

# ALUMINUM ELECTROLYTIC CAPACITORS

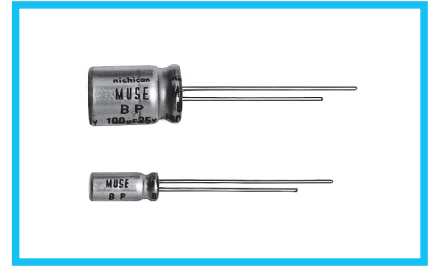


Bi-Polarized, For Audio Equipment



- Bi-polarized “nichicon MUSE” acoustic series.
- Suited for audio signal circuits.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).

Valued marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

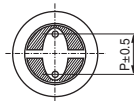
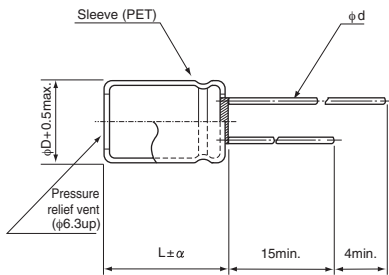


## Specifications

| Item                          | Performance Characteristics  |                     |      |      |      |      |                    |   |
|-------------------------------|--|---------------------|------|------|------|------|--------------------|---|
| Category Temperature Range    | -40 to +85°C   |                     |      |      |      |      |                    |   |
| Rated Voltage Range           | 6.3 to 50V   |                     |      |      |      |      |                    |   |
| Rated Capacitance Range       | 1 to 1000μF  |                     |      |      |      |      |                    |   |
| 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 or 3 (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.)   | 0.24                | 0.20 | 0.16 | 0.16 | 0.14 | 0.12               |   |
| Stability at Low Temperature  | Measurement frequency : 120Hz  |                     |      |      |      |      |                    |   |
|                               | Rated voltage (V)  |                     | 6.3  | 10   | 16   | 25   | 35                 | 50  |
|                               | Impedance ratio (max.)   | Z(-25°C) / Z(+20°C) | 4    | 3    | 2    | 2    | 2                  | 2   |
| Z(-40°C) / Z(+20°C)           |  | 8                   | 6    | 4    | 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 85°C with the polarity inverted every 250 hours.   |                     |      |      |      |      | Capacitance change | Within ±20% of the initial capacitance value      |
|                               |  |                     |      |      |      |      | tan δ              | 150% 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 85°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 black color letter on clear green sleeve.   |                     |      |      |      |      |                    |   |

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

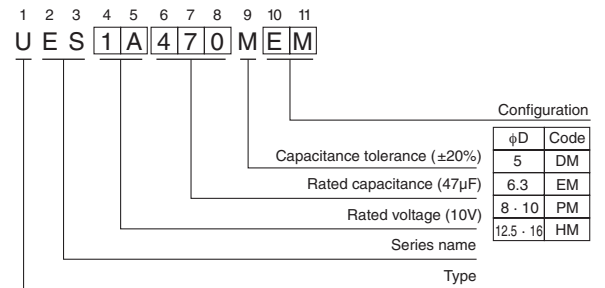
## Radial Lead Type



|    | (mm) |     |     |     |      |     |  |
|----|------|-----|-----|-----|------|-----|--|
| φD | 5    | 6.3 | 8   | 10  | 12.5 | 16  |  |
| P  | 2.0  | 2.5 | 3.5 | 5.0 | 5.0  | 7.5 |  |
| φd | 0.6  | 0.6 | 0.6 | 0.6 | 0.8  | 0.8 |  |

|   |          |     |
|---|----------|-----|
| α | (φD < 8) | 1.0 |
|   | (φD ≥ 8) | 1.5 |

## Type numbering system (Example : 10V 47μF)



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

● Dimension table in next page.

UES

## ■ Dimensions

| Rated Voltage<br>(V)<br>(code) | Rated<br>Capacitance<br>( $\mu$ F) | Case Size<br>$\phi$ D×L (mm) | tan $\delta$ | Leakage Current<br>( $\mu$ A)<br>(at 20°C after<br>1 minute) | Part Number  |
|--------------------------------|------------------------------------|------------------------------|--------------|--|--------------|
| 6.3<br>(0J)                    | 33                                 | 5×11                         | 0.24         | 6.237  | ※UES0J330MDM |
|                                | 47                                 | 6.3×11                       | 0.24         | 8.883  | ※UES0J470MEM |
|                                | 100                                | 8×11.5                       | 0.24         | 18.9   | UES0J101MPM  |
|                                | 220                                | 10×12.5                      | 0.24         | 41.58  | UES0J221MPM  |
|                                | 330                                | 10×16                        | 0.24         | 62.37  | UES0J331MPM  |
|                                | 470                                | 10×20                        | 0.24         | 88.83  | UES0J471MPM  |
|                                | 1000                               | 12.5×25                      | 0.24         | 189  | UES0J102MHM  |
| 10<br>(1A)                     | 22                                 | 5×11                         | 0.20         | 6.6  | ※UES1A220MDM |
|                                | 33                                 | 6.3×11                       | 0.20         | 9.9  | ※UES1A330MEM |
|                                | 47                                 | 6.3×11                       | 0.20         | 14.1   | ※UES1A470MEM |
|                                | 100                                | 10×12.5                      | 0.20         | 30   | UES1A101MPM  |
|                                | 220                                | 10×16                        | 0.20         | 66   | UES1A221MPM  |
|                                | 330                                | 10×20                        | 0.20         | 99   | UES1A331MPM  |
|                                | 470                                | 12.5×20                      | 0.20         | 141  | UES1A471MHM  |
|                                | 1000                               | 16×25                        | 0.20         | 300  | UES1A102MHM  |
| 16<br>(1C)                     | 10                                 | 5×11                         | 0.16         | 4.8  | ※UES1C100MDM |
|                                | 22                                 | 6.3×11                       | 0.16         | 10.56  | ※UES1C220MEM |
|                                | 33                                 | 6.3×11                       | 0.16         | 15.84  | ※UES1C330MEM |
|                                | 47                                 | 8×11.5                       | 0.16         | 22.56  | UES1C470MPM  |
|                                | 100                                | 10×12.5                      | 0.16         | 48   | UES1C101MPM  |
|                                | 220                                | 10×20                        | 0.16         | 105.6  | UES1C221MPM  |
|                                | 330                                | 12.5×20                      | 0.16         | 158.4  | UES1C331MHM  |
|                                | 470                                | 12.5×25                      | 0.16         | 225.6  | UES1C471MHM  |
|                                | 1000                               | 16×25                        | 0.16         | 480  | UES1C102MHM  |
| 25<br>(1E)                     | 4.7                                | 5×11                         | 0.16         | 3.525  | ※UES1E4R7MDM |
|                                | 10                                 | 5×11                         | 0.16         | 7.5  | ※UES1E100MDM |
|                                | 22                                 | 6.3×11                       | 0.16         | 16.5   | ※UES1E220MEM |
|                                | 33                                 | 8×11.5                       | 0.16         | 24.75  | UES1E330MPM  |
|                                | 47                                 | 10×12.5                      | 0.16         | 35.25  | UES1E470MPM  |
|                                | 100                                | 10×16                        | 0.16         | 75   | UES1E101MPM  |
|                                | 220                                | 12.5×25                      | 0.16         | 165  | UES1E221MHM  |
|                                | 330                                | 12.5×25                      | 0.16         | 247.5  | UES1E331MHM  |
|                                | 470                                | 16×25                        | 0.16         | 352.5  | UES1E471MHM  |
|                                | 1000                               | 16×30.5                      | 0.16         | 750  | UES1E102MHM  |
| 35<br>(1V)                     | 4.7                                | 5×11                         | 0.14         | 4.935  | ※UES1V4R7MDM |
|                                | 10                                 | 6.3×11                       | 0.14         | 10.5   | ※UES1V100MEM |
|                                | 22                                 | 8×11.5                       | 0.14         | 23.1   | UES1V220MPM  |
|                                | 33                                 | 10×12.5                      | 0.14         | 34.65  | UES1V330MPM  |
|                                | 47                                 | 10×12.5                      | 0.14         | 49.35  | UES1V470MPM  |
|                                | 100                                | 10×20                        | 0.14         | 105  | UES1V101MPM  |
|                                | 220                                | 12.5×25                      | 0.14         | 231  | UES1V221MHM  |
|                                | 330                                | 16×25                        | 0.14         | 346.5  | UES1V331MHM  |
|                                | 470                                | 16×25                        | 0.14         | 493.5  | UES1V471MHM  |

For cut leads, formed leads or taped parts, please add the appropriate code after the size code (12th digit).  
If there is no size code in the part number, please add size code "1" and then add the appropriate code.

## UES

## ■ 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) | Part Number  |
|--------------------------------|------------------------------------|---------------------------------------|--------------|--|--------------|
| 50<br>(1H)                     | 1                                  | 5 $\times$ 11                         | 0.12         | 3  | ※UES1H010MDM |
|                                | 2.2                                | 5 $\times$ 11                         | 0.12         | 3.3  | ※UES1H2R2MDM |
|                                | 3.3                                | 5 $\times$ 11                         | 0.12         | 4.95   | ※UES1H3R3MDM |
|                                | 4.7                                | 6.3 $\times$ 11                       | 0.12         | 7.05   | ※UES1H4R7MEM |
|                                | 10                                 | 8 $\times$ 11.5                       | 0.12         | 15   | UES1H100MPM  |
|                                | 22                                 | 10 $\times$ 12.5                      | 0.12         | 33   | UES1H220MPM  |
|                                | 33                                 | 10 $\times$ 16                        | 0.12         | 49.5   | UES1H330MPM  |
|                                | 47                                 | 10 $\times$ 20                        | 0.12         | 70.5   | UES1H470MPM  |
|                                | 100                                | 12.5 $\times$ 25                      | 0.12         | 150  | UES1H101MHM  |
|                                | 220                                | 16 $\times$ 25                        | 0.12         | 330  | UES1H221MHM  |
| 330                            | 16 $\times$ 30.5                   | 0.12                                  | 495          | UES1H331MHM  |              |

For cut leads, formed leads or taped parts, please add the appropriate code after the size code (12th digit).  
If there is no size code in the part number, please add size code "1" and then add the appropriate code.

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