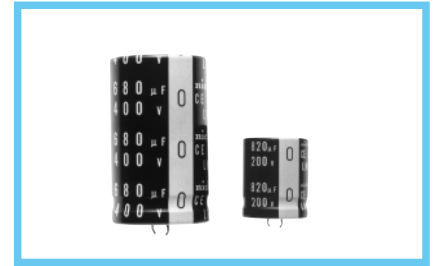
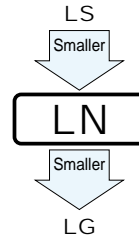


# ALUMINUM ELECTROLYTIC CAPACITORS

**LN** series Snap-in Terminal Type, Smaller-Sized



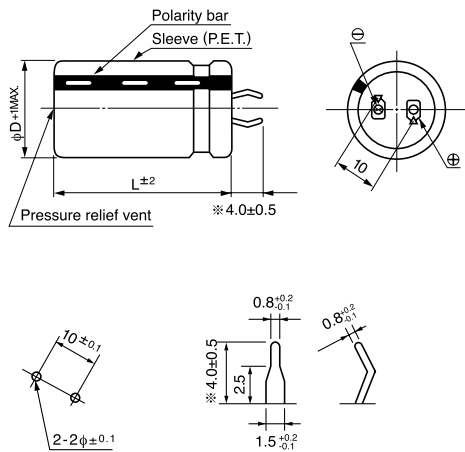
- Withstanding 2000 hours application of rated ripple current at 85°C.
- One rank smaller case sized than LS series.
- Adapted to the RoHS directive (2002/95/EC).



## Specifications

Item	Performance Characteristics							
Category Temperature Range	- 40 ~ + 85°C (160 ~ 250V), - 25 ~ + 85°C (400 ~ 450V)							
Rated Voltage Range	160 ~ 450V							
Rated Capacitance Range	68 ~ 3900μF							
Capacitance Tolerance	± 20% at 120Hz, 20°C							
Leakage Current	$I \leq 3\sqrt{CV}$ (μA) (After 5 minutes' application of rated voltage) [C : Rated Capacitance (μF) V : Voltage (V)]							
tan δ	Rated voltage (V)	160 ~ 400      450						
	tan δ (MAX.)	0.15      0.20						
Measurement frequency : 120Hz, Temperature : 20°C								
Stability at Low Temperature	Rated voltage(V)	160 ~ 250      350 ~ 450						
	Impedance ratio ZT/Z20 (MAX.)	Z - 25°C/Z+20°C      4      8						
Measurement frequency : 120Hz								
Endurance	After an application of DC voltage (in the range of rated DC voltage even after over-lapping the specified ripple current) for 2000 hours at 85°C, capacitors meet the characteristic requirements listed at right.	<table border="1"> <tr> <td>Capacitance change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>tan δ</td> <td>200% or less of initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Initial specified value or less</td> </tr> </table>	Capacitance change	Within ±20% of initial value	tan δ	200% or less of initial specified value	Leakage current	Initial specified value or less
	Capacitance change	Within ±20% of initial value						
tan δ	200% or less of initial specified value							
Leakage current	Initial specified value or less							
Shelf Life	After storing the capacitors under no load at 85°C for 1000 hours, and after performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they will meet the characteristic requirements listed at right.	<table border="1"> <tr> <td>Capacitance change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>tan δ</td> <td>200% or less of initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Initial specified value or less</td> </tr> </table>	Capacitance change	Within ±20% of initial value	tan δ	200% or less of initial specified value	Leakage current	Initial specified value or less
	Capacitance change	Within ±20% of initial value						
tan δ	200% or less of initial specified value							
Leakage current	Initial specified value or less							
Marking	Printed with white color letter on black sleeve.							

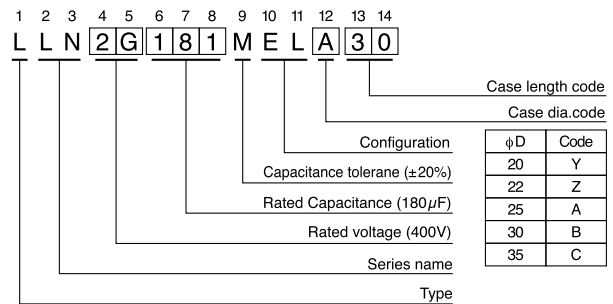
## Drawing



(PC board hole dimensions) (Terminal dimensions)

※ The other terminal is also available upon request.  
Please refer to page 237 for schematic of dimensions.

## Type numbering system ( Example : 400V 180μF)



Minimum order quantity : 50pcs.

● Dimension table in next page.

# ALUMINUM ELECTROLYTIC CAPACITORS



LN series

## ■ Dimensions

160V (2C)					
Cap. (μF)	Size φD × L(mm)	Rated ripple (mA)	tan δ	Leakage Current (mA)	Code
390	20 × 25	1190	0.15	0.74	LLN2C391MELY25
470	20 × 30	1760	0.15	0.82	LLN2C471MELY30
	22 × 25	1760	0.15	0.82	LLN2C471MELZ25
560	20 × 30	2250	0.15	0.89	LLN2C561MELY30
	22 × 25	2250	0.15	0.89	LLN2C561MELZ25
680	20 × 35	2500	0.15	0.98	LLN2C681MELY35
	22 × 30	2500	0.15	0.98	LLN2C681MELZ30
	25 × 25	2500	0.15	0.98	LLN2C681MELA25
820	20 × 40	2750	0.15	1.08	LLN2C821MELY40
	22 × 35	2750	0.15	1.08	LLN2C821MELZ35
	25 × 30	2750	0.15	1.08	LLN2C821MELA30
1000	22 × 40	3000	0.15	1.20	LLN2C102MELZ40
	25 × 30	3000	0.15	1.20	LLN2C102MELA30
	30 × 25	3000	0.15	1.20	LLN2C102MELB25
1200	22 × 45	3250	0.15	1.31	LLN2C122MELZ45
	25 × 35	3250	0.15	1.31	LLN2C122MELA35
	30 × 30	3250	0.15	1.31	LLN2C122MELB30
1500	25 × 45	3730	0.15	1.46	LLN2C152MELA45
	30 × 35	3730	0.15	1.46	LLN2C152MELB35
1800	25 × 50	4200	0.15	1.60	LLN2C182MELA50
	30 × 35	4200	0.15	1.60	LLN2C182MELB35
	35 × 30	4200	0.15	1.60	LLN2C182MELC30
2200	30 × 45	4780	0.15	1.77	LLN2C222MELB45
	35 × 35	4780	0.15	1.77	LLN2C222MELC35
2700	30 × 50	5450	0.15	1.97	LLN2C272MELB50
	35 × 40	5450	0.15	1.97	LLN2C272MELC40
3300	35 × 45	5750	0.15	2.17	LLN2C332MELC45
3900	35 × 50	6000	0.15	2.36	LLN2C392MELC50

200V (2D)					
Cap. (μF)	Size φD × L(mm)	Rated ripple (mA)	tan δ	Leakage Current (mA)	Code
330	20 × 25	1440	0.15	0.77	LLN2D331MELY25
390	20 × 30	1660	0.15	0.83	LLN2D391MELY30
	22 × 25	1680	0.15	0.83	LLN2D391MELZ25
470	20 × 35	2030	0.15	0.91	LLN2D471MELY35
	22 × 30	1970	0.15	0.91	LLN2D471MELZ30
	25 × 25	1950	0.15	0.91	LLN2D471MELA25
560	22 × 30	2430	0.15	1.00	LLN2D561MELZ30
	25 × 25	2430	0.15	1.00	LLN2D561MELA25
680	22 × 35	2680	0.15	1.10	LLN2D681MELZ35
	25 × 30	2680	0.15	1.10	LLN2D681MELA30
	30 × 25	2680	0.15	1.10	LLN2D681MELB25
820	22 × 40	2930	0.15	1.21	LLN2D821MELZ40
	25 × 35	2930	0.15	1.21	LLN2D821MELA35
	30 × 25	2930	0.15	1.21	LLN2D821MELB25
1000	25 × 40	3250	0.15	1.34	LLN2D102MELA40
	30 × 30	3250	0.15	1.34	LLN2D102MELB30
	35 × 25	3250	0.15	1.34	LLN2D102MELC25
1200	25 × 45	3500	0.15	1.46	LLN2D122MELA45
	30 × 35	3610	0.15	1.46	LLN2D122MELB35
	35 × 30	3570	0.15	1.46	LLN2D122MELC30
1500	25 × 50	3870	0.15	1.64	LLN2D152MELA50
	30 × 40	3870	0.15	1.64	LLN2D152MELB40
	35 × 30	3870	0.15	1.64	LLN2D152MELC30
1800	30 × 45	4320	0.15	1.80	LLN2D182MELB45
	35 × 35	4320	0.15	1.80	LLN2D182MELC35
2200	30 × 50	4920	0.15	1.98	LLN2D222MELB50
	35 × 40	4920	0.15	1.98	LLN2D222MELC40
2700	35 × 50	5450	0.15	2.20	LLN2D272MELC50

250V (2E)					
Cap. (μF)	Size φD × L(mm)	Rated ripple (mA)	tan δ	Leakage Current (mA)	Code
220	20 × 25	1230	0.15	0.70	LLN2E221MELY25
270	22 × 25	1310	0.15	0.77	LLN2E271MELZ25
330	22 × 30	1750	0.15	0.86	LLN2E331MELZ30
390	22 × 30	1910	0.15	0.93	LLN2E391MELZ30
	25 × 25	1910	0.15	0.93	LLN2E391MELA25
470	22 × 35	2110	0.15	1.02	LLN2E471MELZ35
	25 × 30	2110	0.15	1.02	LLN2E471MELA30
560	22 × 40	2250	0.15	1.12	LLN2E561MELZ40
	25 × 30	2250	0.15	1.12	LLN2E561MELA30
	30 × 25	2250	0.15	1.12	LLN2E561MELB25
680	22 × 45	2500	0.15	1.23	LLN2E681MELZ45
	25 × 35	2500	0.15	1.23	LLN2E681MELA35
	30 × 30	2500	0.15	1.23	LLN2E681MELB30
820	22 × 50	2770	0.15	1.35	LLN2E821MELZ50
	25 × 40	2770	0.15	1.35	LLN2E821MELA40
	30 × 30	2770	0.15	1.35	LLN2E821MELB30
	35 × 25	2770	0.15	1.35	LLN2E821MELC25
1000	25 × 50	3320	0.15	1.50	LLN2E102MELA50
	30 × 35	3320	0.15	1.50	LLN2E102MELB35
	35 × 30	3320	0.15	1.50	LLN2E102MELC30
1200	30 × 40	3840	0.15	1.64	LLN2E122MELB40
	35 × 35	3840	0.15	1.64	LLN2E122MELC35
1500	30 × 50	4250	0.15	1.83	LLN2E152MELB50
	35 × 40	4250	0.15	1.83	LLN2E152MELC40
1800	35 × 45	4550	0.15	2.01	LLN2E182MELC45

400V (2G)					
Cap. (μF)	Size φD × L(mm)	Rated ripple (mA)	tan δ	Leakage Current (mA)	Code
82	20 × 25	800	0.15	0.54	LLN2G820MELY25
100	20 × 25	940	0.15	0.60	LLN2G101MELY25
120	20 × 30	1080	0.15	0.65	LLN2G121MELY30
	22 × 25	1080	0.15	0.65	LLN2G121MELZ25
150	20 × 35	1210	0.15	0.73	LLN2G151MELY35
	22 × 30	1210	0.15	0.73	LLN2G151MELZ30
	25 × 25	1210	0.15	0.73	LLN2G151MELA25
180	20 × 40	1450	0.15	0.80	LLN2G181MELY40
	22 × 35	1450	0.15	0.80	LLN2G181MELZ35
	25 × 30	1450	0.15	0.80	LLN2G181MELA30
220	22 × 40	1580	0.15	0.88	LLN2G221MELZ40
	25 × 30	1580	0.15	0.88	LLN2G221MELA30
	30 × 25	1580	0.15	0.88	LLN2G221MELB25
270	22 × 45	1670	0.15	0.98	LLN2G271MELZ45
	25 × 35	1670	0.15	0.98	LLN2G271MELA35
	30 × 25	1670	0.15	0.98	LLN2G271MELB25
	22 × 50	1900	0.15	1.08	LLN2G331MELZ50
330	25 × 40	1900	0.15	1.08	LLN2G331MELA40
	30 × 30	1900	0.15	1.08	LLN2G331MELB30
	35 × 25	1900	0.15	1.08	LLN2G331MELC25
	25 × 45	2130	0.15	1.18	LLN2G391MELA45
390	30 × 35	2130	0.15	1.18	LLN2G391MELB35
	35 × 30	2130	0.15	1.18	LLN2G391MELC30
470	30 × 40	2390	0.15	1.30	LLN2G471MELB40
	35 × 30	2390	0.15	1.30	LLN2G471MELC30
560	30 × 45	2690	0.15	1.41	LLN2G561MELB45
	35 × 35	2690	0.15	1.41	LLN2G561MELC35
680	30 × 50	2960	0.15	1.56	LLN2G681MELB50
	35 × 40	2960	0.15	1.56	LLN2G681MELC40
820	35 × 45	3250	0.15	1.71	LLN2G821MELC45

Rated Ripple (mA<sub>rms</sub>) at 85°C 120Hz



## ■ Dimensions

450V (2W)					
Cap. (μF)	Size φD × L(mm)	Rated ripple (mA)	tan δ	Leakage Current (mA)	Code
68	20 × 25	660	0.20	0.52	LLN2W680MELY25
82	20 × 25	830	0.20	0.57	LLN2W820MELY25
100	20 × 30	930	0.20	0.63	LLN2W101MELY30
	22 × 25	930	0.20	0.63	LLN2W101MELZ25
120	20 × 35	1040	0.20	0.69	LLN2W121MELY35
	22 × 30	1040	0.20	0.69	LLN2W121MELZ30
	25 × 25	1040	0.20	0.69	LLN2W121MELA25
150	20 × 40	1290	0.20	0.77	LLN2W151MELY40
	22 × 35	1290	0.20	0.77	LLN2W151MELZ35
	25 × 30	1290	0.20	0.77	LLN2W151MELA30
180	22 × 40	1400	0.20	0.85	LLN2W181MELZ40
	25 × 30	1400	0.20	0.85	LLN2W181MELA30
	30 × 25	1400	0.20	0.85	LLN2W181MELB25
220	22 × 45	1660	0.20	0.94	LLN2W221MELZ45
	25 × 35	1660	0.20	0.94	LLN2W221MELA35
	30 × 30	1660	0.20	0.94	LLN2W221MELB30
270	22 × 50	1810	0.20	1.04	LLN2W271MELZ50
	25 × 40	1810	0.20	1.04	LLN2W271MELA40
	30 × 30	1810	0.20	1.04	LLN2W271MELB30
	35 × 25	1810	0.20	1.04	LLN2W271MELC25
330	25 × 50	2100	0.20	1.15	LLN2W331MELA50
	30 × 35	2100	0.20	1.15	LLN2W331MELB35
	35 × 30	2100	0.20	1.15	LLN2W331MELC30
390	30 × 40	2320	0.20	1.25	LLN2W391MELB40
	35 × 35	2320	0.20	1.25	LLN2W391MELC35
470	30 × 45	2660	0.20	1.37	LLN2W471MELB45
	35 × 40	2660	0.20	1.37	LLN2W471MELC40
560	35 × 45	2820	0.20	1.50	LLN2W561MELC45
680	35 × 50	3000	0.20	1.65	LLN2W681MELC50

Rated Ripple (mA) at 85°C 120Hz

## ● Frequency coefficient of rated ripple current

Frequency (Hz)	50	60	120	300	1k	10k	50k~
160~250V	0.81	0.85	1.00	1.17	1.32	1.45	1.50
	400~450V	0.77	0.82	1.00	1.16	1.30	1.43