

ALUMINUM ELECTROLYTIC CAPACITORS

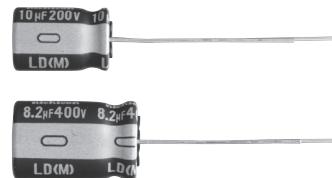
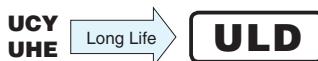
nichicon

ULD

Miniature sized, Long Life Assurance



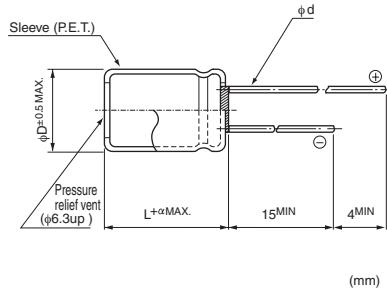
- Long Life product withstanding load life of 10000 to 20000 hours at +105°C.
- Suited for the power supply for LED lighting.
- Compliant to the RoHS directive (2011/65/EU).



■ Specifications

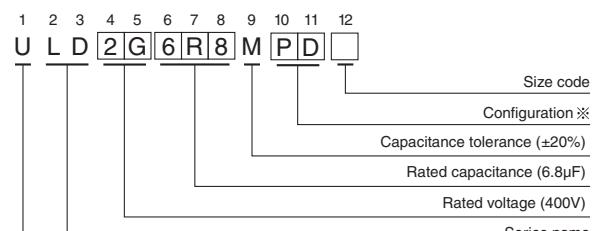
Item	Performance Characteristics																	
Category Temperature Range	-25 to +105°C(10 to 100V, 450V), -40 to +105°C(160 to 400V)																	
Rated Voltage Range	10 to 450V																	
Rated Capacitance Range	1 to 330μF																	
Capacitance Tolerance	±20% at 120Hz, 20°C																	
	Rated Voltage(V)	10 to 100				160 to 450												
Leakage Current	—	After 2 minutes' 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)	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	Rated voltage (V)	10	16	25-35	50 to 100	160 to 250	400	450 Measurement frequency : 120Hz at 20°C										
	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	—										
	Rated Voltage(V)	10 to 100				160 to 450												
Endurance	—	The specifications listed below 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 φ6.3x11L, φ8x9L φ10x9L, 15000 hours φ8x11.5L, φ10x12.5L) at 105°C, the peak voltage shall not exceed the rated voltage.				The specifications listed below 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 φ6.3x11L, φ8x9L φ10x9L, 15000 hours φ8x11.5L, φ10x12.5L) at 105°C, the peak voltage 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



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)



※ 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.

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ULD

Dimensions

Cap \ V	Code	10	16	25	35	50	63	100
Cap		1A	1C	1E	1V	1H	1J	2A
1	010					5x11	25	
2.2	2R2					5x11	35	
3.3	3R3					5x11	70	
4.7	4R7					5x11	80	
6.8	6R8					5x11	80	
10	100					5x11	90	5x11 80 6.3x11 150
22	220					5x11	135	6.3x11 170 8x11.5 230
33	330			5x11 130	5x11 130	6.3x11 190	6.3x11 170	
47	470		5x11 130	5x11 130	6.3x11 210	6.3x11 190	8x11.5 240	
100	101	5x11 130	6.3x11 210	6.3x11 210	8x11.5 330	8x11.5 270		
150	151		6.3x11 210	8x11.5 330				
220	221	6.3x11 210	8x11.5 330					
270	271		8x11.5 330					
330	331	8x11.5 330						

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

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

Cap \ V	Code	160	200	250	400	450
Cap		2C	2D	2E	2G	2W
1	010				6.3 x 11	24
1.2	1R2				8 x 9	28
1.5	1R5				6.3 x 11	29
1.8	1R8			6.3 x 11	33	8 x 9 33
2.2	2R2		6.3 x 11 36	6.3 x 11	36	8 x 11.5 40
2.7	2R7					8 x 11.5 43
3.3	3R3		6.3 x 11 42	6.3 x 11	42	8 x 11.5 47
3.9	3R9					▲ 10 x 9 48
4.7	4R7		6.3 x 11 49	8 x 9	53	10 x 12.5 57
5.6	5R6	6.3 x 11 52	6.3 x 11 50	8 x 11.5	62	10 x 12.5 64
6.8	6R8	6.3 x 11 55	8 x 9 62	8 x 11.5	68	10 x 16 85
8.2	8R2		8 x 9 66	10 x 9	76	10 x 16 88
10	100	8 x 9 70	8 x 11.5 80	10 x 12.5	90	
12	120		10 x 9 88	10 x 12.5	97	
15	150	8 x 11.5 92				12.5 x 20 140
18	180		10 x 12.5 113	10 x 16	129	
22	220	10 x 12.5 121				12.5 x 25 240
27	270		10 x 16 149			▲ 16 x 20 292
33	330	10 x 16 158				16 x 20 305
47	470					16 x 25 392
68	680					▲ 18 x 20 312
						18 x 25 480
						18 x 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 (mA rms) at 105°C 120Hz

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

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