# ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

## NU

Screw Terminal Type, 105°C
High Voltage, Smaller Sized.
series

Smaller | High Ripple Current

- Suited for use in industrial power supplies for inverter circuitry, etc.
- Rated voltage range up to DC525V.
- Load life of 5000 hours application of ripple current at 105°C.
- High voltage / Smaller sized than NT series.
- Coped with loading of high speed charge-discharge.
- Suited for high frequency regenerative voltage for AC servomotor, general inverter.
- Compliant to the RoHS directive (2011/65/EU).

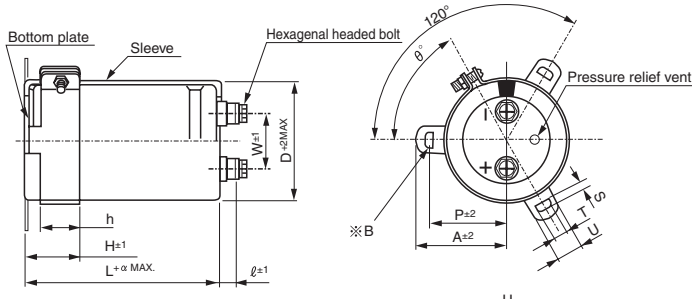
NU
High Voltage Smaller
NT



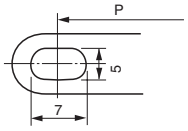
## ■Specifications

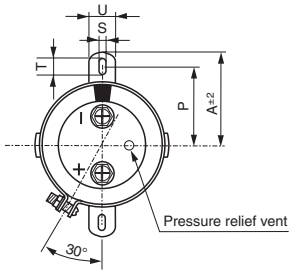
| Item | Performance Characteristics |
|---|---|
| Category Temperature Range | – 40 to +105°C |
| Rated Voltage Range | 400 to 525V |
| Rated Capacitance Range | 680 to 18000μF |
| Capacitance Tolerance | ±20% (120Hz, 20°C) |
| Leakage Current | After 5 minutes' application of rated voltage, leakage current is not more than $3\sqrt{CV}$ (μA) or 5 mA, whichever is smaller. (at 20°C)<br>[C : Rated Capacitance(μF), V : Voltage (V)] |
| Tangent of loss angle (tan δ) | 0.2MAX. (120Hz at 20°C) |
| Stability at Low Temperature | Rated voltage(V) 400 to 525 / Impedance ratio ZT/Z20(MAX.) Z – 40°C / Z+20°C : 8 — Measurement frequeny : 120Hz |
| Insulation Resistance | The insulation resistance shall be more than 100MΩ at DC 500V application between terminal and bracket. |
| Voltage proof | There is no abnormality during AC 2500V 1 minute's application between terminal and bracket. |
| Endurance | The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 5000 hours at 105°C, the peak voltage shall not exceed the rated voltage. — Capacitance change: Within ±20% of the initial capacitance value; tan δ: 200% 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 105°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 reguirements listed at right. — Capacitance change: Within ±20% of the initial capacitance value; tan δ: 200% or less than the initial specified value; Leakage current: Less than or equal to the initial specified value |
| Endurance of charge - discharge behavior | After an application of charge-discharge voltage for 50million times (charge-discharge voltage difference(ΔV) = rated voltage × 0.3, cycle 3Hz) capacitors shall meet the characteristics requirement listed at right. — Capacitance change: Within ±20% of the initial capacitance value; tan δ: 200% or less than the initial specified value; Leakage current: Less than or equal to the initial specified value |
| Marking | Printed with white color letter on black sleeve |

## ■Drawing




※ B
3-leg brackets for ϕ90 capacitors have different hole shapes from the ordinary ones illustrated below.




Note) The brackets will be supplied in the separate box.

### Type numbering system (Example : 500V 4700μF)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L | N | U | 2 | H | 4 | 7 | 2 | M | S | E | H | | |

- 1–3: Type
- 4–5: Series name
- 6–8: Rated voltage (500V)
- 9: Rated Capacitance (4700μF)
- 10: Capacitance tolerance (±20%)
- 11–12: Configuration※
- 13–14: Case dia. code

| ϕD | Code |
|---|---|
| 51 | F |
| 63.5 | G |
| 76.2 | H |
| 90 | J |

Mounting bracket (ϕ51 to ϕ90)

| | |
|---|---|
| Code less | 3-leg brackets |
| BB | 2-leg brackets |
| BN | No brackets |
| Code less | Stud mount type |

※Configuration

| standerd specifications | stud mount type |
|---|---|
| SE | TE |

Please refer to page 328 for schematic of dimensions.
※ Please contact to us if PVC less products are required.

● Dimension of terminal pitch (W) and length ( ℓ ) and Nominal dia.of bolt (mm)

| ϕD | W | ℓ | α | Nominal dia. of bolt |
|---|---|---|---|---|
| 51 | 22.0 | 6 | 3 | M5 |
| 63.5 | 28.6 | 6 | 3 | M5 |
| 76.2 | 31.8 | 6 | 3 | M5 |
| 90 | 31.8 | 6 | 3 | M5 |

About product of stud bolt
- Nylon nut and nylon washer attachment become the standard specifications. (cf. P.328)
- It is not attached to the bracket.
- Field 13 and 14 become blank in Type number system.

● Dimensions of mounting bracket (mm)

| Leg shape / Symbol / ϕD | 3–Leg | | | | 2–Leg | | | |
|---|---|---|---|---|---|---|---|---|
| | 51 | 63.5 | 76.2 | 90 | 51 | 63.5 | 76.2 | 90 |
| P | 32.5 | 38.1 | 44.5 | 50.8 | 33.2 | 40.5 | 46.5 | 53 |
| A | 38.5 | 43 | 49.2 | 58.5 | 40 | 46.5 | 53 | 59 |
| T | 7.5 | 8.0 | 7.0 | 8.0 | 6.0 | 7.0 | 6.0 | 6.0 |
| S | 5.0 | 5.0 | 5.0 | 5.0 | 4.5 | 4.5 | 4.5 | 4.5 |
| U | 12 | 14 | 14 | 18 | 14 | 14 | 14 | 14 |
| θ° | 60 | 60 | 60 | 60 | 30 | 30 | 30 | 30 |
| H | 20 | 25 | 30 | 35 | 25 | 35 | 35 | 35 |
| h | 15 | 20 | 24 | 25 | 15 | 20 | 20 | 20 |

● Dimension table in next page.

# NU series

## ■Dimensions

| 400V (2G) | | | | | |
|---|---|---|---|---|---|
| Cap. (μF) | Size φD × L(mm) | Rated ripple (Arms) | tan δ | Leakage Current (mA) | Code |
| 2700 | 63.5×80 | 11.9 | 0.20 | 3.12 | LNU2G272MSEG |
| 3300 | 63.5×95 | 13.6 | 0.20 | 3.45 | LNU2G332MSEG |
| | 76.2×75 | 13.1 | 0.20 | 3.45 | LNU2G332MSEH |
| 3900 | 63.5×100 | 14.6 | 0.20 | 3.75 | LNU2G392MSEG |
| | 76.2×85 | 14.3 | 0.20 | 3.75 | LNU2G392MSEH |
| 4700 | 63.5×120 | 16.1 | 0.20 | 4.11 | LNU2G472MSEG |
| | 76.2×95 | 15.8 | 0.20 | 4.11 | LNU2G472MSEH |
| 5600 | 63.5×135 | 17.7 | 0.20 | 4.49 | LNU2G562MSEG |
| | 76.2×105 | 17.1 | 0.20 | 4.49 | LNU2G562MSEH |
| 6800 | 76.2×125 | 19.5 | 0.20 | 4.95 | LNU2G682MSEH |
| | 90×105 | 18.8 | 0.20 | 4.95 | LNU2G682MSEJ |
| 8200 | 76.2×170 | 24.2 | 0.20 | 5.00 | LNU2G822MSEH |
| | 90×125 | 23.1 | 0.20 | 5.00 | LNU2G822MSEJ |
| 10000 | 90×145 | 25.9 | 0.20 | 5.00 | LNU2G103MSEJ |
| 12000 | 90×165 | 30.1 | 0.20 | 5.00 | LNU2G123MSEJ |
| 15000 | 90×195 | 33.5 | 0.20 | 5.00 | LNU2G153MSEJ |
| 18000 | 90×235 | 38.0 | 0.20 | 5.00 | LNU2G183MSEJ |

| 450V (2W) | | | | | |
|---|---|---|---|---|---|
| Cap. (μF) | Size φD × L(mm) | Rated ripple (Arms) | tan δ | Leakage Current (mA) | Code |
| 2700 | 63.5×100 | 13.1 | 0.20 | 3.31 | LNU2W272MSEG |
| 3300 | 63.5×120 | 15.0 | 0.20 | 3.66 | LNU2W332MSEG |
| | 76.2×95 | 14.4 | 0.20 | 3.66 | LNU2W332MSEH |
| 3900 | 63.5×135 | 16.3 | 0.20 | 3.97 | LNU2W392MSEG |
| | 76.2×105 | 15.4 | 0.20 | 3.97 | LNU2W392MSEH |
| 4700 | 63.5×165 | 18.5 | 0.20 | 4.36 | LNU2W472MSEG |
| | 76.2×130 | 17.9 | 0.20 | 4.36 | LNU2W472MSEH |
| 5600 | 76.2×150 | 20.5 | 0.20 | 4.76 | LNU2W562MSEH |
| | 90×105 | 19.6 | 0.20 | 4.76 | LNU2W562MSEJ |
| 6800 | 76.2×170 | 23.4 | 0.20 | 5.00 | LNU2W682MSEH |
| | 90×125 | 22.5 | 0.20 | 5.00 | LNU2W682MSEJ |
| 8200 | 76.2×195 | 25.7 | 0.20 | 5.00 | LNU2W822MSEH |
| | 90×145 | 24.7 | 0.20 | 5.00 | LNU2W822MSEJ |
| 10000 | 90×165 | 27.3 | 0.20 | 5.00 | LNU2W103MSEJ |
| 12000 | 90×195 | 29.9 | 0.20 | 5.00 | LNU2W123MSEJ |
| 15000 | 90×235 | 34.5 | 0.20 | 5.00 | LNU2W153MSEJ |

| 500V (2H) | | | | | |
|---|---|---|---|---|---|
| Cap. (μF) | Size φD × L(mm) | Rated ripple (Arms) | tan δ | Leakage Current (mA) | Code |
| 680 | 51×75 | 4.0 | 0.20 | 1.75 | LNU2H681MSEF |
| 1000 | 51×90 | 5.0 | 0.20 | 2.12 | LNU2H102MSEF |
| 1200 | 51×115 | 5.7 | 0.20 | 2.32 | LNU2H122MSEF |
| | 63.5×80 | 5.7 | 0.20 | 2.32 | LNU2H122MSEG |
| 1500 | 51×135 | 6.6 | 0.20 | 2.60 | LNU2H152MSEF |
| | 63.5×90 | 6.6 | 0.20 | 2.60 | LNU2H152MSEG |
| 1800 | 63.5×100 | 7.4 | 0.20 | 2.85 | LNU2H182MSEG |
| | 76.2×70 | 7.4 | 0.20 | 2.85 | LNU2H182MSEH |
| 2200 | 63.5×120 | 8.5 | 0.20 | 3.15 | LNU2H222MSEG |
| | 76.2×95 | 8.5 | 0.20 | 3.15 | LNU2H222MSEH |
| 2700 | 63.5×135 | 9.6 | 0.20 | 3.49 | LNU2H272MSEG |
| | 76.2×105 | 9.6 | 0.20 | 3.49 | LNU2H272MSEH |
| 3300 | 63.5×165 | 10.9 | 0.20 | 3.85 | LNU2H332MSEG |
| | 76.2×130 | 10.9 | 0.20 | 3.85 | LNU2H332MSEH |
| 3900 | 76.2×145 | 12.4 | 0.20 | 4.19 | LNU2H392MSEH |
| | 90×105 | 12.4 | 0.20 | 4.19 | LNU2H392MSEJ |
| 4700 | 76.2×165 | 13.9 | 0.20 | 4.60 | LNU2H472MSEH |
| | 90×125 | 13.9 | 0.20 | 4.60 | LNU2H472MSEJ |
| 5600 | 90×145 | 15.8 | 0.20 | 5.00 | LNU2H562MSEJ |
| 6800 | 90×165 | 18.5 | 0.20 | 5.00 | LNU2H682MSEJ |
| 8200 | 90×205 | 20.2 | 0.20 | 5.00 | LNU2H822MSEJ |

| 525V (N7) | | | | | |
|---|---|---|---|---|---|
| Cap. (μF) | Size φD × L(mm) | Rated ripple (Arms) | tan δ | Leakage Current (mA) | Code |
| 680 | 51×85 | 4.4 | 0.20 | 1.75 | LNUN7681MSEF |
| 1000 | 51×95 | 5.4 | 0.20 | 2.12 | LNUN7102MSEF |
| 1500 | 63.5×95 | 7.2 | 0.20 | 2.60 | LNUN7152MSEG |
| 1800 | 63.5×105 | 8.0 | 0.20 | 2.85 | LNUN7182MSEG |
| 2200 | 63.5×135 | 9.2 | 0.20 | 3.15 | LNUN7222MSEG |
| | 76.2×100 | 9.2 | 0.20 | 3.15 | LNUN7222MSEH |
| 2700 | 76.2×115 | 10.6 | 0.20 | 3.49 | LNUN7272MSEH |
| 3300 | 76.2×140 | 12.1 | 0.20 | 3.85 | LNUN7332MSEH |
| 4700 | 76.2×185 | 15.2 | 0.20 | 4.60 | LNUN7472MSEH |
| | 90×135 | 15.2 | 0.20 | 4.60 | LNUN7472MSEJ |
| 5600 | 90×155 | 17.5 | 0.20 | 5.00 | LNUN7562MSEJ |

Rated ripple current (Arms) at 105°C 120Hz

● Frequency coefficient of rated ripple current

| Frequency (Hz) | 50 | 60 | 120 | 360 | 1k | 10k or more |
|---|---|---|---|---|---|---|
| Coefficient | 0.80 | 0.82 | 1.00 | 1.20 | 1.30 | 1.40 |