ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

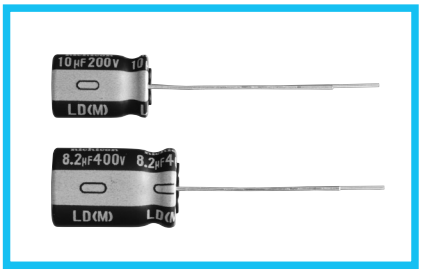
LD Miniature sized, Long Life Assurance series

Long Life

Expanded

- Long Life product withstanding load life of 10000 to 20000 hours at +105°C.
- Suited for the power supply for LED lighting.
- Compliant to the RoHS directive (2011/65/EU).

CY HE Long Life **LD**



Specifications

Item	Performance Characteristics		
Category Temperature Range	−25 to +105°C(10 to 100V, 450V), −40 to +105°C(160 to 400V)		
Rated Voltage Range	10 to 450V		
Rated Capacitance Range	1 to 330μF		
Capacitance Tolerance	±20% at 120Hz, 20°C		
Leakage Current	Rated Voltage(V)	10 to 100	160 to 450
	—	After 2 minute's application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3(μA), whichever is greater.	After 1 minute's application of rated voltage at 20°C, CV ≦ 1000 : I=0.1CV+40(μA) or less After 1 minute's application of rated voltage at 20°C, CV>1000: I=0.04CV+100(μA) or less
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C		

Rated voltage (V)	10	16	25	35	50	63	100	160 to 450
tan δ (MAX.)	0.45	0.35	0.3	0.22	0.19	0.17	0.15	0.24

Stability at Low Temperature — Measurement frequency : 120Hz

Rated voltage (V)		10	16	25·35	50 to 100	160 to 250	400	450
Impedance ratio	Z−25°C / Z+20°C	8	6	4	3	3	6	6
ZT / Z20 (MAX.)	Z−40°C / Z+20°C	—	—	—	—	8	10	—

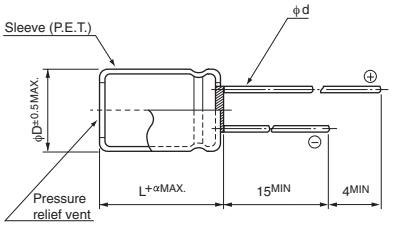
Endurance

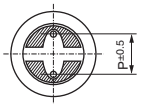
Rated Voltage(V)	10 to 100	160 to 450
—	The specifications listed at right shall be met when the capacitors are restored to 20˚C after D.C. bias plus rated ripple current is applied for 10000 hours at 105˚C, the peak voltage shall not exceed the rated voltage.	The specifications listed at right shall be met when the capacitors are restored to 20˚C after D.C. bias plus rated ripple current is applied for 20000 hours (12000 hours for φ6.3×11L, φ8×9L φ10×9L, 15000 hours φ8×11.5L, φ10×12.5L) at 105°C, the peakvoltage shall not exceed the rated voltage.

Capacitance change	Within ± 25%(10V to 100V) ± 30%(160V to 450V) 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 105˚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 dark brown sleeve.

Radial Lead Type





(mm)

φD	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
α	1.5	1.5	2.0	2.0	2.0	2.0	2.0

Type numbering system (Example : 400V 6.8μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	L	D	2	G	6	R	8	M	P	D	

- Size code
- Configuration ※
- Capacitance tolerance (±20%)
- Rated capacitance (6.8μF)
- Rated voltage (400V)
- Series name
- Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 • 10	PD
12.5 to 18	HD

• Please refer to page 20 about the end seal configuration.
• Please refer to page 20, 21, 22 about the formed or taped product spec.
• Please refer to page 4 for the minimum order quantity.

LD series

■Dimensions

Cap \ V	Code	10		16		25		35		50		63		100	
		1A		1C		1E		1V		1H		1J		2A	
1	010									5×11	25			Case size φD × L (mm)	※
2.2	2R2									5×11	35				
3.3	3R3									5×11	70				
4.7	4R7									5×11	80			5×11	70
6.8	6R8									5×11	80			5×11	70
10	100									5×11	90	5×11	80	6.3×11	150
22	220									5×11	135	6.3×11	170	8×11.5	230
33	330					5×11	130	5×11	130	6.3×11	190	6.3×11	170		
47	470			5×11	130	5×11	130	6.3×11	210	6.3×11	190	8×11.5	240		
100	101	5×11	130	6.3×11	210	6.3×11	210	8×11.5	330	8×11.5	270				
150	151			6.3×11	210	8×11.5	330								
220	221	6.3×11	210	8×11.5	330										
270	271			8×11.5	330										
330	331	8×11.5	330												

※ : Rated ripple (mArms) at 105°C 100kHz

• Frequency coefficient of rated ripple current

Cap.(μF) \ Frequency	120Hz	1kHz	10kHz	100kHz
1 to 10μF	0.42	0.60	0.80	1.00
22 to 33μF	0.55	0.75	0.90	1.00
47 to 330μF	0.70	0.85	0.95	1.00

Cap \ V	Code	160		200		250		400		450	
		2C		2D		2E		2G		2W	
1	010							6.3 × 11	24	Case size φD × L (mm)	※
1.2	1R2							8 × 9	28		
1.5	1R5							6.3 × 11	29		
								▲8 × 9	30		
1.8	1R8					6.3 × 11	33	8 × 9	33		
2.2	2R2			6.3 × 11	36	6.3 × 11	36	8 × 11.5	40		
								▲8 × 9	33		
2.7	2R7							8 × 11.5	43		
3.3	3R3			6.3 × 11	42	6.3 × 11	42	8 × 11.5	47		
								▲10 × 9	48		
3.9	3R9							10 × 12.5	57		
4.7	4R7			6.3 × 11	49	8 × 9	53	10 × 12.5	61		
5.6	5R6	6.3 × 11	52	6.3 × 11	50	8 × 11.5	62	10 × 12.5	64	10 × 16	58
				▲8 × 9	56						
6.8	6R8	6.3 × 11	55	8 × 9	62	8 × 11.5	68	10 × 16	85	10 × 16	62
8.2	8R2			8 × 9	66	10 × 9	76	10 × 16	88	10 × 20	88
10	100	8 × 9	70	8 × 11.5	80	10 × 12.5	90			10 × 20	92
12	120			10 × 9	88	10 × 12.5	97				
15	150	8 × 11.5	92							12.5 × 20	140
		▲10 × 9	95								
18	180			10 × 12.5	113	10 × 16	129				
22	220	10 × 12.5	121							12.5 × 25	240
										▲16 × 20	292
27	270			10 × 16	149					16 × 20	305
33	330	10 × 16	158							16 × 25	392
										▲18 × 20	312
47	470									18 × 25	480
68	680									18 × 31.5	520

• Frequency coefficient of rated ripple current

Cap.(μF) \ Frequency	120Hz	1kHz	10kHz	100kHz or more
1 to 5.6μF	1.00	1.60	1.80	2.00
6.8 to 18μF	1.00	1.50	1.70	1.90
22 to 68μF	1.00	1.40	1.60	1.80

※: Rated ripple current (mArms) at 105°C 120Hz

▲: In this case, 6 will be put at 12th digit of type numbering system.