

LLE SERIES
Load Life: 105°C 12000~20000 hours

•For LED Lighting.

 RoHS
compliance

◆SPECIFICATIONS

Items	Characteristics																																																	
Category Temperature Range	-40~+105℃					-25~+105℃																																												
Rated Voltage Range	160~400Vdc					450Vdc																																												
Capacitance Tolerance	±20% (20℃, 120Hz)																																																	
Leakage Current(MAX)	<table><tr><td>CV≤1000</td><td colspan="5">CV>1000</td></tr><tr><td>I=0.1CV+40μA (1minute)</td><td colspan="5">I=0.04CV+100μA (1minute)</td></tr><tr><td>I=0.03CV+15μA (5minutes)</td><td colspan="5">I=0.02CV+25μA (5minutes)</td></tr></table>					CV≤1000	CV>1000					I=0.1CV+40μA (1minute)	I=0.04CV+100μA (1minute)					I=0.03CV+15μA (5minutes)	I=0.02CV+25μA (5minutes)					I=Leakage Current(μA) C=Capacitance(μF) V=Rated Voltage(Vdc)																										
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Dissipation Factor(MAX) (tanδ)	<table><tr><td>Rated Voltage (Vdc)</td><td>160</td><td>200</td><td>250</td><td>400</td><td>450</td><td colspan="4">(20℃, 120Hz)</td></tr><tr><td>tanδ</td><td>0.24</td><td>0.24</td><td>0.24</td><td>0.24</td><td>0.24</td><td colspan="4"></td></tr></table>										Rated Voltage (Vdc)	160	200	250	400	450	(20℃, 120Hz)				tanδ	0.24	0.24	0.24	0.24	0.24																								
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Endurance	After applying rated voltage with rated ripple current for specified time at 105℃, the capacitors shall meet the following requirements. <table><tr><td>Capacitance Change</td><td colspan="5">Within ±30% of the initial value.</td><td colspan="2">Case Size</td><td colspan="2">Life Time (hrs)</td></tr><tr><td>Dissipation Factor</td><td colspan="5">Not more than 300% of the specified value.</td><td colspan="2">6.3×11, 8×9, 10×9</td><td colspan="2">12000</td></tr><tr><td></td><td colspan="5"></td><td colspan="2">8×11.5, 10×12.5</td><td colspan="2">15000</td></tr><tr><td>Leakage Current</td><td colspan="5">Not more than the specified value.</td><td colspan="2">10×16, 10×20 φD≥12.5</td><td colspan="2">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								8×11.5, 10×12.5		15000		Leakage Current	Not more than the specified value.					10×16, 10×20 φD≥12.5		20000	
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Low Temperature Stability Impedance Ratio(MAX)	<table><tr><td>Rated Voltage (Vdc)</td><td>160</td><td>200</td><td>250</td><td>400</td><td>450</td><td colspan="4">(120Hz)</td></tr><tr><td>Z(-25℃)/Z(20℃)</td><td>3</td><td>3</td><td>3</td><td>6</td><td>6</td><td colspan="4"></td></tr><tr><td>Z(-40℃)/Z(20℃)</td><td>8</td><td>8</td><td>8</td><td>10</td><td>—</td><td colspan="4"></td></tr></table>										Rated Voltage (Vdc)	160	200	250	400	450	(120Hz)				Z(-25℃)/Z(20℃)	3	3	3	6	6					Z(-40℃)/Z(20℃)	8	8	8	10	—														
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◆MULTIPLIER FOR RIPPLE CURRENT

160~400Vdc

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

450Vdc

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

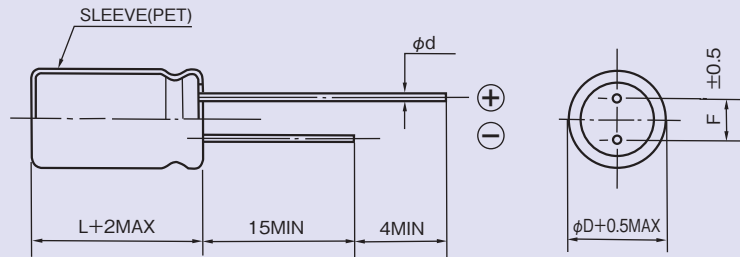
	Code
PET Sleeve	EFC

◆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

Rated Voltage (Vdc)	Capacitance (μF)	Size $\phi D \times L$ (mm)	Rated Ripple Current (mA r.m.s., 105°C)	
			120Hz	100kHz
160	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	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	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

Rated Voltage (Vdc)	Capacitance (μF)	Size $\phi D \times L$ (mm)	Rated Ripple Current (mA r.m.s., 105°C)	
			120Hz	100kHz
400	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
	3.9	10×12.5	57	114
	4.7	10×12.5	61	122
	6.8	10×16	85	161
450	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