



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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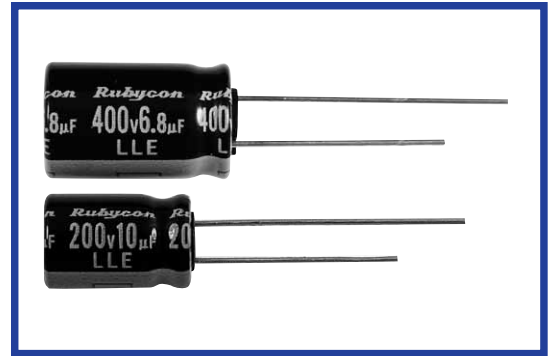
LLE SERIES

UPGRADE

Load Life: 105°C 12000~20000hours.

◆FEATURES

- Ultra Long Life.
- For LED Lighting.
- RoHS compliance.



◆SPECIFICATIONS

Items	Characteristics																									
Category Temperature Range	-40~+105°C	-25~+105°C																								
Rated Voltage Range	160~400V.DC	450V.DC																								
Capacitance Tolerance	±20%(20°C,120Hz)																									
Leakage Current(MAX)	<table border="1"> <tr> <th>CV ≤ 1000</th> <th>CV > 1000</th> </tr> <tr> <td>I=0.1CV+40µA (1minute) I=0.03CV+15µA (5minutes)</td> <td>I=0.04CV+100µA (1minute) I=0.02CV+25µA (5minutes)</td> </tr> </table>	CV ≤ 1000	CV > 1000	I=0.1CV+40µA (1minute) I=0.03CV+15µA (5minutes)	I=0.04CV+100µA (1minute) I=0.02CV+25µA (5minutes)	I=Leakage Current(µA) C=Capacitance(µF) V=Rated Voltage(V)																				
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Dissipation Factor(MAX) (tanδ)	<table border="1"> <tr> <th>Rated Voltage (V)</th> <th>160</th> <th>200</th> <th>250</th> <th>400</th> <th>450</th> </tr> <tr> <td>(20°C,120Hz)</td> <td>0.24</td> <td>0.24</td> <td>0.24</td> <td>0.24</td> <td>0.24</td> </tr> </table>		Rated Voltage (V)	160	200	250	400	450	(20°C,120Hz)	0.24	0.24	0.24	0.24	0.24												
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Endurance	After life test with rated ripple current at conditions stated in the table below at 105°C,the capacitors shall meet the following requirements. <table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±30% of the initial value.</td> <td>Case Size</td> <td>Life Time (hrs)</td> </tr> <tr> <td>Dissipation Factor</td> <td>Not more than 300% of the specified value.</td> <td>6.3×11.8×9,10×9</td> <td>12000</td> </tr> <tr> <td>Leakage Current</td> <td>Not more than the specified value.</td> <td>8×11.5,10×12.5</td> <td>15000</td> </tr> <tr> <td></td> <td></td> <td>10×16, 10×20 φD ≥ 12.5</td> <td>20000</td> </tr> </table>		Capacitance Change	Within ±30% of the initial value.	Case Size	Life Time (hrs)	Dissipation Factor	Not more than 300% of the specified value.	6.3×11.8×9,10×9	12000	Leakage Current	Not more than the specified value.	8×11.5,10×12.5	15000			10×16, 10×20 φD ≥ 12.5	20000								
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Low Temperature Stability Impedance Ratio(MAX)	<table border="1"> <tr> <th>Rated Voltage (V)</th> <th>160</th> <th>200</th> <th>250</th> <th>400</th> <th>450</th> </tr> <tr> <td>(120Hz)</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Z(-25°C)/Z(20°C)</td> <td>3</td> <td>3</td> <td>3</td> <td>6</td> <td>6</td> </tr> <tr> <td>Z(-40°C)/Z(20°C)</td> <td>8</td> <td>8</td> <td>8</td> <td>10</td> <td>-</td> </tr> </table>		Rated Voltage (V)	160	200	250	400	450	(120Hz)						Z(-25°C)/Z(20°C)	3	3	3	6	6	Z(-40°C)/Z(20°C)	8	8	8	10	-
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Z(-25°C)/Z(20°C)	3	3	3	6	6																					
Z(-40°C)/Z(20°C)	8	8	8	10	-																					

◆MULTIPLIER FOR RIPPLE CURRENT

Frequency Coefficient

160~400V.DC

Frequency (Hz)	120	1k	10k	100k ≤
Coefficient				
1~5.6µF	1.0	1.6	1.8	2.0
6.8~18µF	1.0	1.5	1.7	1.9
22~33µF	1.0	1.4	1.6	1.8

450V.DC

Frequency (Hz)	120	1k	10k	100k ≤
Coefficient				
4.7~15µF	0.3	0.6	0.9	1.0
22~68µF	0.4	0.7	0.9	1.0

◆OPTION

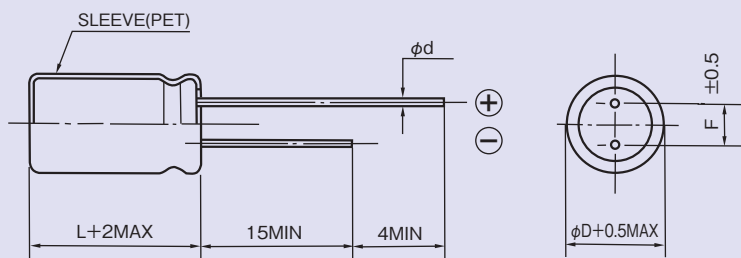
PET Sleeve	Code
	EFC

◆PART NUMBER

□□□ / LLE / □□□□□ / M / □□□ / □□ / D×L
 Rated Voltage Series Capacitance Capacitance Tolerance Option Lead Forming Case Size

◆ **DIMENSIONS**

(mm)



ϕD	6.3	8	10	12.5	16	18
ϕd	0.5	0.6		0.8		
F	2.5	3.5	5		7.5	

◆ **STANDARD SIZE**

WV (V.DC)	Cap (μF)	Size ϕDXL (mm)	Ripple Current (mA r.m.s. 105°C)	
			120Hz	100kHz
160 (2C)	5.6	6.3×11	52	104
	10	8×9	70	133
	15	8×11.5	92	174
		10×9	95	180
	22	10×12.5	121	217
	33	10×16	158	284
200 (2D)	2.2	6.3×11	36	72
	3.3	6.3×11	42	84
	4.7	6.3×11	49	98
	5.6	8×9	56	112
	6.8	8×9	62	117
	8.2	8×9	66	125
	10	8×11.5	80	152
	12	10×9	88	167
	18	10×12.5	113	214
	27	10×16	149	268
250 (2E)	1.8	6.3×11	33	66
	2.2	6.3×11	36	72
	3.3	6.3×11	42	84
	4.7	8×9	53	106
	5.6	8×11.5	62	124
	6.8	8×11.5	68	129
	8.2	10×9	76	144
	10	10×12.5	90	171
	12	10×12.5	97	184
	18	10×16	127	241

WV (V.DC)	Cap (μF)	Size ϕDXL (mm)	Ripple Current (mA r.m.s. 105°C)	
			120Hz	100kHz
400 (2G)	1	6.3×11	24	48
	1.2	8×9	28	56
	1.5	8×9	30	60
	1.8	8×9	33	66
	2.2	8×9	36	72
		8×11.5	40	80
	2.7	8×11.5	43	86
		8×11.5	47	94
	3.3	10×9	48	96
		10×12.5	57	114
	4.7	10×12.5	61	122
	6.8	10×16	85	161
450 (2W)	4.7	10×16	54	180
		10×20	66	220
	6.8	10×20	84	280
	8.2	10×20	84	280
	10	12.5×20	135	450
	15	12.5×25	180	600
	22	12.5×25	240	600
		16×20	292	730
	33	16×25	392	980
		18×20	312	780
47	18×25	480	1200	
68	18×31.5	520	1300	