



**THE DATASHEET OF  
UBC1V101MNS1GS**



# ALUMINUM ELECTROLYTIC CAPACITORS

# UBC

Chip Type, High Temperature Range,  
Vibration Resistance



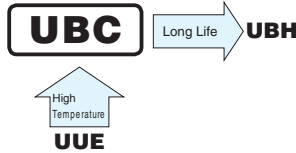
For SMD



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.



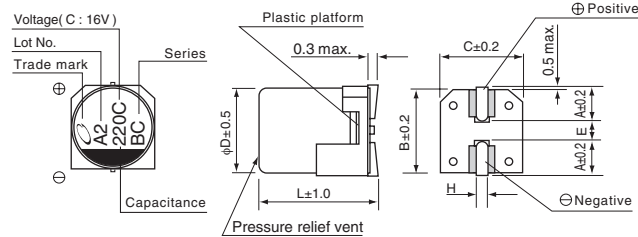
## Specifications

| 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 Z(-40°C) / Z(+20°C) (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.                                                                                    |              |      |      |      | <table border="1"> <tr> <td>Capacitance change</td> <td>Within ±30% of the initial capacitance value</td> </tr> <tr> <td>tan δ</td> <td>300% or less than the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Less than or equal to the initial specified value</td> </tr> </table> | 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 |
| 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.                                                                                                                                                                                                            |              |      |      |      |                                                                                                                                                                                                                                                                                                          |                    |                                              |       |                                               |                 |                                                   |

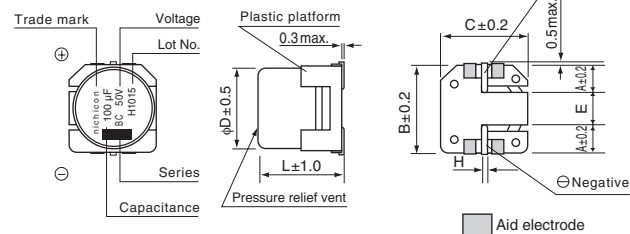
※ I : Leakage Current (μA), C : Rated Capacitance (μF), V : Rated Voltage (V)

## Chip Type

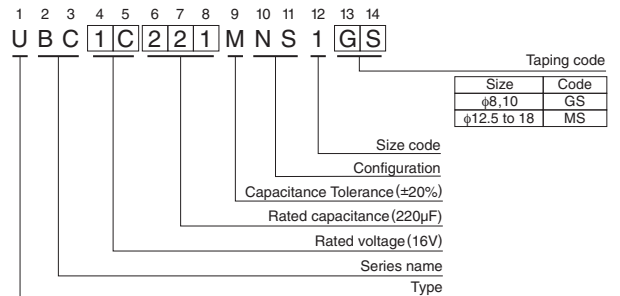
### (φ8, φ10) 【Vibration Resistance】



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

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