

UD

Chip Type, Low Impedance

series



For SMD



Low Impedance



Anti-Solvent Feature

- Chip type, low impedance temperature range up to +105°C.
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine using carrier tape.

UD Low Impedance WG

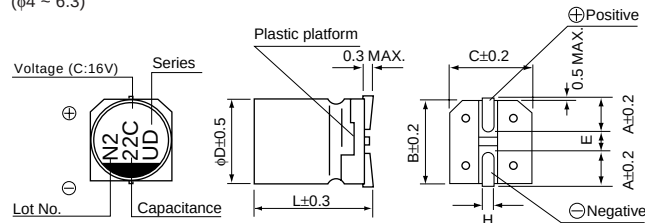


## Specifications

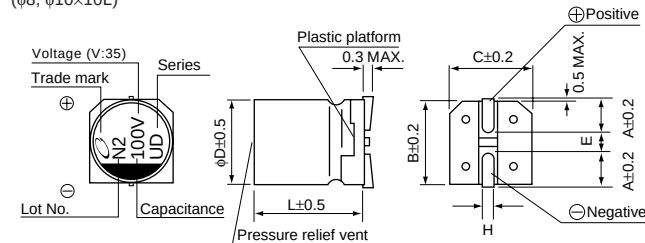
| Item                         | Performance Characteristics                                                                                                                                                                                      |                 |             |             |                    |             |                                         |                |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------|-------------|--------------------|-------------|-----------------------------------------|----------------|
| Category Temperature Range   | -55 ~ +105°C                                                                                                                                                                                                     |                 |             |             |                    |             |                                         |                |
| Rated Voltage Range          | 6.3 ~ 50V                                                                                                                                                                                                        |                 |             |             |                    |             |                                         |                |
| Rated Capacitance Range      | 1 ~ 1500μF                                                                                                                                                                                                       |                 |             |             |                    |             |                                         |                |
| Capacitance Tolerance        | ±20% at 120Hz, 20°C                                                                                                                                                                                              |                 |             |             |                    |             |                                         |                |
| Leakage Current              | After 2 minutes' application of rated voltage, leakage current is not more than 0.01 CV or 3 (μA), whichever is greater.                                                                                         |                 |             |             |                    |             |                                         |                |
| tan δ                        | Measurement frequency : 120Hz, Temperature : 20°C                                                                                                                                                                |                 |             |             |                    |             |                                         |                |
|                              | Rated voltage (V)                                                                                                                                                                                                | 6.3             | 10          | 16          | 25                 | 35          | 50                                      | ( ) is φ8 over |
|                              | 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)                             |                |
| Stability at Low Temperature | Measurement frequency : 120Hz                                                                                                                                                                                    |                 |             |             |                    |             |                                         |                |
|                              | Rated voltage (V)                                                                                                                                                                                                |                 | 6.3         | 10          | 16                 | 25          | 35                                      | 50             |
|                              | Impedance ratio<br>ZT / Z20 (MAX.)                                                                                                                                                                               | Z-25°C / Z+20°C | 3           | 2           | 2                  | 2           | 2                                       | 2              |
|                              |                                                                                                                                                                                                                  | Z-55°C / Z+20°C | 5           | 4           | 4                  | 3           | 3                                       | 3              |
| Endurance                    | After 5000 hours' (2000 hours for φD ≤6.3) application of rated voltage at 105°C , capacitors meet the characteristic requirements listed at right.                                                              |                 |             |             | Capacitance change |             | Within ±30% of initial value            |                |
|                              |                                                                                                                                                                                                                  |                 |             |             | tan δ              |             | 200% or less of initial specified value |                |
|                              |                                                                                                                                                                                                                  |                 |             |             | Leakage current    |             | Initial specified value or less         |                |
| Shelf Life                   | After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for endurance characteristics listed above.                                                                        |                 |             |             |                    |             |                                         |                |
| Resistance to soldering heat | The capacitors shall be kept on the hot plate maintained at 250°C for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the characteristic requirements listed at right. |                 |             |             | Capacitance change |             | Within ±10% of initial value            |                |
|                              |                                                                                                                                                                                                                  |                 |             |             | tan δ              |             | Initial specified value or less         |                |
|                              |                                                                                                                                                                                                                  |                 |             |             | Leakage current    |             | Initial specified value or less         |                |
| Marking                      | Black print on the case top.                                                                                                                                                                                     |                 |             |             |                    |             |                                         |                |

## Chip Type

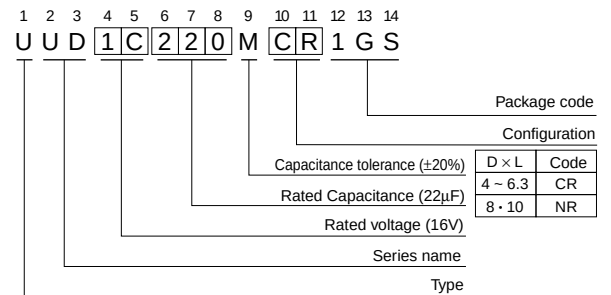
(φ4 ~ 6.3)



(φ8, φ10×10L)



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



- The lead-free product is also available upon request.
- In this case, L will be put at 11th digit of type numbering system.

|   | 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 ~ 0.8 | 0.5 ~ 0.8 | 0.5 ~ 0.8 | 0.5 ~ 0.8 | 0.8 ~ 1.1 | 0.8 ~ 1.1 |

Voltage

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

• Dimension table in next page.

## ■ Dimensions

| Cap.<br>( $\mu$ F) | V   | 6.3     |      |     | 10      |      |     | 16      |      |     | 25      |      |     | 35      |      |     | 50        |           |              |
|--------------------|-----|---------|------|-----|---------|------|-----|---------|------|-----|---------|------|-----|---------|------|-----|-----------|-----------|--------------|
|                    |     | 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 | Impedance | Rated ripple |
| 1500               | 152 | 10×10   | 0.09 | 670 |         |      |     |         |      |     |         |      |     |         |      |     |           |           |              |

Max. impedance ( $\Omega$ ) at 20°C 100kHz, Rated Ripple (mA rms) at 105°C 100kHz

## ● Frequency coefficient of rated ripple current

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

## ● Taping Specifications are given in page 21.

Please refer to page 3 for the minimum order quantity.