimum order quantity.

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