



**THE DATASHEET OF  
UBT1V102MHD8**



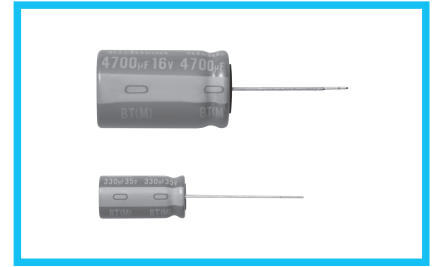
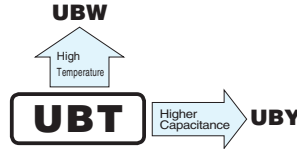
# ALUMINUM ELECTROLYTIC CAPACITORS

# UBT

High Temperature Range, For +125°C Use



- Highly dependable reliability withstanding load life of 2000 to 10000 hours at +125°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.

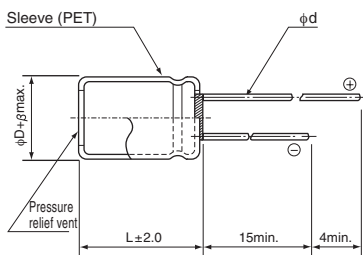


## Specifications

| Item  | Performance Characteristics   |  |   |      |        |      |          |   |           |            |            |             |  |
|---|---|--|---|------|--------|------|----------|---|-----------|------------|------------|-------------|--|
| Category Temperature Range  | -40 to +125°C (10 to 250V), -25 to +125°C (350 to 450V)   |  |   |      |        |      |          |   |           |            |            |             |  |
| Rated Voltage Range   | 10 to 450V  |  |   |      |        |      |          |   |           |            |            |             |  |
| Rated Capacitance Range   | 4.7 to 4700μF   |  |   |      |        |      |          |   |           |            |            |             |  |
| Capacitance Tolerance   | ±20% at 120Hz, 20°C   |  |   |      |        |      |          |   |           |            |            |             |  |
| Leakage Current ※   | Rated Voltage (V)   | 10 to 100  |   |      |        |      |          | 160 to 450  |           |            |            |             |  |
|   | Leakage current   | After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV (μA). |   |      |        |      |          | After 1 minute's application of rated voltage at 20°C, I = 0.04CV+100 (μA) or less. |           |            |            |             |  |
| Tangent of loss angle (tan δ)   | Rated voltage (V)   | 10   | 16  | 25   | 35     | 50   | 63       | 80  | 100       | 160 to 250 | 350 to 450 | 120Hz, 20°C |  |
|   | tan δ (max.)  | 0.20   | 0.16  | 0.14 | 0.12   | 0.10 | 0.10     | 0.08  | 0.08      | 0.20       | 0.24       |             |  |
| For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.   |   |  |   |      |        |      |          |   |           |            |            |             |  |
| Stability at Low Temperature  | Rated voltage (V)   |  |   |      |        |      |          |   |           |            |            | 120Hz       |  |
|   | Impedance ratio (max.)  | Z(-25°C) / Z(+20°C)  | 3   | 2    | 2      | 2    | 2        | 2   | 2         | 2          | 3          | 6           |  |
| The specifications listed below shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied at 125°C for the condition listed at right. The peak voltage shall not exceed the rated voltage. |   |  |   |      |        |      |          |   |           |            |            |             |  |
| Endurance   | Rated Voltage   |  |   |      | φD(mm) |      | φ8       | φ10   | ≥φ12.5    |            |            |             |  |
|   | ≤50V  |  |   |      |        |      | 2000hrs. | 5000hrs.  | 10000hrs. |            |            |             |  |
|   | 63~100V   |  |   |      |        |      | 2000hrs. | 3000hrs.  | 5000hrs.  |            |            |             |  |
|   | ≥160V   |  |   |      |        |      | 2000hrs. |   |           |            |            |             |  |
| Shelf Life  | Capacitance change  |  | Within ±30% of the initial capacitance value (10 to 100V)<br>Within ±20% of the initial capacitance value (160 to 450V)   |      |        |      |          |   |           |            |            |             |  |
|   | tan δ   |  | 300% or less than the initial specified value (10 to 100V)<br>200% or less than the initial specified value (160 to 450V) |      |        |      |          |   |           |            |            |             |  |
|   | Leakage current   |  | Less than or equal to the initial specified value   |      |        |      |          |   |           |            |            |             |  |
|   | After storing the capacitors under no load at 125°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   | Printed with white color letter on blue sleeve.   |  |   |      |        |      |          |   |           |            |            |             |  |

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

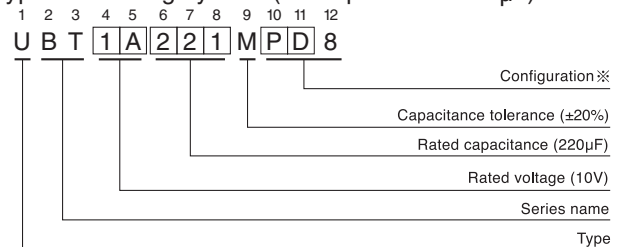
## Radial Lead Type



|    | (mm) |     |      |     |     |
|----|------|-----|------|-----|-----|
| φD | 8    | 10  | 12.5 | 16  | 18  |
| P  | 3.5  | 5.0 | 5.0  | 7.5 | 7.5 |
| φd | 0.6  | 0.6 | 0.6* | 0.8 | 0.8 |
| β  | 0.8  | 0.8 | 1.0  | 1.0 | 1.0 |

※ In case L > 25 for the φ12.5 dia. unit, lead dia. φd = 0.8mm.

## Type numbering system (Example : 10V 220μF)



※ Configuration

| φ D        | Pb-free leadwire<br>Pb-free PET sleeve |
|------------|--|
| 8,10       | PD                                     |
| 12.5 to 18 | HD                                     |

## Frequency coefficient of rated ripple current

| V         | CV        | Frequency |       |      |               |
|-----------|-----------|-----------|-------|------|---------------|
|           |           | 120Hz     | 300Hz | 1kHz | 10kHz or more |
| 10 to 100 | 1000 > CV | 0.50      | 0.64  | 0.83 | 1.00          |
|           | 1000 ≤ CV | 0.67      | 0.79  | 0.91 | 1.00          |

| V          | Cap. (μF) | Frequency |       |       |      |       |                |
|------------|-----------|-----------|-------|-------|------|-------|----------------|
|            |           | 50Hz      | 120Hz | 300Hz | 1kHz | 10kHz | 100kHz or more |
| 160 to 450 | 4.7 to 33 | 0.75      | 1.00  | 1.25  | 1.50 | 1.75  | 1.80           |
|            | 47 to 150 | 0.80      | 1.00  | 1.15  | 1.30 | 1.40  | 1.50           |

- Please refer to the Guidelines for Aluminum Electrolytic Capacitors for end seal configuration information.

● Dimension table in next page.

## UBT

### ■ Dimensions

| Rated Voltage (V) (code) | Rated Capacitance (μF) | Case Size φD×L (mm) | tan δ | Leakage Current (μA) (at 20°C after 1 minute) | Impedance (Ω) max. (20°C/100kHz) | Rated Ripple (mA rms) (125°C/100kHz) | Part Number  |
|--------------------------|------------------------|---------------------|-------|---|----------------------------------|--------------------------------------|--------------|
| 10 (1A)                  | 220                    | 8×11.5              | 0.20  | 66  | 0.26                             | 340                                  | UBT1A221MPD8 |
|                          | 330                    | 10×12.5             | 0.20  | 99  | 0.15                             | 620                                  | UBT1A331MPD8 |
|                          | 470                    | 10×12.5             | 0.20  | 141   | 0.10                             | 680                                  | UBT1A471MPD8 |
|                          | 1000                   | 10×20               | 0.20  | 300   | 0.057                            | 1100                                 | UBT1A102MPD8 |
|                          | 2200                   | 12.5×25             | 0.22  | 660   | 0.033                            | 1750                                 | UBT1A222MHD8 |
|                          | 3300                   | 16×25               | 0.24  | 990   | 0.024                            | 2300                                 | UBT1A332MHD8 |
|                          | 4700                   | 16×30.5             | 0.26  | 1410  | 0.020                            | 2710                                 | UBT1A472MHD8 |
| 16 (1C)                  | 100                    | 8×11.5              | 0.16  | 48  | 0.32                             | 340                                  | UBT1C101MPD8 |
|                          | 220                    | 10×12.5             | 0.16  | 105.6   | 0.15                             | 620                                  | UBT1C221MPD8 |
|                          | 330                    | 10×12.5             | 0.16  | 158.4   | 0.10                             | 680                                  | UBT1C331MPD8 |
|                          | 470                    | 10×16               | 0.16  | 225.6   | 0.075                            | 945                                  | UBT1C471MPD8 |
|                          | 1000                   | 12.5×20             | 0.16  | 480   | 0.042                            | 1490                                 | UBT1C102MHD8 |
|                          | 2200                   | 16×25               | 0.18  | 1056  | 0.024                            | 2300                                 | UBT1C222MHD8 |
|                          | 3300                   | 16×30.5             | 0.20  | 1584  | 0.020                            | 2710                                 | UBT1C332MHD8 |
| 25 (1E)                  | 100                    | 8×11.5              | 0.14  | 75  | 0.13                             | 500                                  | UBT1E101MPD8 |
|                          | 220                    | 10×12.5             | 0.14  | 165   | 0.10                             | 680                                  | UBT1E221MPD8 |
|                          | 330                    | 10×16               | 0.14  | 247.5   | 0.075                            | 945                                  | UBT1E331MPD8 |
|                          | 470                    | 10×20               | 0.14  | 352.5   | 0.057                            | 1100                                 | UBT1E471MPD8 |
|                          | 1000                   | 12.5×25             | 0.14  | 750   | 0.033                            | 1750                                 | UBT1E102MHD8 |
|                          | 2200                   | 16×30.5             | 0.16  | 1650  | 0.020                            | 2710                                 | UBT1E222MHD8 |
|                          | 3300                   | 18×30.5             | 0.18  | 2475  | 0.017                            | 3310                                 | UBT1E332MHD8 |
| 35 (1V)                  | 100                    | 10×12.5             | 0.12  | 105   | 0.15                             | 620                                  | UBT1V101MPD8 |
|                          | 220                    | 10×16               | 0.12  | 231   | 0.094                            | 790                                  | UBT1V221MPD8 |
|                          | 330                    | 10×20               | 0.12  | 346.5   | 0.075                            | 950                                  | UBT1V331MPD8 |
|                          | 470                    | 12.5×20             | 0.12  | 493.5   | 0.058                            | 1330                                 | UBT1V471MHD8 |
|                          | 1000                   | 16×25               | 0.12  | 1050  | 0.031                            | 2010                                 | UBT1V102MHD8 |
|                          | 2200                   | 18×35.5             | 0.14  | 2310  | 0.025                            | 2790                                 | UBT1V222MHD8 |
| 50 (1H)                  | 4.7                    | 8×11.5              | 0.10  | 7.05  | 1.15                             | 85                                   | UBT1H4R7MPD8 |
|                          | 10                     | 8×11.5              | 0.10  | 15  | 0.75                             | 180                                  | UBT1H100MPD8 |
|                          | 22                     | 8×11.5              | 0.10  | 33  | 0.50                             | 250                                  | UBT1H220MPD8 |
|                          | 33                     | 8×11.5              | 0.10  | 49.5  | 0.45                             | 300                                  | UBT1H330MPD8 |
|                          | 47                     | 8×11.5              | 0.10  | 70.5  | 0.35                             | 440                                  | UBT1H470MPD8 |
|                          | 100                    | 10×12.5             | 0.10  | 150   | 0.18                             | 555                                  | UBT1H101MPD8 |
|                          | 220                    | 10×20               | 0.10  | 330   | 0.098                            | 930                                  | UBT1H221MPD8 |
|                          | 330                    | 12.5×20             | 0.10  | 495   | 0.070                            | 1330                                 | UBT1H331MHD8 |
|                          | 470                    | 12.5×25             | 0.10  | 705   | 0.055                            | 1650                                 | UBT1H471MHD8 |
|                          | 1000                   | 16×30.5             | 0.10  | 1500  | 0.031                            | 2430                                 | UBT1H102MHD8 |
| 63 (1J)                  | 22                     | 8×11.5              | 0.10  | 41.58   | 2.00                             | 130                                  | UBT1J220MPD8 |
|                          | 33                     | 8×11.5              | 0.10  | 62.37   | 1.50                             | 150                                  | UBT1J330MPD8 |
|                          | 47                     | 10×12.5             | 0.10  | 88.83   | 0.59                             | 530                                  | UBT1J470MPD8 |
|                          | 100                    | 10×16               | 0.10  | 189   | 0.41                             | 690                                  | UBT1J101MPD8 |
|                          | 220                    | 12.5×20             | 0.10  | 415.8   | 0.16                             | 1050                                 | UBT1J221MHD8 |
|                          | 330                    | 12.5×25             | 0.10  | 623.7   | 0.12                             | 1290                                 | UBT1J331MHD8 |
|                          | 470                    | 12.5×30.5           | 0.10  | 888.3   | 0.097                            | 1460                                 | UBT1J471MHD8 |

## UBT

### ■ Dimensions

| Rated Voltage (V) (code) | Rated Capacitance (μF) | Case Size φD×L (mm) | tan δ | Leakage Current (μA) (at 20°C after 1 minute) | Impedance (Ω) max. (20°C/100kHz) | Rated Ripple (mArms) (125°C/100kHz) | Part Number  |
|--------------------------|------------------------|---------------------|-------|---|----------------------------------|-------------------------------------|--------------|
| 80 (1K)                  | 22                     | 8×11.5              | 0.08  | 52.8  | 1.50                             | 150                                 | UBT1K220MPD8 |
|                          | 33                     | 10×12.5             | 0.08  | 79.2  | 0.80                             | 480                                 | UBT1K330MPD8 |
|                          | 47                     | 10×12.5             | 0.08  | 112.8   | 0.80                             | 480                                 | UBT1K470MPD8 |
|                          | 100                    | 10×20               | 0.08  | 240   | 0.39                             | 790                                 | UBT1K101MPD8 |
|                          | 220                    | 12.5×25             | 0.08  | 528   | 0.18                             | 1240                                | UBT1K221MHD8 |
|                          | 330                    | 12.5×30.5           | 0.08  | 792   | 0.16                             | 1390                                | UBT1K331MHD8 |
| 100 (2A)                 | 470                    | 16×25               | 0.08  | 1128  | 0.11                             | 1500                                | UBT1K471MHD8 |
|                          | 10                     | 8×11.5              | 0.08  | 30  | 1.50                             | 150                                 | UBT2A100MPD8 |
|                          | 22                     | 10×12.5             | 0.08  | 66  | 0.80                             | 480                                 | UBT2A220MPD8 |
|                          | 33                     | 10×12.5             | 0.08  | 99  | 0.80                             | 480                                 | UBT2A330MPD8 |
|                          | 47                     | 10×16               | 0.08  | 141   | 0.55                             | 630                                 | UBT2A470MPD8 |
|                          | 100                    | 12.5×20             | 0.08  | 300   | 0.25                             | 990                                 | UBT2A101MHD8 |
|                          | 220                    | 16×25               | 0.08  | 660   | 0.11                             | 1500                                | UBT2A221MHD8 |
| 330                      | 16×30.5                | 0.08                | 990   | 0.079   | 1790                             | UBT2A331MHD8                        |              |

| Rated Voltage (V) (code) | Rated Capacitance (μF) | Case Size φD×L (mm) | tan δ | Leakage Current (μA) (at 20°C after 1 minute) | Rated Ripple (mArms) (125°C/120Hz) | Part Number  |
|--------------------------|------------------------|---------------------|-------|---|------------------------------------|--------------|
| 160 (2C)                 | 22                     | 10×20               | 0.20  | 240.8   | 115                                | UBT2C220MPD8 |
|                          | 33                     | 10×25               | 0.20  | 311.2   | 154                                | UBT2C330MPD8 |
|                          | 47                     | 12.5×20             | 0.20  | 400.8   | 187                                | UBT2C470MHD8 |
|                          | 68                     | 12.5×25             | 0.20  | 535.2   | 245                                | UBT2C680MHD8 |
|                          | 100                    | 16×25               | 0.20  | 740   | 329                                | UBT2C101MHD8 |
|                          | 150                    | 16×30.5             | 0.20  | 1060  | 434                                | UBT2C151MHD8 |
| 200 (2D)                 | 10                     | 10×20               | 0.20  | 180   | 78                                 | UBT2D100MPD8 |
|                          | 22                     | 10×25               | 0.20  | 276   | 126                                | UBT2D220MPD8 |
|                          | 33                     | 12.5×20             | 0.20  | 364   | 157                                | UBT2D330MHD8 |
|                          | 47                     | 12.5×25             | 0.20  | 476   | 204                                | UBT2D470MHD8 |
|                          | 68                     | 16×20               | 0.20  | 644   | 250                                | UBT2D680MHD8 |
| 250 (2E)                 | 100                    | 16×25               | 0.20  | 900   | 329                                | UBT2D101MHD8 |
|                          | 10                     | 10×20               | 0.20  | 200   | 78                                 | UBT2E100MPD8 |
|                          | 22                     | 12.5×20             | 0.20  | 320   | 128                                | UBT2E220MHD8 |
|                          | 33                     | 12.5×25             | 0.20  | 430   | 171                                | UBT2E330MHD8 |
| 350 (2V)                 | 47                     | 16×25               | 0.20  | 570   | 225                                | UBT2E470MHD8 |
|                          | 68                     | 16×30.5             | 0.20  | 780   | 292                                | UBT2E680MHD8 |
|                          | 4.7                    | 10×20               | 0.24  | 165.8   | 53                                 | UBT2V4R7MPD8 |
|                          | 10                     | 10×25               | 0.24  | 240   | 85                                 | UBT2V100MPD8 |
| 400 (2G)                 | 22                     | 12.5×25             | 0.24  | 408   | 139                                | UBT2V220MHD8 |
|                          | 33                     | 16×25               | 0.24  | 562   | 189                                | UBT2V330MHD8 |
|                          | 47                     | 16×30.5             | 0.24  | 758   | 243                                | UBT2V470MHD8 |
|                          | 4.7                    | 10×20               | 0.24  | 175.2   | 53                                 | UBT2G4R7MPD8 |
|                          | 10                     | 10×25               | 0.24  | 260   | 86                                 | UBT2G100MPD8 |
| 450 (2W)                 | 22                     | 12.5×30.5           | 0.24  | 452   | 142                                | UBT2G220MHD8 |
|                          | 33                     | 16×25               | 0.24  | 628   | 189                                | UBT2G330MHD8 |
|                          | 47                     | 16×30.5             | 0.24  | 852   | 243                                | UBT2G470MHD8 |
|                          | 4.7                    | 10×25               | 0.24  | 184.6   | 58                                 | UBT2W4R7MPD8 |
| 450 (2W)                 | 10                     | 12.5×20             | 0.24  | 280   | 86                                 | UBT2W100MHD8 |
|                          | 22                     | 16×25               | 0.24  | 496   | 154                                | UBT2W220MHD8 |
|                          | 33                     | 16×30.5             | 0.24  | 694   | 203                                | UBT2W330MHD8 |

• For formed lead or taped product specifications and minimum order quantity, please refer to the Guidelines for Aluminum Electrolytic Capacitors.

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