# ALUMINUM ELECTROLYTIC CAPACITORS

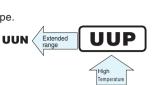
## nichicon



6mmL Chip Type, Bi-Polarized



- Chip type, bi-polarized withstanding high 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).
- AEC-Q200 compliant. Please contact us for details.



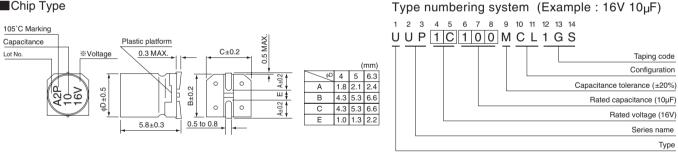
UWP



#### Specifications

| Item                                  | Performance Characteristics   |                         |   |   |      |           |                                       |    |   |  |  |
|---------------------------------------|---|-------------------------|---|---|------|-----------|---------------------------------------|----|---|--|--|
| Category Temperature Range            | −55 to +105°C   |                         |   |   |      |           |                                       |    |   |  |  |
| Rated Voltage Range                   | 6.3 to 50V  |                         |   |   |      |           |                                       |    |   |  |  |
| Rated Capacitance Range               | 0.1 to 47µF   |                         |   |   |      |           |                                       |    |   |  |  |
| 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 0.05 CV or 10 (µA), whichever is greater.   |                         |   |   |      |           |                                       |    |   |  |  |
|                                       | Measurement frequency : 120Hz at 20°C   |                         |   |   |      |           |                                       |    |   |  |  |
| Tangent of loss angle (tan $\delta$ ) | Rated voltage (V) 6.3   | 10                      |   | 16  |      | 25        | 5 35                                  |    | 50  |  |  |
| c,                                    | tan δ (MAX.) 0.24 (   | ).20                    |   | 0.17  | 0.17 |           | 0.15                                  |    | 0.15  |  |  |
|                                       | Measurement frequency : 120Hz   |                         |   |   |      |           |                                       |    |   |  |  |
|                                       | Rated voltage (V)   |                         | 6.3 10  |   | 16   | 6         | 25                                    | 35 | 50  |  |  |
| Stability at Low Temperature          | Impedance ratio Z-25°C / Z+20°C   | Z-25°C / Z+20°C         |   | 3   | 2    |           | 2                                     | 2  | 2   |  |  |
|                                       | ZT / Z20 (MAX.) Z–40°C / Z+20°C   |                         | 8   | 6   | 4    |           | 4                                     | 3  | 3   |  |  |
|                                       | The specifications listed at right shall be met Capacitance change Within ±20% of the initial capacitance value   |                         |   |   |      |           |                                       |    |   |  |  |
| Endurance                             | when the capacitors are restored to 20°C  | δ 200% or less than the |   |   |      |           | · · · · · · · · · · · · · · · · · · · |    |   |  |  |
|                                       | the rated voltage is applied for 1000 hours at 105°C with the polarity every 250 hours.   |                         |   |   |      |           |                                       |    |   |  |  |
| 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  | Са                      | Capacitance change Within ±10% of the initial capacitance value |   |      | nce value |                                       |    |   |  |  |
|                                       | maintained at 250°C. The capacitors shall meet the characteristic   |                         |   |   |      |           | tan δ                                 |    | Less than or equal to the initial specified value |  |  |
|                                       | requirements listed at right when they a<br>and restored to 20°C.   | Leakage current         |   | Less than or equal to the initial specified value |      |           |                                       |    |   |  |  |
| Marking                               | Black print on the case top.  |                         |   |   |      |           |                                       |    |   |  |  |

### Chip Type



% Voltage mark for 6.3V is [6V]

### Dimensions

| V        |      | 6.3 |    | 10       |    | 1   | 6    | 2   | 5  | 35  |     | 50        |        |
|----------|------|-----|----|----------|----|-----|------|-----|----|-----|-----|-----------|--------|
| Cap.(µF) | Code | 0   | J  | 1A 1C 1E |    | E   | 1V   |     | 1H |     |     |           |        |
| 0.1      | 0R1  |     |    |          |    |     |      |     |    |     |     | 4         | 1.0    |
| 0.22     | R22  |     |    |          |    |     |      |     |    |     |     | 4         | 2.0    |
| 0.33     | R33  |     |    |          |    |     | <br> |     |    |     |     | 4         | 2.8    |
| 0.47     | R47  |     |    |          |    |     | 1    |     |    |     |     | 4         | 4.0    |
| 1        | 010  |     |    |          |    |     |      |     |    |     |     | 4         | 8.4    |
| 2.2      | 2R2  |     |    |          |    |     |      |     |    | 4   | 8.4 | 5         | 13     |
| 3.3      | 3R3  |     |    |          |    |     | 1    | 5   | 12 | 5   | 16  | 5         | 17     |
| 4.7      | 4R7  |     |    |          |    | 4   | 12   | 5   | 16 | 5   | 18  | 6.3       | 20     |
| 10       | 100  |     |    | 4        | 17 | 5   | 23   | 6.3 | 27 | 6.3 | 29  |           |        |
| 22       | 220  | 5   | 28 | 6.3      | 33 | 6.3 | 37   |     |    |     |     |           |        |
| 33       | 330  | 6.3 | 37 | 6.3      | 41 | 6.3 | 49   |     |    |     |     |           | Rated  |
| 47       | 470  | 6.3 | 45 |          |    |     | 1    |     |    |     |     | Case size | ripple |

### Frequency coefficient of rated ripple current

|   | 1 7         |       |        |        |       |                |
|---|-------------|-------|--------|--------|-------|----------------|
| [ | Frequency   | 50 Hz | 120 Hz | 300 Hz | 1 kHz | 10 kHz or more |
| [ | Coefficient | 0.70  | 1.00   | 1.17   | 1.36  | 1.50           |
|   |             |       |        |        |       |                |

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

• Taping specifications are given in page 23.

• Recommended land size, soldering by reflow are given in page 18, 19.

• Please select UUN(p.166) if high CV products are required.

• Please refer to page 3 for the minimum order quantity.

