

**LNx**Screw Terminal Type, 85°C  
High ripple longer life.**LQR****LNx**Long life **LNy**

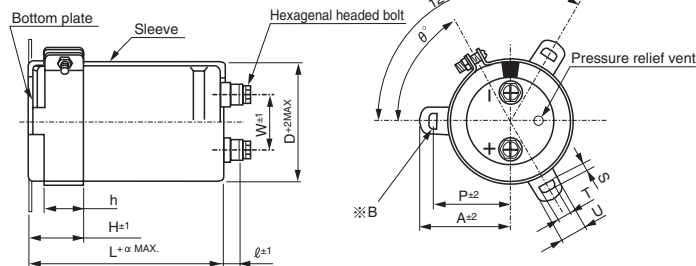
- Suited for use in industrial power supplies for inverter circuitry, etc.
- High ripple current, extra-high voltage application.
- High reliability, long life for 20,000 hours application of rated ripple current at +85°C.
- Extended range up to  $\phi 100 \times 250L$  size.
- Flame retardant electrolyte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

**Specifications**

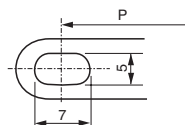
| Item                          | Performance Characteristics                                                                                                                                                                                                                                                                                                  |                                                   |                               |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-------------------------------|
| Category Temperature Range    | - 25 to +85°C                                                                                                                                                                                                                                                                                                                |                                                   |                               |
| Rated Voltage Range           | 350 to 630V                                                                                                                                                                                                                                                                                                                  |                                                   |                               |
| Rated Capacitance Range       | 1000 to 27000μF                                                                                                                                                                                                                                                                                                              |                                                   |                               |
| Capacitance Tolerance         | ± 20% at 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)                                                                                                                                                                                                                                                                                                            |                                                   | Measurement frequency : 120Hz |
|                               | 350 to 630                                                                                                                                                                                                                                                                                                                   |                                                   |                               |
|                               | Impedance ratio ZT/Z20(MAX.)                                                                                                                                                                                                                                                                                                 |                                                   |                               |
|                               | Z - 25°C / Z+20°C                                                                                                                                                                                                                                                                                                            |                                                   |                               |
|                               | 8                                                                                                                                                                                                                                                                                                                            |                                                   |                               |
| 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 ±20% of the initial capacitance value      |                               |
|                               | tan δ                                                                                                                                                                                                                                                                                                                        | 300% 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 white color letter on black sleeve.                                                                                                                                                                                                                                                                             |                                                   |                               |

**Drawing**

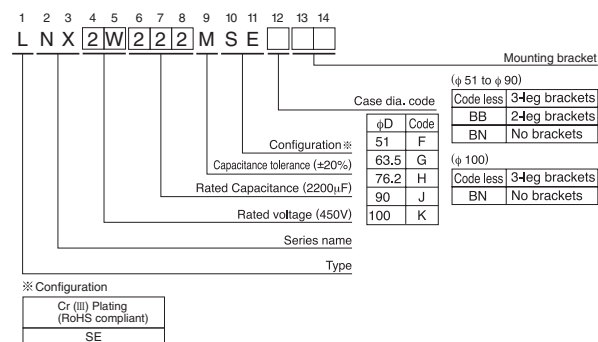
## Method mount metal bracket



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



## Type numbering system (Example: 450V 2200µF)



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 | φD | 3-Leg |      |      |      |      | 2-Leg |      |      |     |
|--------|-----------|----|-------|------|------|------|------|-------|------|------|-----|
|        |           |    | 51    | 63.5 | 76.2 | 90   | 100  | 51    | 63.5 | 76.2 | 90  |
| P      |           |    | 32.5  | 38.1 | 44.5 | 50.8 | 56.3 | 33.2  | 40.5 | 46.5 | 53  |
| A      |           |    | 38.5  | 43   | 49.2 | 58.5 | 62   | 40    | 46.5 | 53   | 59  |
| T      |           |    | 7.5   | 8.0  | 7.0  | 8.0  | 8.0  | 6.0   | 7.0  | 6.0  | 6.0 |
| S      |           |    | 5.0   | 5.0  | 5.0  | 5.0  | 5.0  | 4.5   | 4.5  | 4.5  | 4.5 |
| U      |           |    | 12    | 14   | 14   | 18   | 16   | 14    | 14   | 14   | 14  |
| θ°     |           |    | 60    | 60   | 60   | 60   | 60   | 30    | 30   | 30   | 30  |
| H      |           |    | 20    | 25   | 30   | 35   | 36   | 25    | 35   | 35   | 35  |
| h      |           |    | 15    | 20   | 24   | 25   | 30   | 15    | 20   | 20   | 20  |

● Dimension table in next page.

LNX

## ■ Dimensions

| 350V (2V)    |                    |                                 |                              |       |                         |              |
|--------------|--------------------|---------------------------------|------------------------------|-------|-------------------------|--------------|
| Cap.<br>(μF) | Size<br>φD × L(mm) | Standard<br>ripple<br>(Arms) *1 | Rated<br>ripple<br>(Arms) *2 | tan δ | Leakage Current<br>(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.<br>(μF) | Size<br>φD × L(mm) | Standard<br>ripple<br>(Arms) *1 | Rated<br>ripple<br>(Arms) *2 | tan δ | Leakage Current<br>(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.<br>(μF) | Size<br>φD × L(mm) | Standard<br>ripple<br>(Arms) *1 | Rated<br>ripple<br>(Arms) *2 | tan δ | Leakage Current<br>(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.<br>(μF) | Size<br>φD × L(mm) | Standard<br>ripple<br>(Arms) *1 | Rated<br>ripple<br>(Arms) *2 | tan δ | Leakage Current<br>(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.<br>( $\mu$ F) | Size<br>$\phi$ D $\times$ L(mm) | Standard<br>ripple<br>(Arms) * 1 | Rated<br>ripple<br>(Arms) * 2 | $\tan \delta$ | Leakage Current<br>(mA) | Code         |
| 1000               | 51 $\times$ 130                 | 4.3                              | —                             | 0.2           | 2.22                    | LNX2L102MSEF |
| 1200               | 63.5 $\times$ 110               | 5.0                              | —                             | 0.2           | 2.43                    | LNX2L122MSEG |
| 1500               | 63.5 $\times$ 130               | 6.0                              | —                             | 0.2           | 2.72                    | LNX2L152MSEG |
| 1800               | 76.2 $\times$ 110               | 6.7                              | —                             | 0.2           | 2.98                    | LNX2L182MSEH |
| 2200               | 76.2 $\times$ 130               | 8.0                              | —                             | 0.2           | 3.30                    | LNX2L222MSEH |
| 2700               | 76.2 $\times$ 150               | 9.4                              | —                             | 0.2           | 3.65                    | LNX2L272MSEH |
| 3300               | 76.2 $\times$ 170               | 11.0                             | —                             | 0.2           | 4.04                    | LNX2L332MSEH |
| 3900               | 90 $\times$ 150                 | 12.5                             | —                             | 0.2           | 4.39                    | LNX2L392MSEJ |
| 4700               | 90 $\times$ 170                 | 14.5                             | —                             | 0.2           | 4.82                    | LNX2L472MSEJ |
| 5600               | 90 $\times$ 190                 | 16.6                             | —                             | 0.2           | 5.00                    | LNX2L562MSEJ |
| 6800               | 90 $\times$ 220                 | 19.5                             | —                             | 0.2           | 5.00                    | LNX2L682MSEJ |
| 8200               | 100 $\times$ 220                | 21.6                             | —                             | 0.2           | 5.00                    | LNX2L822MSEK |
| 10000              | 100 $\times$ 250                | 25.2                             | —                             | 0.2           | 5.00                    | LNX2L103MSEK |

| 630V(2J)           |                                 |                                  |                               |               |                         |              |
|--------------------|---------------------------------|----------------------------------|-------------------------------|---------------|-------------------------|--------------|
| Cap.<br>( $\mu$ F) | Size<br>$\phi$ D $\times$ L(mm) | Standard<br>ripple<br>(Arms) * 1 | Rated<br>ripple<br>(Arms) * 2 | $\tan \delta$ | Leakage Current<br>(mA) | Code         |
| 1000               | 63.5 $\times$ 130               | 5.9                              | —                             | 0.3           | 2.38                    | LNX2J102MSEG |
| 1200               | 76.2 $\times$ 110               | 6.7                              | —                             | 0.3           | 2.60                    | LNX2J122MSEH |
| 1500               | 76.2 $\times$ 130               | 8.1                              | —                             | 0.3           | 2.91                    | LNX2J152MSEH |
| 1800               | 76.2 $\times$ 150               | 9.6                              | —                             | 0.3           | 3.19                    | LNX2J182MSEH |
| 2200               | 90 $\times$ 130                 | 10.7                             | —                             | 0.3           | 3.53                    | LNX2J222MSEJ |
| 2700               | 90 $\times$ 150                 | 12.6                             | —                             | 0.3           | 3.91                    | LNX2J272MSEJ |
| 3300               | 90 $\times$ 170                 | 14.7                             | —                             | 0.3           | 4.32                    | LNX2J332MSEJ |
| 3900               | 90 $\times$ 190                 | 17.3                             | —                             | 0.3           | 4.70                    | LNX2J392MSEJ |
| 4700               | 100 $\times$ 220                | 21.4                             | —                             | 0.3           | 5.00                    | LNX2J472MSEK |
| 5600               | 100 $\times$ 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.