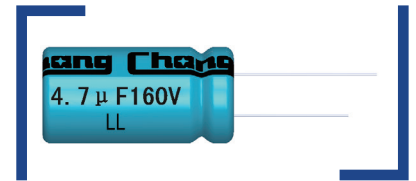




# LL 系列 Series

## 特点 Features

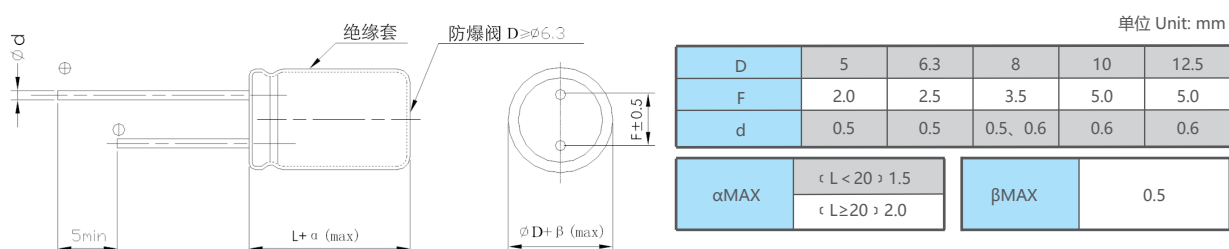
- 耐高纹波，耐高温，超长寿命，105°C 12,000~20,000 小时。  
High Ripple Current High Temperature , extremely Long Life,  
Life time 105°C 12,000~20,000hours.
- 专为LED驱动电源设计制造。  
Specially designed for light emitting diode lamp (LED)drive source.
- RoHS指令已对应完毕。  
Adapted to the RoHS directive.



## 主要技术性能 Specifications

项目 Items	特性 Characteristics														
使用温度范围 Operating Temperature Range	-40~+105°C														
额定电压范围 Rated Voltage Range	160~450V														
标称容量范围 Nominal Capacitance Range	1~150μF														
标称容量允许偏差 Capacitance Tolerance	± 20% (120Hz, +20°C)														
漏电流 Leakage Current (+20°C)	I ≤ 0.02 CV + 10μA (2分钟, 20°C) 0.02CV + 10μA (at 20°C, after 2 minutes) C: 标称容量Capacitance (μF); V: 额定电压Rated voltage range (V)														
损耗角正切值 (tgδ) Dissipation Factor (+20°C, 120Hz)	<table border="1"> <tr> <td>U<sub>R</sub> (V)</td> <td>160</td> <td>200</td> <td>250</td> <td>350</td> <td>400</td> <td>450</td> </tr> <tr> <td>tgδ</td> <td>0.24</td> <td>0.24</td> <td>0.24</td> <td>0.24</td> <td>0.24</td> <td>0.24</td> </tr> </table>	U <sub>R</sub> (V)	160	200	250	350	400	450	tgδ	0.24	0.24	0.24	0.24	0.24	0.24
U <sub>R</sub> (V)	160	200	250	350	400	450									
tgδ	0.24	0.24	0.24	0.24	0.24	0.24									
温度特性(阻抗比/ 120Hz) Temperature Characteristics (Impedance ratio at 120Hz)	<table border="1"> <tr> <td>U<sub>R</sub> (V)</td> <td>160</td> <td>200</td> <td>250</td> <td>350</td> <td>400</td> <td>450</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>6</td> <td>6</td> <td>6</td> <td>7</td> <td>7</td> <td>9</td> </tr> </table>	U <sub>R</sub> (V)	160	200	250	350	400	450	Z-40°C / Z+20°C	6	6	6	7	7	9
U <sub>R</sub> (V)	160	200	250	350	400	450									
Z-40°C / Z+20°C	6	6	6	7	7	9									
耐久性 Load Life	<p>在+105°C条件下，施加含额定纹波电流的额定电压，持续规定时间，并在+20°C下恢复16小时后，电容器应符合下列要求 The following specifications shall be met when the capacitors are restored to +20°C for 16 hours after D.C. bias rated ripple current is applied at +105°C, the peak voltage shall not exceed the voltage.</p> <table border="1"> <tr> <td>Time</td> <td>6.3×9, 6.3×11, 8×9, 10×9</td> <td>12,000 hours</td> </tr> <tr> <td></td> <td>8×11.5, 8×16, 8×20, 10×12.5</td> <td>15,000 hours</td> </tr> <tr> <td></td> <td>φ≥10×16</td> <td>20,000 hours</td> </tr> </table> <p>Capacitance change : ±30%初始测量值以内 ±30% of the initial measured value Leakage current : ≤初始规定值 ≤Initial specified value Dissipation factor : ≤3倍初始规定值 ≤3 times of the initial specified value</p>	Time	6.3×9, 6.3×11, 8×9, 10×9	12,000 hours		8×11.5, 8×16, 8×20, 10×12.5	15,000 hours		φ≥10×16	20,000 hours					
Time	6.3×9, 6.3×11, 8×9, 10×9	12,000 hours													
	8×11.5, 8×16, 8×20, 10×12.5	15,000 hours													
	φ≥10×16	20,000 hours													
高温贮存 Shelf Life	<p>+105°C 1000小时贮存后，恢复16小时后 After storage for 1000 hours at +105°C and then resumed for 16 hours:</p> <p>Capacitance change : ±20%初始测量值以内 ±20% of the initial measured value Leakage current : ≤2倍初始规定值 ≤2 times of the initial specified value Dissipation factor : ≤2倍初始规定值 ≤2 times of the initial specified value</p>														

## 外形图及尺寸表 Case Size Table



## 允许纹波电流的修正系数 Coefficient of Allowable Ripple Current

频率Frequency (Hz)	50	120	1K	10K	100K
修正系数Coefficient	0.40	0.50	0.80	0.90	1.00

## 尺寸 Dimensions

容量 CR(μF)	代码 Code	电压 UR	160V(2C)			200V(2D)			250V(2E)		
			Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
			φD×L(mm)	ΩMAX	(mA)	φD×L(mm)	ΩMAX	(mA)	φD×L(mm)	ΩMAX	(mA)
1	010		6.3×9	18.5	50	6.3×9	17.4	52	6.3×9	22.0	54
1.5	1R5		6.3×9	13.9	60	6.3×9	17.4	62	6.3×9	22.0	65
1.8	1R8		6.3×9	13.9	65	6.3×9	13.9	68	6.3×11	17.4	70
2.2	2R2		6.3×9	13.9	70	6.3×11	13.9	72	6.3×11	15.1	75
2.7	2R7		6.3×11	13.9	80	6.3×11	11.3	84	6.3×11	15.1	88
3.3	3R3		6.3×11	11.3	85	6.3×11	11.3	90	6.3×11	15.1	92
4.7	4R7		6.3×11	11.3	105	6.3×11	11.3	110	6.3×11	11.8	120
5.6	5R6		6.3×11	11.3	110	8×9	7.98	115	8×9	9.89	130
6.8	6R8		6.3×11	11.3	125	8×9	7.98	130	8×9	9.89	160
8.2	8R2		8×9	11.3	135	8×9	7.98	145	8×9	9.89	175
10	100		8×9	7.5	150	8×11.5	3.65	160	8×11.5	9.89	200
15	150		8×11.5	4.27	190	8×16	3.65	230	10×12.5	8.92	270
		10×9	4.27	210	10×12.5	3.65	280				
22	220		10×12.5	2.25	250	10×16	3.24	340	10×16	4.65	380
33	330		10×16	1.87	415	10×20	2.38	550	10×20	4.65	570
47	470		10×20	1.87	525	12.5×20	1.38	710	12.5×20	4.65	795

容量 CR(μF)	代码 Code	电压 UR	350V(2V)			400V(2G)			450V(2W)		
			Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
			φD×L(mm)	ΩMAX	(mA)	φD×L(mm)	ΩMAX	(mA)	φD×L(mm)	ΩMAX	(mA)
1.0	010		6.3×9	33.0	50	6.3×11	38.0	54	6.3×11	38.0	58
1.2	1R2		6.3×11	33.0	55	8×9	38.0	60	8×11.5	38.0	65
1.5	1R5		6.3×11	33.0	63	8×9	38.0	66	8×11.5	38.0	70
1.8	1R8		6.3×11	33.0	70	8×9	33.0	75	8×11.5	38.0	80
2.2	2R2		8×9	33.0	77	8×9	33.0	78	8×11.5	33.0	88
		8×11.5	33.0	80	8×11.5	33.0	82				
2.7	2R7		8×11.5	33.0	85	8×11.5	33.0	88	8×16	33.0	100
3.3	3R3		8×11.5	21.0	100	8×11.5	21.0	100	8×16	33.0	110
		10×9	21.0	115	10×9	21.0	120				
4.7	4R7		10×9	21.0	120	10×12.5	14.0	126	10×12.5	18.4	145
5.6	5R6		8×16	21.0	135	8×20	14.0	155	10×16	18.4	180
					10×12.5	14.0	158				
6.8	6R8		10×12.5	16.2	165	8×20	10.2	170	10×16	12.0	200
					10×16	10.2	180				
8.2	8R2		10×16	13.5	180	10×16	10.2	190	10×20	12.0	235
10	100		10×16	13.5	215	10×16	9.50	220	10×20	6.50	285
15	150		10×20	9.50	295	12.5×20	4.30	300			

Size φD×L(mm)

Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz

Maximum ESR (Ω) at 20°C 100KHz