

# ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

## UUQ

Chip Type, For Audio Equipment  
Wide Temperature Range



- Chip type acoustic series within the wide temperature range.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2011/65/EU)
- AEC-Q200 compliant. Please contact us for details.

UUQ

Chip type

UMW



## Specifications

|                               |                                                                                                                                                                                                                                         |                 |      |      |                    |      |                                                   |    |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------|------|--------------------|------|---------------------------------------------------|----|
| Item                          | Performance Characteristics                                                                                                                                                                                                             |                 |      |      |                    |      |                                                   |    |
| Category Temperature Range    | -40 to +105°C                                                                                                                                                                                                                           |                 |      |      |                    |      |                                                   |    |
| Rated Voltage Range           | 6.3 to 50V                                                                                                                                                                                                                              |                 |      |      |                    |      |                                                   |    |
| Rated Capacitance Range       | 1 to 1000μF                                                                                                                                                                                                                             |                 |      |      |                    |      |                                                   |    |
| Capacitance Tolerance         | ±20% (120Hz, 20°C)                                                                                                                                                                                                                      |                 |      |      |                    |      |                                                   |    |
| Leakage Current               | After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03 CV or 4 (μA) , whichever is greater.                                                                                                       |                 |      |      |                    |      |                                                   |    |
| Tangent of loss angle (tan δ) | Measurement frequency : 120Hz at 20°C                                                                                                                                                                                                   |                 |      |      |                    |      |                                                   |    |
|                               | Rated voltage (V)                                                                                                                                                                                                                       | 6.3             | 10   | 16   | 25                 | 35   | 50                                                |    |
|                               | tan δ (MAX.)                                                                                                                                                                                                                            | 0.30            | 0.26 | 0.22 | 0.16               | 0.13 | 0.12                                              |    |
| 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 | 4    | 3    | 2                  | 2    | 2                                                 | 2  |
|                               |                                                                                                                                                                                                                                         | Z-40°C / Z+20°C | 8    | 5    | 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 1000 hours at 105°C.                                                                                    |                 |      |      | Capacitance change |      | Within ±20% 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. |                 |      |      |                    |      |                                                   |    |
| 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 |      | 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.                                                                                                                                                                                                            |                 |      |      |                    |      |                                                   |    |

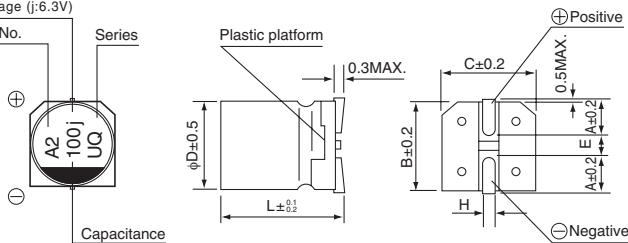
## Chip Type

(φ4 to φ6.3)

Voltage (j:6.3V)

Lot No.

Series

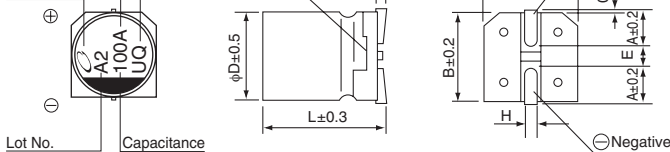


(φ8 × 6.2L)

Voltage (A : 10V)

Trade mark

Series

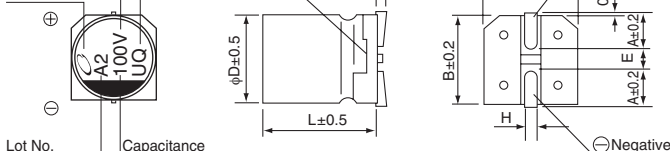


(φ8 × 10L, φ10)

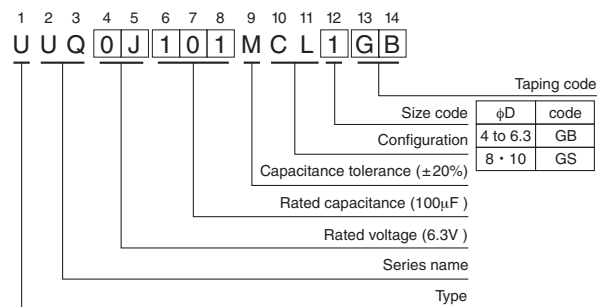
Voltage (V : 35V)

Trade mark

Series



## Type numbering system (Example : 6.3V 100μF)



| φD × L | 4 × 5.4    | 5 × 5.4    | 6.3 × 5.4  | 8 × 6.2    | 8 × 10     | 10 × 10    |
|--------|------------|------------|------------|------------|------------|------------|
| A      | 1.8        | 2.1        | 2.4        | 3.3        | 2.9        | 3.2        |
| B      | 4.3        | 5.3        | 6.6        | 8.3        | 8.3        | 10.3       |
| C      | 4.3        | 5.3        | 6.6        | 8.3        | 8.3        | 10.3       |
| E      | 1.0        | 1.3        | 2.2        | 2.3        | 3.1        | 4.5        |
| L      | 5.4        | 5.4        | 5.4        | 6.2        | 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.



### ■ Dimensions

| Cap.(μF) | Code | V         |           | 6.3         |           | 10        |           | 16        |     | 25        |     | 35      |     | 50                       |                 |
|----------|------|-----------|-----------|-------------|-----------|-----------|-----------|-----------|-----|-----------|-----|---------|-----|--------------------------|-----------------|
|          |      |           |           | 0J          |           | 1A        |           | 1C        |     | 1E        |     | 1V      |     | 1H                       |                 |
| 1        | 010  |           |           |             |           |           |           |           |     |           |     |         |     | 4 × 5.4                  | 6.2             |
| 2.2      | 2R2  |           |           |             |           |           |           |           |     |           |     |         |     | 4 × 5.4                  | 11              |
| 3.3      | 3R3  |           |           |             |           |           |           |           |     |           |     |         |     | 4 × 5.4                  | 14              |
| 4.7      | 4R7  |           |           |             |           |           |           |           |     | 4 × 5.4   | 13  | 4 × 5.4 | 15  | 5 × 5.4                  | 19              |
| 10       | 100  |           |           |             |           | 4 × 5.4   | 22        | 4 × 5.4   | 18  | 5 × 5.4   | 23  | 5 × 5.4 | 25  | 6.3 × 5.4                | 30              |
| 22       | 220  | 4 × 5.4   | 22        | 5 × 5.4     | 27        | 5 × 5.4   | 30        | 6.3 × 5.4 | 38  | 6.3 × 5.4 | 42  | 8 × 6.2 | 51  | 8 × 10                   | 140             |
| 33       | 330  | 5 × 5.4   | 30        | 5 × 5.4     | 35        | 6.3 × 5.4 | 40        | 6.3 × 5.4 | 48  | 8 × 6.2   | 59  | 8 × 10  | 155 | 8 × 10                   | 180             |
| 47       | 470  | 5 × 5.4   | 36        | 6.3 × 5.4   | 46        | 6.3 × 5.4 | 50        | 8 × 6.2   | 66  | 8 × 10    | 155 | 8 × 10  | 180 | 8 × 10                   | 180             |
| 100      | 101  | 6.3 × 5.4 | 60        | ○ 6.3 × 5.4 | 60 (90)   | ● 8 × 6.2 | 102 (210) | 8 × 10    | 155 | 10 × 10   | 300 | 10 × 10 | 300 | 10 × 10                  | 220             |
| 220      | 221  | ● 8 × 6.2 | 102 (210) | ● 8 × 6.2   | 102 (210) | △ 8 × 10  | 210 (310) | 10 × 10   | 300 | 10 × 10   | 300 |         |     |                          |                 |
| 330      | 331  | ● 8 × 6.2 | 102 (210) | △ 8 × 10    | 210 (310) | △ 8 × 10  | 210 (310) |           |     |           |     |         |     |                          |                 |
| 470      | 471  | △ 8 × 10  | 210 (310) | △ 8 × 10    | 210 (310) | △ 8 × 10  | 210 (310) |           |     |           |     |         |     |                          |                 |
| 1000     | 102  | 10 × 10   | 310       |             |           |           |           |           |     |           |     |         |     | Case size<br>φD × L (mm) | Rated<br>ripple |

Size φ8 × 6.2L is available for capacitors marked "○".

Size φ8 × 10L is available for capacitors marked "●".

Size φ10 × 10L is available for capacitors marked "△".

※ In this case, [6] will be put at 12th digit of type numbering system.

Rated ripple current (mArms) at 105°C 120Hz

### ● Frequency coefficient of rated ripple current

| Frequency   | 50 Hz | 120 Hz | 300 Hz | 1 kHz | 10 kHz or more |
|-------------|-------|--------|--------|-------|----------------|
| Coefficient | 0.70  | 1.00   | 1.17   | 1.36  | 1.50           |

- 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.