

# ALUMINUM ELECTROLYTIC CAPACITORS

nichicon



ES

Bi-Polarized, For Audio Equipment

series



For Audio Use



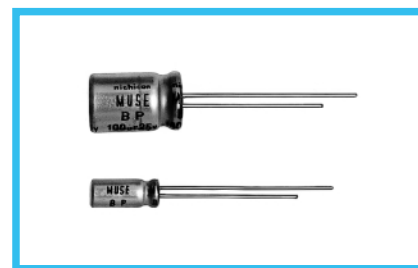
Bi-polarized



Anti-Solvent Feature

- Bi-polarized "nichicon MUSE" acoustic series.
- Suited for audio signal circuits.
- Compliant to the RoHS directive (2002/95/EC).

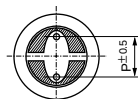
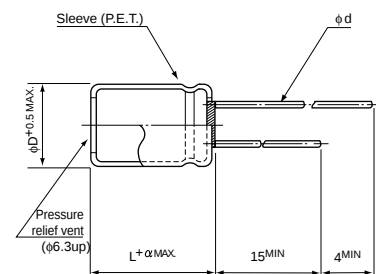
ES ← Bi-polarized → FW



## Specifications

| Item                          | Performance Characteristics                                                                                                                                                                                                            |                 |      |      |                    |      |      |                                                   |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------|------|--------------------|------|------|---------------------------------------------------|
| Category Temperature Range    | −40 to +85°C                                                                                                                                                                                                                           |                 |      |      |                    |      |      |                                                   |
| Rated Voltage Range           | 6.3 to 50V                                                                                                                                                                                                                             |                 |      |      |                    |      |      |                                                   |
| Rated Capacitance Range       | 0.47 to 1000μF                                                                                                                                                                                                                         |                 |      |      |                    |      |      |                                                   |
| Capacitance Tolerance         | ±20% at 120Hz, 20°C                                                                                                                                                                                                                    |                 |      |      |                    |      |      |                                                   |
| Leakage Current               | After 1 minute's application of rated voltage, 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                                                                                                                                                                                                                        | Z−25°C / Z+20°C | 4    | 3    | 2                  | 2    | 2    | 2                                                 |
|                               | ZT / Z20 (MAX.)                                                                                                                                                                                                                        | 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.                                                                                                                                                                                 |                 |      |      |                    |      |      |                                                   |

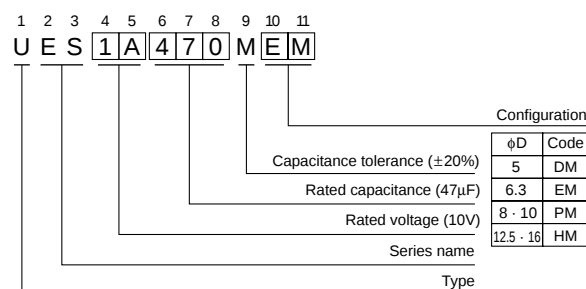
## Radial Lead Type



|    | 5   | 6.3 | 8   | 10  | 12.5 | 16  |
|----|-----|-----|-----|-----|------|-----|
| 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 < 10) 1.0 |
|   | (φD ≥ 10) 1.5 |

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



- Please refer to page 20 about the end seal configuration.

## Dimensions

| V        |      | 6.3     | 10      | 16      | 25      | 35      | 50      |
|----------|------|---------|---------|---------|---------|---------|---------|
| Cap.(μF) | Code | 0J      | 1A      | 1C      | 1E      | 1V      | 1H      |
| 0.47     | R47  |         |         |         |         |         | 5×11    |
| 1        | 010  |         |         |         |         |         | 5×11    |
| 2.2      | 2R2  |         |         |         |         |         | 5×11    |
| 3.3      | 3R3  |         |         |         |         |         | 5×11    |
| 4.7      | 4R7  |         |         |         | 5×11    | 5×11    | 6.3×11  |
| 10       | 100  |         |         | 5×11    | 5×11    | 6.3×11  | 8×11.5  |
| 22       | 220  |         | 5×11    | 6.3×11  | 6.3×11  | 8×11.5  | 10×12.5 |
| 33       | 330  | 5×11    | 6.3×11  | 6.3×11  | 8×11.5  | 10×12.5 | 10×16   |
| 47       | 470  | 6.3×11  | 6.3×11  | 8×11.5  | 10×12.5 | 10×12.5 | 10×20   |
| 100      | 101  | 8×11.5  | 10×12.5 | 10×12.5 | 10×16   | 10×20   | 12.5×25 |
| 220      | 221  | 10×12.5 | 10×16   | 10×20   | 12.5×25 | 12.5×25 | 16×25   |
| 330      | 331  | 10×16   | 10×20   | 12.5×20 | 12.5×25 | 16×25   | 16×31.5 |
| 470      | 471  | 10×20   | 12.5×20 | 12.5×25 | 16×25   | 16×25   |         |
| 1000     | 102  | 12.5×25 | 16×25   | 16×25   | 16×31.5 |         |         |

Please refer to page 20, 21, 22 about the formed or taped product spec.  
Please refer to page 4 for the minimum order quantity.

CAT.8100B