

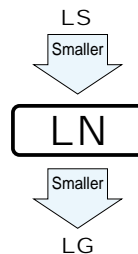
# ALUMINUM ELECTROLYTIC CAPACITORS

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



- 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).

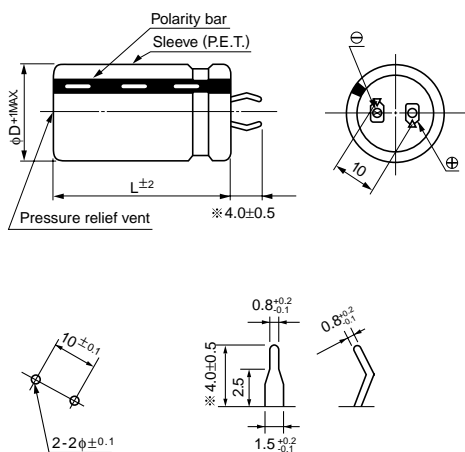
Products which are scheduled to discontinue.  
Not recommended for new designs



## Specifications

Item	Performance Characteristics								
Category Temperature Range	- 40 to + 85°C (160 to 250V), - 25 to + 85°C (400 to 450V)								
Rated Voltage Range	160 to 450V								
Rated Capacitance Range	68 to 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 to 400	450	Measurement frequency : 120Hz, Temperature : 20°C					
	tan δ (MAX.)	0.15	0.20						
Stability at Low Temperature	Rated voltage(V)	160 to 250	350 to 450	Measurement frequency : 120Hz					
	Impedance ratio ZT/Z20 (MAX.)	Z - 25°C/Z+20°C	4		8				
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
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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
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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.								

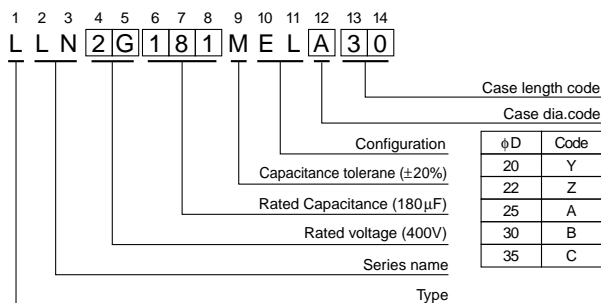
## Drawing



(PC board hole dimensions) (Terminal dimensions)

\* The other terminal is also available upon request.  
Please refer to page 263 for schematic of dimensions.

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



Minimum order quantity : 50pcs.

● Dimension table in next page.



## ■ 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
	25 × 45	3500	0.15	1.46	LLN2D122MELA45
1200	30 × 35	3610	0.15	1.46	LLN2D122MELB35
	35 × 30	3570	0.15	1.46	LLN2D122MELC30
	25 × 50	3870	0.15	1.64	LLN2D152MELA50
1500	30 × 40	3870	0.15	1.64	LLN2D152MELB40
	35 × 30	3870	0.15	1.64	LLN2D152MELC30
	30 × 45	4320	0.15	1.80	LLN2D182MELB45
1800	35 × 35	4320	0.15	1.80	LLN2D182MELC35
	30 × 50	4920	0.15	1.98	LLN2D222MELB50
2200	35 × 40	4920	0.15	1.98	LLN2D222MELC40
	2700	35 × 50	5450	0.15	2.20

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
	22 × 40	2250	0.15	1.12	LLN2E561MELZ40
560	25 × 30	2250	0.15	1.12	LLN2E561MELA30
	30 × 25	2250	0.15	1.12	LLN2E561MELB25
	22 × 45	2500	0.15	1.23	LLN2E681MELZ45
680	25 × 35	2500	0.15	1.23	LLN2E681MELA35
	30 × 30	2500	0.15	1.23	LLN2E681MELB30
	22 × 50	2770	0.15	1.35	LLN2E821MELZ50
820	25 × 40	2770	0.15	1.35	LLN2E821MELA40
	30 × 30	2770	0.15	1.35	LLN2E821MELB30
	35 × 25	2770	0.15	1.35	LLN2E821MELC25
	25 × 50	3320	0.15	1.50	LLN2E102MELA50
1000	30 × 35	3320	0.15	1.50	LLN2E102MELB35
	35 × 30	3320	0.15	1.50	LLN2E102MELC30
	30 × 40	3840	0.15	1.64	LLN2E122MELB40
1200	35 × 35	3840	0.15	1.64	LLN2E122MELC35
	30 × 50	4250	0.15	1.83	LLN2E152MELB50
1500	35 × 40	4250	0.15	1.83	LLN2E152MELC40
	1800	35 × 45	4550	0.15	2.01

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
	20 × 40	1450	0.15	0.80	LLN2G181MELY40
180	22 × 35	1450	0.15	0.80	LLN2G181MELZ35
	25 × 30	1450	0.15	0.80	LLN2G181MELA30
	22 × 40	1580	0.15	0.88	LLN2G221MELZ40
220	25 × 30	1580	0.15	0.88	LLN2G221MELA30
	30 × 25	1580	0.15	0.88	LLN2G221MELB25
	22 × 45	1670	0.15	0.98	LLN2G271MELZ45
270	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
	30 × 40	2390	0.15	1.30	LLN2G471MELB40
470	35 × 30	2390	0.15	1.30	LLN2G471MELC30
	30 × 45	2690	0.15	1.41	LLN2G561MELB45
560	35 × 35	2690	0.15	1.41	LLN2G561MELC35
	30 × 50	2960	0.15	1.56	LLN2G681MELB50
680	35 × 40	2960	0.15	1.56	LLN2G681MELC40
	820	35 × 45	3250	0.15	1.71

Rated Ripple (mArms) at 85°C 120Hz

CAT.8100W



## ■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<sub>rms</sub>) at 85°C 120Hz

## ●Frequency coefficient of rated ripple current

Frequency (Hz)	50	60	120	300	1k	10k	50k or more
160 to 250V	0.81	0.85	1.00	1.17	1.32	1.45	1.50
400 to 450V	0.77	0.82	1.00	1.16	1.30	1.41	1.43