



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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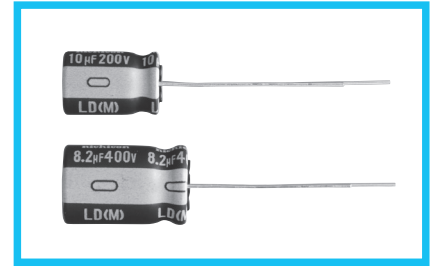


ULD

Miniature sized, Long Life Assurance



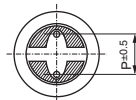
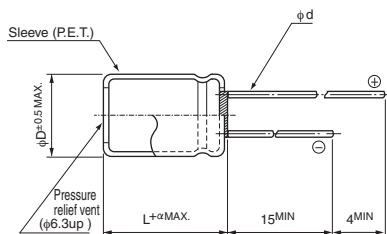
- Long Life product withstanding load life of 10000 to 20000 hours at +105°C.
- Suited for the power supply for LED lighting.
- Compliant to the RoHS directive (2011/65/EU).



Specifications

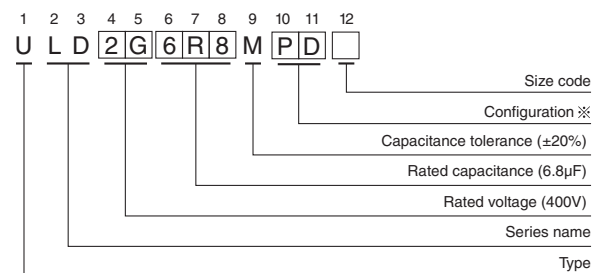
Item	Performance Characteristics								
Category Temperature Range	-25 to +105°C(10 to 100V, 450V), -40 to +105°C(160 to 400V)								
Rated Voltage Range	10 to 450V								
Rated Capacitance Range	1 to 330µF								
Capacitance Tolerance	±20% at 120Hz, 20°C								
Leakage Current	Rated Voltage(V)	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 ZT / Z20 (MAX.)	Z-25°C / Z+20°C	8	6	4	3	3	6	6
		Z-40°C / Z+20°C	—	—	—	—	8	10	—
Endurance	Rated Voltage(V)	10 to 100			160 to 450				
	—	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 10000 hours 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 φ6.3×11L, φ8×9L φ10×9L, 15000 hours φ8×11.5L, φ10×12.5L) 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



	(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)



※ 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.

ULD

■ 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		
1.8	1R8					6.3 × 11	33	▲ 8 × 9	30		
2.2	2R2			6.3 × 11	36	6.3 × 11	36	8 × 9	33		
2.7	2R7							8 × 11.5	40		
3.3	3R3			6.3 × 11	42	6.3 × 11	42	▲ 8 × 9	33		
3.9	3R9							8 × 11.5	43		
4.7	4R7			6.3 × 11	49	8 × 9	53	8 × 11.5	47		
5.6	5R6	6.3 × 11	52	6.3 × 11	50	8 × 11.5	62	▲ 10 × 9	48		
6.8	6R8	6.3 × 11	55	▲ 8 × 9	56			10 × 12.5	57		
8.2	8R2			8 × 9	62	8 × 11.5	68	10 × 12.5	61		
10	100	8 × 9	70	8 × 9	66	10 × 9	76	10 × 12.5	64	10 × 16	58
12	120			8 × 11.5	80	10 × 12.5	90	10 × 16	85	10 × 16	62
15	150	8 × 11.5	92	10 × 9	88	10 × 12.5	97	10 × 16	88	10 × 20	88
18	180	▲ 10 × 9	95					10 × 16	88	10 × 20	92
22	220	10 × 12.5	121	10 × 9	88	10 × 12.5	97	10 × 16	129		
27	270			10 × 12.5	113	10 × 16	129			12.5 × 25	240
33	330	10 × 16	158							▲ 16 × 20	292
47	470			10 × 16	149					16 × 20	305
68	680									16 × 25	392
										▲ 18 × 20	312
										18 × 25	480
										18 × 31.5	520

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

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

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