

ALUMINUM ELECTROLYTIC CAPACITORS

LNx

Screw Terminal Type, 85°C
High ripple longer life.



High Ripple Current Long Life

- Suited for use in industrial power supplies for inverter circuitry, etc.
- High ripple current, extra-high voltage application.
- High reliability, long life for 20,000 hours application of rated ripple current at +85°C.
- Extended range up to $\phi 100 \times 250L$ size.
- Flame retardant electroly to type available.
- Compliant to the RoHS directive (2011/65/EU, (EU)2015/863).

LQR



LNx

Long life LNY

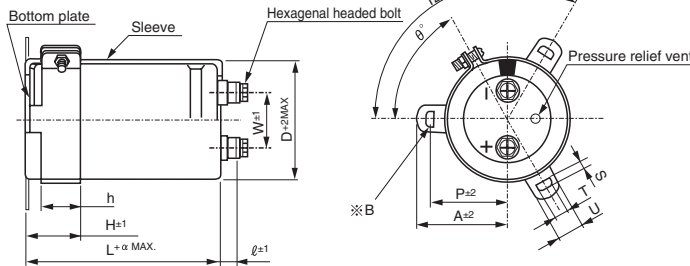


Specifications

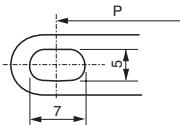
| Item | Performance Characteristics |
|---------------------------------------|--|
| Category Temperature Range | - 25 to +85°C |
| Rated Voltage Range | 350 to 630V |
| Rated Capacitance Range | 1000 to 27000 μ F |
| Capacitance Tolerance | $\pm 20\%$ at 120Hz, 20°C |
| Leakage Current | After 5 minutes' application of rated voltage, leakage current is not more than $3\sqrt{CV}$ (μ A) or 5 mA, whichever is smaller (at 20°C). [C: Rated Capacitance(μ F), 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) 350 to 630 Impedance ratio ZT/Z20(MAX.) Z - 25°C / Z + 20°C 8 |
| | Measurement frequency : 120Hz |
| Endurance | The specifications listed at right shall be met when the capacitors are restored to 20°C after the standard ripple current is applied for 20000 hours at 85°C, the peak voltage shall not exceed the rated voltage.(2000 hours at 85°C for the parts rated at 630V, 5000 hours at 85°C for the parts rated at 500V and 550V) |
| | 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 85°C, the peak voltage shall not exceed the rated voltage. |
| | Capacitance change Within $\pm 20\%$ of the initial capacitance value |
| | tan δ 300% or less than 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. |
| | Leakage current Less than or equal to the initial specified value |
| Marking | Printed with white color letter on black sleeve. |

Drawing

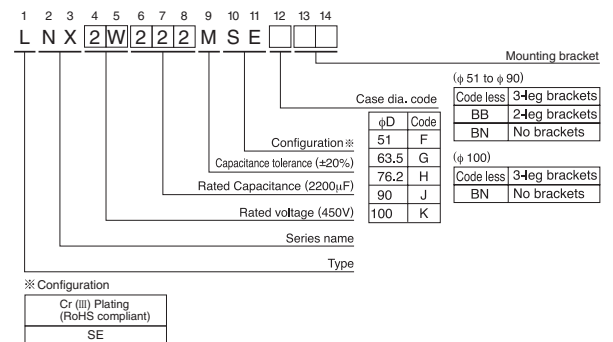
Method mount metal bracket



※ B
3-leg brackets for $\phi 90$ capacitors have different hole shapes from the ordinary ones illustrated below.



Type numbering system (Example : 450V 2200 μ F)



Please refer to page 348 for schematic of dimensions.
※ Please contact to us if PVCless 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 |
| 100 | 41.5 | 10 | 4 | M8 |

Dimensions of mounting bracket (mm)

| Symbol | Leg shape | 3-Leg | | | | 2-Leg | | | |
|----------------|-----------|-------|------|------|------|-------|------|------|-----|
| | | 51 | 63.5 | 76.2 | 90 | 51 | 63.5 | 76.2 | 90 |
| P | ϕD | 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.



■ Dimensions

| 350V (2V) | | | | | | |
|-----------|-----------------|--------------------------------------|-----------------------------------|-------|----------------------|--------------|
| Cap. (μF) | Size φD × L(mm) | Standard ripple (Arms) ^{*1} | Rated ripple (Arms) ^{*2} | tan δ | Leakage Current (mA) | Code |
| 1000 | 51 × 60 | 3.5 | 4.6 | 0.2 | 1.77 | LNX2V102MSEF |
| 1200 | 51 × 70 | 4.2 | 5.3 | 0.2 | 1.94 | LNX2V122MSEF |
| 1500 | 51 × 80 | 4.9 | 6.3 | 0.2 | 2.17 | LNX2V152MSEF |
| 1800 | 51 × 90 | 5.6 | 7.3 | 0.2 | 2.38 | LNX2V182MSEF |
| 2200 | 51 × 110 | 6.7 | 8.8 | 0.2 | 2.63 | LNX2V222MSEF |
| 2700 | 51 × 130 | 8.0 | 10.3 | 0.2 | 2.91 | LNX2V272MSEF |
| | 63.5 × 90 | 7.7 | 9.9 | 0.2 | 2.91 | LNX2V272MSEG |
| 3300 | 51 × 150 | 9.2 | 12.1 | 0.2 | 3.22 | LNX2V332MSEF |
| | 63.5 × 100 | 9.0 | 11.8 | 0.2 | 3.22 | LNX2V332MSEG |
| 3900 | 63.5 × 110 | 10.4 | 12.5 | 0.2 | 3.50 | LNX2V392MSEG |
| | 76.2 × 90 | 10.3 | 12.2 | 0.2 | 3.50 | LNX2V392MSEH |
| 4700 | 63.5 × 130 | 12.0 | 14.8 | 0.2 | 3.84 | LNX2V472MSEG |
| | 76.2 × 100 | 11.9 | 14.0 | 0.2 | 3.84 | LNX2V472MSEH |
| 5600 | 63.5 × 150 | 14.0 | 17.0 | 0.2 | 4.20 | LNX2V562MSEG |
| | 76.2 × 110 | 13.5 | 16.4 | 0.2 | 4.20 | LNX2V562MSEH |
| 6800 | 63.5 × 170 | 16.3 | 19.6 | 0.2 | 4.62 | LNX2V682MSEG |
| | 76.2 × 130 | 16.0 | 19.1 | 0.2 | 4.62 | LNX2V682MSEH |
| 8200 | 76.2 × 150 | 18.7 | 22.0 | 0.2 | 5.00 | LNX2V822MSEH |
| | 90 × 130 | 18.2 | 21.4 | 0.2 | 5.00 | LNX2V822MSEJ |
| 10000 | 76.2 × 170 | 21.8 | 25.5 | 0.2 | 5.00 | LNX2V103MSEH |
| | 90 × 150 | 21.3 | 25.3 | 0.2 | 5.00 | LNX2V103MSEJ |
| 12000 | 76.2 × 190 | 25.1 | 29.1 | 0.2 | 5.00 | LNX2V123MSEH |
| | 90 × 150 | 24.8 | 28.8 | 0.2 | 5.00 | LNX2V123MSEJ |
| 15000 | 90 × 190 | 29.0 | 36.0 | 0.2 | 5.00 | LNX2V153MSEJ |
| 18000 | 90 × 220 | 32.4 | 39.7 | 0.2 | 5.00 | LNX2V183MSEJ |
| 22000 | 100 × 220 | 38.0 | 43.2 | 0.2 | 5.00 | LNX2V223MSEK |
| 27000 | 100 × 250 | 42.0 | 47.0 | 0.2 | 5.00 | LNX2V273MSEK |

| 400V (2G) | | | | | | |
|-----------|-----------------|--------------------------------------|-----------------------------------|-------|----------------------|--------------|
| Cap. (μF) | Size φD × L(mm) | Standard ripple (Arms) ^{*1} | Rated ripple (Arms) ^{*2} | tan δ | Leakage Current (mA) | Code |
| 1000 | 51 × 70 | 3.8 | 5.0 | 0.2 | 1.89 | LNX2G102MSEF |
| 1200 | 51 × 80 | 4.5 | 5.8 | 0.2 | 2.07 | LNX2G122MSEF |
| 1500 | 51 × 100 | 5.3 | 6.8 | 0.2 | 2.32 | LNX2G152MSEF |
| 1800 | 51 × 110 | 6.0 | 8.2 | 0.2 | 2.54 | LNX2G182MSEF |
| 2200 | 51 × 130 | 7.0 | 9.3 | 0.2 | 2.81 | LNX2G222MSEF |
| | 63.5 × 90 | 6.8 | 8.9 | 0.2 | 2.81 | LNX2G222MSEG |
| 2700 | 63.5 × 110 | 8.2 | 10.8 | 0.2 | 3.11 | LNX2G272MSEG |
| | 76.2 × 90 | 8.1 | 10.6 | 0.2 | 3.11 | LNX2G272MSEH |
| 3300 | 63.5 × 130 | 9.6 | 12.9 | 0.2 | 3.44 | LNX2G332MSEG |
| | 76.2 × 100 | 9.3 | 12.4 | 0.2 | 3.44 | LNX2G332MSEH |
| 3900 | 63.5 × 150 | 11.0 | 14.4 | 0.2 | 3.74 | LNX2G392MSEG |
| | 76.2 × 100 | 10.5 | 13.9 | 0.2 | 3.74 | LNX2G392MSEH |
| 4700 | 63.5 × 170 | 12.6 | 16.6 | 0.2 | 4.11 | LNX2G472MSEG |
| | 76.2 × 130 | 12.3 | 16.0 | 0.2 | 4.11 | LNX2G472MSEH |
| 5600 | 63.5 × 190 | 14.7 | 18.8 | 0.2 | 4.49 | LNX2G562MSEG |
| | 76.2 × 150 | 14.3 | 18.3 | 0.2 | 4.49 | LNX2G562MSEH |
| 6800 | 76.2 × 170 | 16.7 | 21.2 | 0.2 | 4.94 | LNX2G682MSEH |
| | 90 × 130 | 16.3 | 20.7 | 0.2 | 4.94 | LNX2G682MSEJ |
| 8200 | 76.2 × 190 | 19.3 | 24.1 | 0.2 | 5.00 | LNX2G822MSEH |
| | 90 × 150 | 19.0 | 23.7 | 0.2 | 5.00 | LNX2G822MSEJ |
| 10000 | 76.2 × 220 | 22.7 | 28.3 | 0.2 | 5.00 | LNX2G103MSEH |
| | 90 × 170 | 22.2 | 28.0 | 0.2 | 5.00 | LNX2G103MSEJ |
| 12000 | 90 × 190 | 25.5 | 31.9 | 0.2 | 5.00 | LNX2G123MSEJ |
| 15000 | 100 × 190 | 29.6 | 37.0 | 0.2 | 5.00 | LNX2G153MSEK |
| 18000 | 100 × 220 | 33.0 | 40.5 | 0.2 | 5.00 | LNX2G183MSEK |
| 22000 | 100 × 250 | 41.4 | 44.7 | 0.2 | 5.00 | LNX2G223MSEK |

| 450V (2W) | | | | | | |
|-----------|-----------------|--------------------------------------|-----------------------------------|-------|----------------------|--------------|
| Cap. (μF) | Size φD × L(mm) | Standard ripple (Arms) ^{*1} | Rated ripple (Arms) ^{*2} | tan δ | Leakage Current (mA) | Code |
| 1000 | 51 × 80 | 4.0 | 5.2 | 0.2 | 2.01 | LNX2W102MSEF |
| 1200 | 51 × 100 | 4.7 | 6.3 | 0.2 | 2.20 | LNX2W122MSEF |
| 1500 | 51 × 110 | 5.4 | 7.3 | 0.2 | 2.46 | LNX2W152MSEF |
| 1800 | 51 × 130 | 6.4 | 8.7 | 0.2 | 2.70 | LNX2W182MSEF |
| | 63.5 × 90 | 6.1 | 7.6 | 0.2 | 2.70 | LNX2W182MSEG |
| 2200 | 63.5 × 110 | 7.2 | 9.6 | 0.2 | 2.98 | LNX2W222MSEG |
| | 76.2 × 90 | 7.1 | 9.4 | 0.2 | 2.98 | LNX2W222MSEH |
| 2700 | 63.5 × 130 | 8.6 | 11.3 | 0.2 | 3.30 | LNX2W272MSEG |
| | 76.2 × 100 | 8.3 | 11.0 | 0.2 | 3.30 | LNX2W272MSEH |
| 3300 | 63.5 × 150 | 10.0 | 13.3 | 0.2 | 3.65 | LNX2W332MSEG |
| | 76.2 × 110 | 9.7 | 12.9 | 0.2 | 3.65 | LNX2W332MSEH |
| 3900 | 63.5 × 170 | 11.4 | 15.1 | 0.2 | 3.97 | LNX2W392MSEG |
| | 76.2 × 130 | 11.2 | 14.6 | 0.2 | 3.97 | LNX2W392MSEH |
| 4700 | 63.5 × 190 | 13.0 | 17.3 | 0.2 | 4.36 | LNX2W472MSEG |
| | 76.2 × 150 | 12.9 | 16.9 | 0.2 | 4.36 | LNX2W472MSEH |
| 5600 | 76.2 × 170 | 15.4 | 19.4 | 0.2 | 4.76 | LNX2W562MSEH |
| | 90 × 150 | 15.3 | 19.1 | 0.2 | 4.76 | LNX2W562MSEJ |
| 6800 | 76.2 × 190 | 17.3 | 22.0 | 0.2 | 5.00 | LNX2W682MSEH |
| | 90 × 150 | 17.1 | 21.6 | 0.2 | 5.00 | LNX2W682MSEJ |
| 8200 | 76.2 × 220 | 20.3 | 25.7 | 0.2 | 5.00 | LNX2W822MSEH |
| | 90 × 170 | 19.8 | 25.4 | 0.2 | 5.00 | LNX2W822MSEJ |
| 10000 | 90 × 190 | 23.0 | 29.6 | 0.2 | 5.00 | LNX2W103MSEJ |
| 12000 | 90 × 220 | 26.9 | 33.5 | 0.2 | 5.00 | LNX2W123MSEJ |
| 15000 | 100 × 220 | 31.1 | 38.0 | 0.2 | 5.00 | LNX2W153MSEK |
| 18000 | 100 × 250 | 37.0 | 41.3 | 0.2 | 5.00 | LNX2W183MSEK |

| 500V (2H) | | | | | | |
|-----------|-----------------|--------------------------------------|-----------------------------------|-------|----------------------|--------------|
| Cap. (μF) | Size φD × L(mm) | Standard ripple (Arms) ^{*1} | Rated ripple (Arms) ^{*2} | tan δ | Leakage Current (mA) | Code |
| 1000 | 51 × 110 | 4.2 | — | 0.2 | 2.12 | LNX2H102MSEF |
| 1200 | 63.5 × 90 | 4.8 | — | 0.2 | 2.32 | LNX2H122MSEG |
| 1500 | 63.5 × 90 | 5.5 | — | 0.2 | 2.59 | LNX2H152MSEG |
| 1800 | 63.5 × 110 | 6.5 | — | 0.2 | 2.84 | LNX2H182MSEG |
| 2200 | 63.5 × 130 | 7.7 | — | 0.2 | 3.14 | LNX2H222MSEG |
| 2700 | 76.2 × 110 | 8.8 | — | 0.2 | 3.48 | LNX2H272MSEH |
| 3300 | 76.2 × 130 | 10.4 | — | 0.2 | 3.85 | LNX2H332MSEH |
| 3900 | 76.2 × 150 | 12.1 | — | 0.2 | 4.18 | LNX2H392MSEH |
| 4700 | 90 × 130 | 13.7 | — | 0.2 | 4.59 | LNX2H472MSEJ |
| 5600 | 90 × 150 | 15.9 | — | 0.2 | 5.00 | LNX2H562MSEJ |
| 6800 | 90 × 170 | 18.5 | — | 0.2 | 5.00 | LNX2H682MSEJ |
| 8200 | 90 × 190 | 21.4 | — | 0.2 | 5.00 | LNX2H822MSEJ |
| 10000 | 100 × 190 | 23.8 | — | 0.2 | 5.00 | LNX2H103MSEK |
| 12000 | 100 × 220 | 27.8 | — | 0.2 | 5.00 | LNX2H123MSEK |

Ripple current (Arms) at 85°C 120Hz

LNx

■ Dimensions

| 550V (2L) | | | | | | |
|-----------|-----------------|--------------------------------------|-----------------------------------|-------|----------------------|--------------|
| Cap. (μF) | Size φD × L(mm) | Standard ripple (Arms) ^{*1} | Rated ripple (Arms) ^{*2} | tan δ | Leakage Current (mA) | Code |
| 1000 | 51 × 130 | 4.3 | — | 0.2 | 2.22 | LNx2L102MSEF |
| 1200 | 63.5 × 110 | 5.0 | — | 0.2 | 2.43 | LNx2L122MSEG |
| 1500 | 63.5 × 130 | 6.0 | — | 0.2 | 2.72 | LNx2L152MSEG |
| 1800 | 76.2 × 110 | 6.7 | — | 0.2 | 2.98 | LNx2L182MSEH |
| 2200 | 76.2 × 130 | 8.0 | — | 0.2 | 3.30 | LNx2L222MSEH |
| 2700 | 76.2 × 150 | 9.4 | — | 0.2 | 3.65 | LNx2L272MSEH |
| 3300 | 76.2 × 170 | 11.0 | — | 0.2 | 4.04 | LNx2L332MSEH |
| 3900 | 90 × 150 | 12.5 | — | 0.2 | 4.39 | LNx2L392MSEJ |
| 4700 | 90 × 170 | 14.5 | — | 0.2 | 4.82 | LNx2L472MSEJ |
| 5600 | 90 × 190 | 16.6 | — | 0.2 | 5.00 | LNx2L562MSEJ |
| 6800 | 90 × 220 | 19.5 | — | 0.2 | 5.00 | LNx2L682MSEJ |
| 8200 | 100 × 220 | 21.6 | — | 0.2 | 5.00 | LNx2L822MSEK |
| 10000 | 100 × 250 | 25.2 | — | 0.2 | 5.00 | LNx2L103MSEK |

| 630V(2J) | | | | | | |
|-----------|-----------------|--------------------------------------|-----------------------------------|-------|----------------------|--------------|
| Cap. (μF) | Size φD × L(mm) | Standard ripple (Arms) ^{*1} | Rated ripple (Arms) ^{*2} | tan δ | Leakage Current (mA) | Code |
| 1000 | 63.5 × 130 | 5.9 | — | 0.3 | 2.38 | LNx2J102MSEG |
| 1200 | 76.2 × 110 | 6.7 | — | 0.3 | 2.60 | LNx2J122MSEH |
| 1500 | 76.2 × 130 | 8.1 | — | 0.3 | 2.91 | LNx2J152MSEH |
| 1800 | 76.2 × 150 | 9.6 | — | 0.3 | 3.19 | LNx2J182MSEH |
| 2200 | 90 × 130 | 10.7 | — | 0.3 | 3.53 | LNx2J222MSEJ |
| 2700 | 90 × 150 | 12.6 | — | 0.3 | 3.91 | LNx2J272MSEJ |
| 3300 | 90 × 170 | 14.7 | — | 0.3 | 4.32 | LNx2J332MSEJ |
| 3900 | 90 × 190 | 17.3 | — | 0.3 | 4.70 | LNx2J392MSEJ |
| 4700 | 100 × 220 | 21.4 | — | 0.3 | 5.00 | LNx2J472MSEK |
| 5600 | 100 × 250 | 24.7 | — | 0.3 | 5.00 | LNx2J562MSEK |

Ripple current (Arms) at 85°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 | 1.35 | 1.40 |

- (※ 1) • Standard ripple current:
Ripple current value allowable for the life time of 20,000 hours at 85°C.
(5,000 hours at 85°C for the voltage rating of 500V and 550V. 2,000 hours at 85°C for the voltage rating of 630V)
- (※ 2) • Maximum rated ripple current:
Ripple current value allowable for the life time of 5,000 hours at 85°C.

- 3-leg bracket is furnished as standard.
In case no-bracket or 2-leg bracket required, please put BN or BB at the end of type number.

Ex. 3-leg bracket LNx2G472MSEH
2-leg bracket LNx2G472MSEHBB
No bracket LNx2G472MSEHBN

- Flame-retardant type electrolyte is also available.
Please contact to Nichicon representative for the rated ripple current value.