

# ALUMINUM ELECTROLYTIC CAPACITORS

# LNU

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



- 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 LNT.
- 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,(EU)2015/863).

## 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)            | See refer to next page (Measurement frequency : 120Hz at 20°C)   |  |
| Stability at Low Temperature             | Rated voltage(V)   | 400 to 525   |
|  | Impedance ratio ZT/Z20(MAX.)   | $Z - 40^{\circ}\text{C} / Z + 20^{\circ}\text{C}$<br>8 |
| Measurement frequency : 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                                | 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                               | 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 | 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



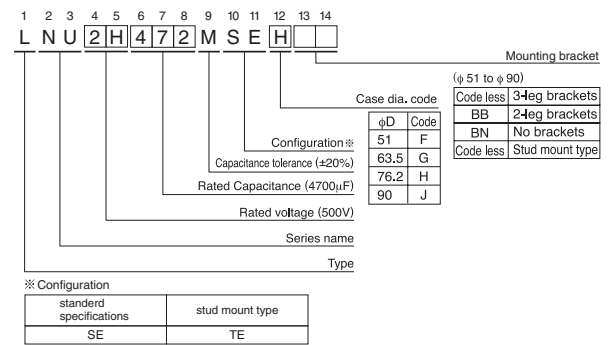
Note) The brackets will be supplied in the separate box.

### 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.348)  
 \*It is not attached to the bracket.  
 \*Field 13 and 14 become blank in Type number system.

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



Please refer to page 348 for schematic of dimensions.  
 ※ Please contact to us if PVC less products are required.

### Dimensions of mounting bracket (mm)

| Symbol | Leg shape 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.

## LNU

### ■ 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        |

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