

## UBC

Chip Type, High Temperature Range,  
Vibration Resistance



For SMD



Long Life

- Highly dependable reliability withstanding load life of 1000 hours at +150°C.
- Suited for automobile electronics where heavy duty services are indispensable.
- Compliant to the RoHS directive (2011/65/EU, (EU)2015/863).
- AEC-Q200 Qualified. Please contact us for details.

**UBC**

Long Life

**UBH**

High  
Temperature  
**UUE**



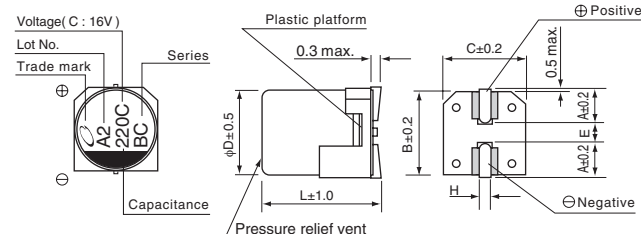
## Specifications

| Item                          | Performance Characteristics                                                                                                                                                                                                             |              |      |      |                    |                                                   |            |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------|------|--------------------|---------------------------------------------------|------------|
| Category Temperature Range    | -40 to +150°C (φ8 to 10), -55 to +150°C (φ12.5 to 18)                                                                                                                                                                                   |              |      |      |                    |                                                   |            |
| Rated Voltage Range           | 16 to 50V                                                                                                                                                                                                                               |              |      |      |                    |                                                   |            |
| Rated Capacitance Range       | 33 to 2200μF                                                                                                                                                                                                                            |              |      |      |                    |                                                   |            |
| Capacitance Tolerance         | ±20% at 120Hz, 20°C                                                                                                                                                                                                                     |              |      |      |                    |                                                   |            |
| Leakage Current ※             | After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV(μA).                                                                                                                                     |              |      |      |                    |                                                   |            |
| Tangent of loss angle (tan δ) | Rated voltage (V)                                                                                                                                                                                                                       |              | 16   | 25   | 35                 | 50                                                | 120Hz 20°C |
|                               | tan δ (max.)                                                                                                                                                                                                                            | φ8, φ10      | 0.20 | 0.16 | 0.14               | 0.14                                              |            |
|                               |                                                                                                                                                                                                                                         | φ12.5 to φ18 | 0.18 | 0.16 | 0.14               | 0.12                                              |            |
|                               | For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. (φ12.5 to φ18)                                                                                                                                              |              |      |      |                    |                                                   |            |
| Stability at Low Temperature  | Rated voltage (V)                                                                                                                                                                                                                       |              | 16   | 25   | 35                 | 50                                                | 120Hz      |
|                               | Impedance ratio<br>Z(-40°C) / Z(+20°C)<br>(max.)                                                                                                                                                                                        | φ8, φ10      | 8    | 6    | 4                  | 4                                                 |            |
|                               |                                                                                                                                                                                                                                         | φ12.5 to φ18 | 6    | 4    | 4                  | 4                                                 |            |
| 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 150°C.                                                                                    |              |      |      | Capacitance change | Within ±30% of the initial capacitance value      |            |
|                               |                                                                                                                                                                                                                                         |              |      |      | tan δ              | 300% 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 150°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. |              |      |      |                    |                                                   |            |
| Marking                       | Black print on the case top.                                                                                                                                                                                                            |              |      |      |                    |                                                   |            |

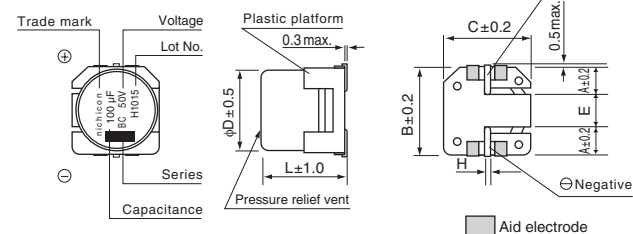
※ I : Leakage Current (μA), C : Rated Capacitance (μF), V : Rated Voltage (V)

## Chip Type

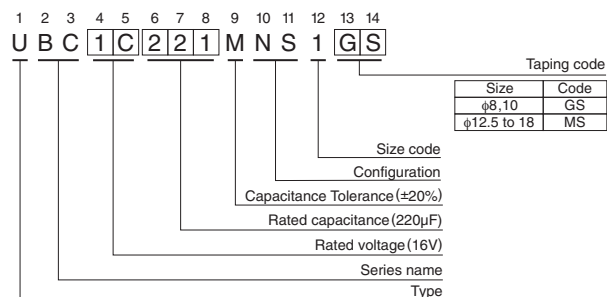
### (φ8, φ10) 【Vibration Resistance】



### (φ12.5 to φ18) 【Vibration Resistance】



## Type numbering system (Example : 16V 220μF)



| φ | 8          | 10         | 12.5       | 16         | 18         |
|---|------------|------------|------------|------------|------------|
| A | 2.9        | 3.2        | 4.8        | 5.4        | 6.4        |
| B | 8.3        | 10.3       | 13.6       | 17.1       | 19.1       |
| C | 8.3        | 10.3       | 13.6       | 17.1       | 19.1       |
| E | 3.1        | 4.5        | (4.0)      | (6.3)      | (6.3)      |
| L | 10         | 10         | 13.5       | 16.5, 21.5 | 21.5       |
| H | 1.1 to 1.5 | 1.1 to 1.5 | 1.0 to 1.4 | 1.0 to 1.4 | 1.0 to 1.4 |

## Frequency coefficient of rated ripple current

| Frequency   | 120 Hz | 300 Hz | 1 kHz | 10kHz or more |
|-------------|--------|--------|-------|---------------|
| Coefficient | 0.67   | 0.79   | 0.91  | 1.00          |

●Dimension table in next page.

UBC

## ■ Dimensions

| Rated Voltage<br>(V)<br>(code) | Rated<br>Capacitance<br>( $\mu$ F) | Case Size<br>$\phi$ D $\times$ L (mm) | $\tan \delta$ | Leakage Current<br>( $\mu$ A)<br>(at 20°C after<br>1 minute) | Rated Ripple<br>(mA <sub>rms</sub> )<br>(150°C/100kHz) | Part Number    |
|--------------------------------|------------------------------------|---------------------------------------|---------------|--------------------------------------------------------------|--------------------------------------------------------|----------------|
| 16<br>(1C)                     | 100                                | 8 $\times$ 10                         | 0.20          | 48                                                           | 110                                                    | UBC1C101MNS1GS |
|                                | 220                                | 10 $\times$ 10                        | 0.20          | 105.6                                                        | 150                                                    | UBC1C221MNS1GS |
|                                | 470                                | 12.5 $\times$ 13.5                    | 0.18          | 225.6                                                        | 750                                                    | UBC1C471MNS1MS |
|                                | 680                                | 12.5 $\times$ 13.5                    | 0.18          | 326.4                                                        | 800                                                    | UBC1C681MNS1MS |
|                                | 1000                               | 16 $\times$ 16.5                      | 0.18          | 480                                                          | 850                                                    | UBC1C102MNS1MS |
|                                | 2200                               | 18 $\times$ 21.5                      | 0.20          | 1056                                                         | 1350                                                   | UBC1C222MNS1MS |
| 25<br>(1E)                     | 100                                | 8 $\times$ 10                         | 0.16          | 75                                                           | 110                                                    | UBC1E101MNS1GS |
|                                | 220                                | 10 $\times$ 10                        | 0.16          | 165                                                          | 150                                                    | UBC1E221MNS1GS |
|                                | 330                                | 12.5 $\times$ 13.5                    | 0.16          | 247.5                                                        | 650                                                    | UBC1E331MNS1MS |
|                                | 470                                | 12.5 $\times$ 13.5                    | 0.16          | 352.5                                                        | 700                                                    | UBC1E471MNS1MS |
|                                | 680                                | 16 $\times$ 16.5                      | 0.16          | 510                                                          | 800                                                    | UBC1E681MNS1MS |
|                                | 1000                               | 16 $\times$ 21.5                      | 0.16          | 750                                                          | 1000                                                   | UBC1E102MNS1MS |
| 35<br>(1V)                     | 47                                 | 8 $\times$ 10                         | 0.14          | 49.35                                                        | 80                                                     | UBC1V470MNS1GS |
|                                | 100                                | 10 $\times$ 10                        | 0.14          | 105                                                          | 120                                                    | UBC1V101MNS1GS |
|                                | 220                                | 12.5 $\times$ 13.5                    | 0.14          | 231                                                          | 550                                                    | UBC1V221MNS1MS |
|                                | 330                                | 12.5 $\times$ 13.5                    | 0.14          | 346.5                                                        | 650                                                    | UBC1V331MNS1MS |
|                                | 470                                | 16 $\times$ 16.5                      | 0.14          | 493.5                                                        | 750                                                    | UBC1V471MNS1MS |
|                                | 680                                | 16 $\times$ 21.5                      | 0.14          | 714                                                          | 950                                                    | UBC1V681MNS1MS |
|                                | 1000                               | 18 $\times$ 21.5                      | 0.14          | 1050                                                         | 1150                                                   | UBC1V102MNS1MS |
| 50<br>(1H)                     | 33                                 | 8 $\times$ 10                         | 0.14          | 49.5                                                         | 70                                                     | UBC1H330MNS1GS |
|                                | 47                                 | 10 $\times$ 10                        | 0.14          | 70.5                                                         | 100                                                    | UBC1H470MNS1GS |
|                                | 100                                | 12.5 $\times$ 13.5                    | 0.12          | 150                                                          | 420                                                    | UBC1H101MNS1MS |
|                                | 220                                | 16 $\times$ 16.5                      | 0.12          | 330                                                          | 550                                                    | UBC1H221MNS1MS |
|                                | 330                                | 16 $\times$ 21.5                      | 0.12          | 495                                                          | 650                                                    | UBC1H331MNS1MS |
|                                | 470                                | 16 $\times$ 21.5                      | 0.12          | 705                                                          | 850                                                    | UBC1H471MNS1MS |
|                                | 680                                | 18 $\times$ 21.5                      | 0.12          | 1020                                                         | 1100                                                   | UBC1H681MNS1MS |

- For taping specifications, recommended land size/soldering by reflow and minimum order quantity, please refer to the Guidelines for Aluminum Electrolytic Capacitors.