

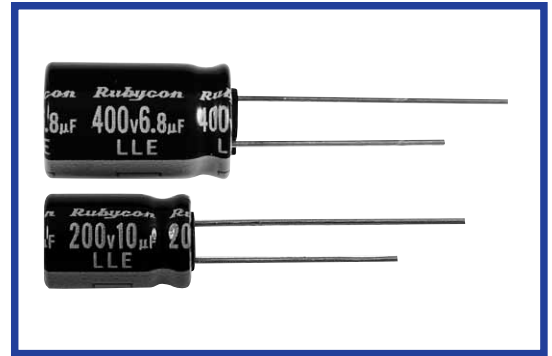
LLE SERIES

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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(20°C,120Hz)	0.24	0.24	0.24	0.24	0.24																					
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> <th>Capacitance Change</th> <td>Within ±30% of the initial value.</td> </tr> <tr> <th>Dissipation Factor</th> <td>Not more than 300% of the specified value.</td> </tr> <tr> <th>Leakage Current</th> <td>Not more than the specified value.</td> </tr> </table>	Capacitance Change	Within ±30% of the initial value.	Dissipation Factor	Not more than 300% of the specified value.	Leakage Current	Not more than the specified value.	<table border="1"> <tr> <th>Case Size</th> <th>Life Time (hrs)</th> </tr> <tr> <td>6.3×11.8×9,10×9</td> <td>12000</td> </tr> <tr> <td>8×11.5,10×12.5</td> <td>15000</td> </tr> <tr> <td>10×16, 10×20 φD ≥ 12.5</td> <td>20000</td> </tr> </table>	Case Size	Life Time (hrs)	6.3×11.8×9,10×9	12000	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	-
Rated Voltage (V)	160	200	250	400	450																					
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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 ≤
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 ≤
4.7~15µF	0.3	0.6	0.9	1.0
22~68µF	0.4	0.7	0.9	1.0

◆OPTION

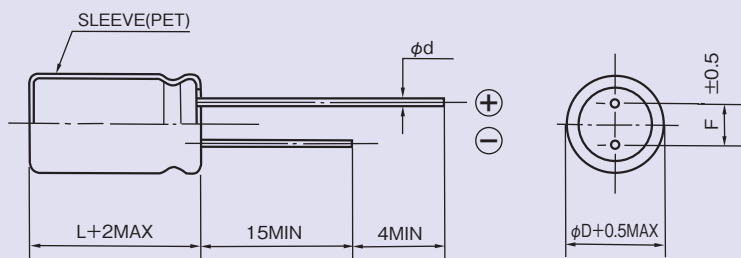
PET Sleeve	Code
	EFC

◆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
		10×9	48	96
	3.3	8×11.5	47	94
		10×9	48	96
3.9	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	