

ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

NX

Screw Terminal Type, High ripple longer life.

series



NX

- 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 ripple current at +85°C.
- Extended range up to $\phi 100 \times 250$ l size.
- Flame retardant electroly to type available.
- Bushing type for better vibration and insulation also available.

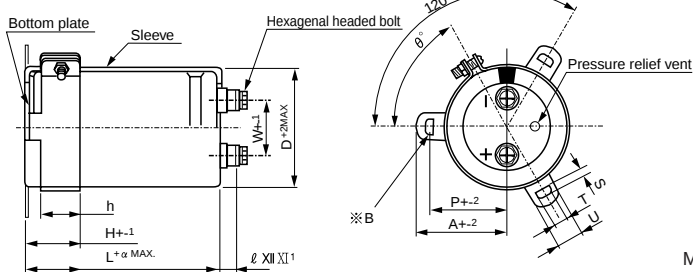


Specifications

Item	Performance Characteristics	
Category Temperature Range	—25~+85°C	
Rated Voltage Range	350~550V	
Rated Capacitance Range	1000~27000 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 $3\sqrt{C_V}$ (μ A) or 5 mA, whichever is smaller (at 20°C). [C: Rated Capacitance(μ F), V: Voltage(V)]	
tan δ	0.20 MAX (Measurement frequency:120Hz, Temperature:20°C)	
Stability at Low Temperature	Rated voltage (V)	350 ~ 550
	Impedance ratio ZT/Z20(MAX.)	Z—25°C/Z+20°C 8
Endurance	After an application of DC voltage (in the range of rated voltage even after over-lapping the standard ripple current) for 20,000 hours at 85°C, capacitors shall meet the characteristics requirements indicated at right. (5000 hours at 85°C for the parts rated at 500V and 550V) After an application of DC voltage (in the range of rated DC voltage even after over-lapping the maximum allowable ripple current) for 5000 hours at 85°C, capacitors meet the characteristic requirements listed at right.	
	Capacitance change	Within $\pm 20\%$ of initial value
	tan δ	300% or less of initial specified value
	Leakage current	Initial specified value or less
Shelf Life	After leaving capacitors under no load at 85°C for 1000 hours, they meet	
Marking	Printed with white color letter on black sleeve.	

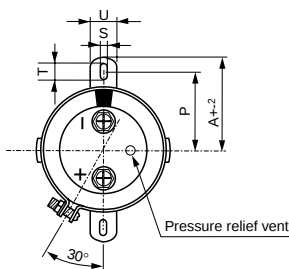
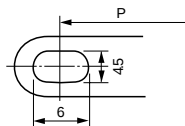
Drawing

Method mount metal bracket

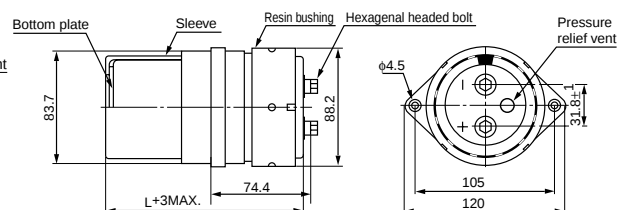


※ B

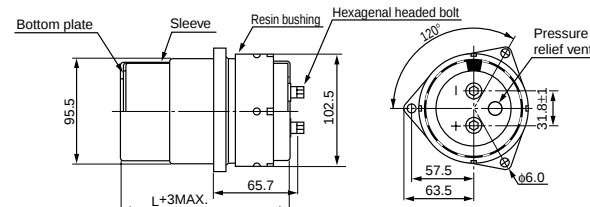
3-leg brackets for $\phi 90$ capacitors have different hole shapes from the ordinary ones illustrated below.



Method to mount resin bushing ($\phi 76.2$) (Apply to L=150 or more)



Method to mount resin bushing ($\phi 90$) (Apply to L=150 or more)



Dimension of terminal pitch (w) and length (R) and Nominal dia. of bolt (mm)

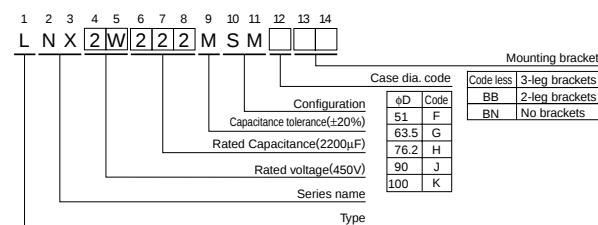
ϕD	W	ℓ	α	Nominal dia. of bolt
51	22.0	6	3	M 5
63.5	28.6	6	3	M 5
76.2	31.8	6	3	M 5
90	31.8	6	3	M 5
100	41.5	10	4	M 8

Dimension of mounting bracket

Leg shape		3-Leg					2-Leg			
Symbol	ϕD	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	57	62	40	46.5	53	59
T		7.5	8.0	7.0	7.0	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	16	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	20	30	15	20	20	20

■ Dimension table in next page.

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



Resin bushing available upon request.

CAT.8100Q-1

■ Dimensions

V (Surge) (Code)	Cap.(μF)	Case size φ D×L(mm)	Standard ripple (Arms) ±1	Maximum rated ripple (Arms) ±2	tan δ (MAX)	Leakage current (mA MAX) ±3	Code
350V (400) (2V)	1000	51×60	3.5	4.6	0.2	1.77	LNX2V102MSMF
	1200	51×70	4.2	5.3	0.2	1.94	LNX2V122MSMF
	1500	51×80	4.9	6.3	0.2	2.17	LNX2V152MSMF
	1800	51×90	5.6	7.3	0.2	2.38	LNX2V182MSMF
	2200	51×110	6.7	8.8	0.2	2.63	LNX2V222MSMF
	2700	51×130	8.0	10.3	0.2	2.92	LNX2V272MSMF
		63.5×90	7.7	9.9	0.2	2.92	LNX2V272MSMG
		51×150	9.2	12.1	0.2	3.22	LNX2V332MSMF
	3300	63.5×100	9.0	11.8	0.2	3.22	LNX2V332MSMG
		63.5×110	10.4	12.5	0.2	3.50	LNX2V392MSMG
	3900	76.2×90	10.3	12.2	0.2	3.50	LNX2V392MSMH
		63.5×130	12.0	14.8	0.2	3.85	LNX2V472MSMG
	4700	76.2×100	11.9	14.0	0.2	3.85	LNX2V472MSMH
		63.5×150	14.0	17.0	0.2	4.20	LNX2V562MSMG
	5600	76.2×110	13.5	16.4	0.2	4.20	LNX2V562MSMH
		63.5×170	16.3	19.6	0.2	4.63	LNX2V682MSMG
	6800	76.2×130	16.0	19.1	0.2	4.63	LNX2V682MSMH
		76.2×150	18.7	22.0	0.2	5.00	LNX2V822MSMH
	8200	90×130	18.2	21.4	0.2	5.00	LNX2V822MSMJ
		76.2×170	21.8	25.5	0.2	5.00	LNX2V103MSMH
	10000	90×150	21.3	25.3	0.2	5.00	LNX2V103MSMJ
		76.2×190	25.1	29.1	0.2	5.00	LNX2V123MSMH
	12000	90×150	24.8	28.8	0.2	5.00	LNX2V123MSMJ
		90×190	29.0	36.0	0.2	5.00	LNX2V153MSMJ
	15000	90×220	32.4	39.7	0.2	5.00	LNX2V183MSMJ
	22000	100×220	38.0	43.2	0.2	5.00	LNX2V223MSMK
	27000	100×250	42.0	47.0	0.2	5.00	LNX2V273MSMK
400V (450) (2G)	1000	51×70	3.8	5.0	0.2	1.90	LNX2G102MSMF
	1200	51×80	4.5	5.8	0.2	2.08	LNX2G122MSMF
	1500	51×100	5.3	6.8	0.2	2.32	LNX2G152MSMF
	1800	51×110	6.0	8.2	0.2	2.55	LNX2G182MSMF
		51×130	7.0	9.3	0.2	2.81	LNX2G222MSMF
	2200	63.5×90	6.8	8.9	0.2	2.81	LNX2G222MSMG
		63.5×110	8.2	10.8	0.2	3.12	LNX2G272MSMG
	2700	76.2×90	8.1	10.6	0.2	3.12	LNX2G272MSMH
		63.5×130	9.6	12.9	0.2	3.45	LNX2G332MSMG
	3300	76.2×100	9.3	12.4	0.2	3.45	LNX2G332MSMH
		63.5×150	11.0	14.4	0.2	3.75	LNX2G392MSMG
	3900	76.2×100	10.5	13.9	0.2	3.75	LNX2G392MSMH
		63.5×170	12.6	16.6	0.2	4.11	LNX2G472MSMG
	4700	76.2×130	12.3	16.0	0.2	4.11	LNX2G472MSMH
		63.5×190	14.7	18.8	0.2	4.49	LNX2G562MSMG
	5600	76.2×150	14.3	18.3	0.2	4.49	LNX2G562MSMH
		76.2×170	16.7	21.2	0.2	4.95	LNX2G682MSMH
	6800	90×130	16.3	20.7	0.2	4.95	LNX2G682MSMJ
		76.2×190	19.3	24.1	0.2	5.00	LNX2G822MSMH
	8200	90×150	19.0	23.7	0.2	5.00	LNX2G822MSMJ
		76.2×220	22.7	28.3	0.2	5.00	LNX2G103MSMH
	10000	90×170	22.2	28.0	0.2	5.00	LNX2G103MSMJ
		90×190	25.5	31.9	0.2	5.00	LNX2G123MSMJ
	15000	100×190	29.6	37.0	0.2	5.00	LNX2G153MSMK
	18000	100×220	33.0	40.5	0.2	5.00	LNX2G183MSMK
	22000	100×250	41.4	44.7	0.2	5.00	LNX2G223MSMK

■ Frequency coefficient of rated ripple current

Frequency(Hz)	60	120	360	1k	10k~
Coefficient	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) •Maximum rated ripple current:

Ripple current value allowable for the life time of 5,000 hours at 85°C.

•Estimated life time of capacitor is calculated by the following formula, taking the operating temperature, inner temperature rise due to the ripple and derated voltage into consideration.

$$Ln = L_0 \times 2^{\frac{85-T}{10}} \times 2^{\frac{-\Delta T}{K}} \times \alpha$$

Where,

Ln : Lifetime under normal operating conditions.(h)

L₀ : Lifetime under maximum operating temperature of 85°C and applied DC voltage. (28000h)

T : Ambient temperature.(°C)

ΔT : Inner temperature rise of capacitor due to ripple current(°C)

K : Acceleration coefficient for temperature rise due to the ripple current.
when T+ΔT ≤ 90°C, K=10
when T+ΔT > 90°C, K=2.5

α : Life factor

V (Surge) (Code)	Cap.(μF)	Case size φ D×L(mm)	Standard ripple (Arms) ±1	Maximum rated ripple (Arms) ±2	tan δ (MAX)	Leakage current (mA MAX) ±3	Code
450V (500) (2W)	1000	51×80	4.0	5.2	0.2	2.01	LNX2W102MSMF
	1200	51×100	4.7	6.3	0.2	2.20	LNX2W122MSMF
	1500	51×110	5.4	7.3	0.2	2.46	LNX2W152MSMF
		51×130	6.4	8.7	0.2	2.70	LNX2W182MSMF
	1800	63.5×90	6.1	7.6	0.2	2.70	LNX2W182MSMG
		63.5×110	7.2	9.6	0.2	2.98	LNX2W222MSMG
	2200	76.2×90	7.1	9.4	0.2	2.98	LNX2W222MSMH
		63.5×130	8.6	11.3	0.2	3.31	LNX2W272MSMG
	2700	76.2×100	8.3	11.0	0.2	3.31	LNX2W272MSMH
		63.5×150	10.0	13.3	0.2	3.66	LNX2W332MSMG
	3300	76.2×110	9.7	12.9	0.2	3.66	LNX2W332MSMH
		63.5×170	11.4	15.1	0.2	3.97	LNX2W392MSMG
	3900	76.2×130	11.2	14.6	0.2	3.97	LNX2W392MSMH
		63.5×190	13.0	17.3	0.2	4.36	LNX2W472MSMG
	4700	76.2×150	12.9	16.9	0.2	4.36	LNX2W472MSMH
		76.2×170	15.4	19.4	0.2	4.76	LNX2W562MSMH
	5600	90×150	15.3	19.1	0.2	4.76	LNX2W562MSMJ
		76.2×190	17.3	22.0	0.2	5.00	LNX2W682MSMH
	6800	90×150	17.1	21.6	0.2	5.00	LNX2W682MSMJ
		76.2×220	20.3	25.7	0.2	5.00	LNX2W822MSMH
	8200	90×170	19.8	25.4	0.2	5.00	LNX2W822MSMJ
		90×190	23.0	29.6	0.2	5.00	LNX2W103MSMJ
	10000	90×220	26.9	33.5	0.2	5.00	LNX2W123MSMJ
	15000	100×220	31.1	38.0	0.2	5.00	LNX2W153MSMK
	18000	100×250	37.0	41.3	0.2	5.00	LNX2W183MSMK
500V (550) (2H)	1000	51×110	4.2	—	0.2	2.12	LNX2H102MSMF
	1200	63.5×90	4.8	—	0.2	2.32	LNX2H122MSMG
	1500	63.5×90	5.5	—	0.2	2.60	LNX2H152MSMG
	1800	63.5×110	6.5	—	0.2	2.85	LNX2H182MSMG
	2200	63.5×130	7.7	—	0.2	3.15	LNX2H222MSMG
	2700	76.2×110	8.8	—	0.2	3.49	LNX2H272MSMH
	3300	76.2×130	10.4	—	0.2	3.85	LNX2H332MSMH
	3900	76.2×150	12.1	—	0.2	4.19	LNX2H392MSMH
	4700	90×130	13.7	—	0.2	4.60	LNX2H472MSMJ
	5600	90×150	15.9	—	0.2	5.00	LNX2H562MSMJ
	6800	90×170	18.5	—	0.2	5.00	LNX2H682MSMJ
	8200	90×190	21.4	—	0.2	5.00	LNX2H822MSMJ
550V (600) (2L)	1000	51×130	4.3	—	0.2	2.22	LNX2L102MSMF
	1200	63.5×110	5.0	—	0.2	2.44	LNX2L122MSMG
	1500	63.5×130	6.0	—	0.2	2.72	LNX2L152MSMG
	1800	76.2×110	6.7	—	0.2	2.98	LNX2L182MSMH
	2200	76.2×130	8.0	—	0.2	3.30	LNX2L222MSMH
	2700	76.2×150	9.4	—	0.2	3.66	LNX2L272MSMH
	3300	76.2×170	11.0	—	0.2	4.04	LNX2L332MSMH
	3900	90×150	12.5	—	0.2	4.39	LNX2L392MSMJ
	4700	90×170	14.5	—	0.2	4.82	LNX2L472MSMJ
	5600	90×190	16.6	—	0.2	5.00	LNX2L562MSMJ
	6800	90×220	19.5	—	0.2	5.00	LNX2L682MSMJ
	8200	100×220	21.6	—	0.2	5.00	LNX2L822MSMK
	10000	100×250	25.2	—	0.2	5.00	LNX2L103MSMK

Ripple (A rms) at 85°C 120Hz

•Life factor α due to the voltage derating shall be decided by the temperature and the applied voltage

Oper. temp.	T ≤ 70°C	70°C < T ≤ 85°C
Voltage ratio	—	V/V ₀ ≤ 0.8 0.8 < V/V ₀ ≤ 0.9 0.9 < V/V ₀ ≤ 1.0
α	1.0	1.0 0.8 0.7

V : Applied voltage(V) V₀ : Rated voltage(V)

(※ 3) Leakage current: I = 3√CV × 10⁻³ or 5mA, whichever the smaller.

I : Leakage Current (mA)

C : Rated Capacitance (μF)

V : Voltage (V)

•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 LNX2G472MSMH

2-leg bracket LNX2G472MSMHBB

No bracket LNX2G472MSMHBN

•In case the capacitor is connected in series, please also connect balancing resistor.

The value of this balancing resistor will be calculated.

$$R \approx V_s / (2 \times I \times 10^{-3})$$

where, R : Balance resistance (Ω)

V_s : Sharing voltage of one capacitor (V)

I : Leakage current (mA) (I = 3√CV × 10⁻³)

C : Rated Capacitance (μF)

V : Voltage (V)

•Flame-retardant type electrolyte is also available.

Please contact to Nichicon representative for the rated ripple current value.