



# ALUMINUM ELECTROLYTIC CAPACITORS

## SLE Series Low Impedance and high frequency ( +105°C 高频低阻抗)

■ Features :105°C 2000 hours,Low impedance.

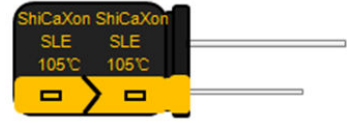
特点:低阻抗, 105°C 2000小时.

■ Recommended Applications :charger power supply high frequency electronic circuit

适用于充电器电源等高频电子线路中.

■ Corresponding product to RoHS (2011/65/EU)

符合RoHS要求的相应产品(2011/65/EU)

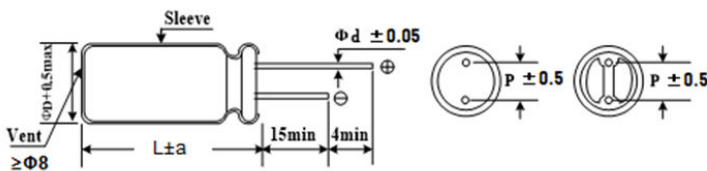


### ■ Specifications(技术性能)

Item 项目	Characteristics性能																											
Operating Temperature Range 温度范围	-40 ~ +105°C																											
Rated Voltage Range 电压范围	6.3 ~ 100VDC																											
Rated Capacitance Range 容量范围	1 ~ 12000μF																											
Capacitance Tolerance 容量偏差	± 20 % at 120Hz , 20°C																											
Leakage Current (MAX) (20°C) 泄漏电流	I=0.01CV or 3(μA) whichever is greater. After rated voltage applied for 2 min 两者取较大值, 2分钟测试																											
Dissipation Factor 损耗角 (tanδ) (120Hz ,20°C)	<table border="1"> <thead> <tr> <th>WV(V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>tan δ</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.08</td> </tr> </tbody> </table> <p>Capacitance &gt; 1000μF, add 0.02per another 1000μF. 容量大于1000uF每增加1000uF损耗角增加0.02.</p>	WV(V)	6.3	10	16	25	35	50	63	100	tan δ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08									
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Low Temperature Stability Impedance Ratio (MAX) 低温阻抗比	<table border="1"> <thead> <tr> <th>WV Z(120Hz)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>Z-25°C / Z+20°C</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>8</td> <td>6</td> <td>6</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> </tr> </tbody> </table>	WV Z(120Hz)	6.3	10	16	25	35	50	63	100	Z-25°C / Z+20°C	4	3	3	3	3	2	2	2	Z-40°C / Z+20°C	8	6	6	4	4	4	4	4
WV Z(120Hz)	6.3	10	16	25	35	50	63	100																				
Z-25°C / Z+20°C	4	3	3	3	3	2	2	2																				
Z-40°C / Z+20°C	8	6	6	4	4	4	4	4																				
High Temperature Load Life 高温负载耐久性	<p>After applying rated voltage for 2000 hours at 105°C. the capacitors shall meet the following requirements. 在105°C环境下连续施加额定电压2000小时后, 符合以下要求.</p> <table border="1"> <tbody> <tr> <td>Capacitance Change 容量</td> <td>Within ± 20 % of initial value 在初始值的±20%</td> </tr> <tr> <td>Dissipation Factor 损耗角</td> <td>Not more than 200% of the specified value 不超过标准值的200%</td> </tr> <tr> <td>Leakage Current 泄漏电流</td> <td>Initial specified value or less 标准值内</td> </tr> </tbody> </table>	Capacitance Change 容量	Within ± 20 % of initial value 在初始值的±20%	Dissipation Factor 损耗角	Not more than 200% of the specified value 不超过标准值的200%	Leakage Current 泄漏电流	Initial specified value or less 标准值内																					
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High Temperature Shelf Life 高温贮存	<p>After leaving capacitors under no load at 105°C for 1000 hours.the capacitors shall meet the same requirement as Endurance. 在105°C环境下不加负载放置1000小时后电性能同耐久性要求.</p>																											

### ■ Diagram of Dimensions

外形尺寸



Unit: mm

ΦD	5	6.3	8	10	13	16	18	22
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0
Φd	0.5	0.5	0.5	0.6	0.6	0.8	0.8	1.0
a	(L < 20) 1.5		(L ≥ 20) 2.0					

### ■ Multiplier for Ripple Current

(1) Frequency Coefficient (频率系数)

Cap(μf)	120	1k	10k	100k
1~5.6	0.20	0.40	0.90	1.00
6.8~180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700~12000	0.85	0.95	0.98	1.00

(2) Temperature Coefficient(温度系数)

Temperature (°C)	-40	60	70	85	105
Factor	2.33	2.17	2.00	1.75	1.00



# ALUMINUM ELECTROLYTIC CAPACITORS

**SLE** Low Impedance and high frequency ( +105℃ 高频低阻抗)  
Series

■ DIMENSIONS Rated Capacitors, Voltage( Surge),Case Size,Imp,Ripple Current .容量、电压(浪涌电压)、尺寸、阻抗、纹波电流.

Capacitance (μF)	Rated (Surge) Voltage (V)											
	6.3 (8)			10 (13)			16 (20)			25 (32)		
	Size	Imp	Ripple	Size	Imp	Ripple	Size	Imp	Ripple	Size	Imp	Ripple
10							5x11	3.200	77	5x11	2.900	82
22							5x11	2.200	94	5x11	2.100	96
33							5x11	1.150	129	5x11	1.000	132
47							5x11	0.693	167	5x11	0.490	198
68							5x11	0.550	187			
100	5x11	0.720	164	5x11	0.462	205	5x11	0.420	214	6.3x12	0.260	320
							6.3x12	0.350	278			
150	5x11	0.504	195				8x12	0.150	484	8x12	0.178	446
220	6.3x12	0.300	299	6.3x12	0.242	334	6.3x12	0.140	434	6.3x12	0.130	410
							8x12	0.130	526	8x12	0.120	542
330	6.3x12	0.264	319	6.3x12	0.161	409	8x12	0.115	554	8x12	0.092	618
										8x14	0.086	684
470	6.3x12	0.230	342	6.3x12	0.140	438	8x12	0.096	605	8x12	0.084	690
	8x12	0.170	458	8x12	0.130	582	8x14	0.089	672	8x14	0.078	718
							8x16	0.085	765	10x13	0.070	847
680	6.3x12	0.158	412	6.3x12	0.097	602	8x14	0.075	732	10x16	0.055	1028
	8x12	0.138	505	8x12	0.089	738	10x13	0.072	859	10x20	0.053	1154
820	8x16	0.100	674	8x12	0.074	690	10x16	0.057	1009	10x20	0.050	1189
1000	8x12	0.095	630	8x12	0.064	742	8x16	0.054	916	10x16	0.046	1124
	8x14	0.087	680	8x16	0.057	891	10x13	0.054	950	10x20	0.044	1267
	10x13	0.075	806	10x13	0.057	924	10x16	0.052	1057			
1200	10x20	0.069	918	10x16	0.048	1100	10x20	0.044	1267	13x20	0.038	1580
1500	10x20	0.050	1189	8x16	0.045	1001	10x20	0.039	1488	10x25	0.034	1594
	10x25	0.048	1401	10x16	0.043	1163				13x25	0.032	1898
2200	10x25	0.039	1488	10x20	0.036	1401	10x20	0.034	1624	13x25	0.030	1961
	13x20	0.039	1560	10x25	0.034	1594	13x20	0.032	1899			
3300	13x25	0.034	1842	13x20	0.032	1723	10x30	0.030	1845			
				10x30	0.030	1845	13x25	0.030	1961	16x30	0.026	2612
				13x25	0.028	2030	16x25	0.027	2332	18x35	0.024	3050
4700	16x26	0.030	2204	16x25	0.026	2368	16x30	0.024	2668	18x35	0.021	3261
6800	16x30	0.028	2470	16x30	0.024	2668	16x40	0.021	3245	18x35	0.019	3428
10000	16x35	0.026	2746	18x35	0.022	3186	18x40	0.020	3547			
12000	18x35	0.024	3051	18x40	0.019	3639						

☆ Size : ΦDx L (mm) ☆ Ripple Current : (mA/rms), 105℃,100KHz ☆ Impedance (Ω),20℃,100KHz



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Capacitance ( $\mu$ F)	Rated (Surge) Voltage (V)											
	35 (44)			50 (63)			63 (79)			100 (125)		
	Size	Imp	Ripple	Size	Imp	Ripple	Size	Imp	Ripple	Size	Imp	Ripple
1				5x11	3.5	73				5x11	3.5	73
2.2				5x11	2.9	82				5x11	2.9	82
3.3				5x11	2.7	85				5x11	2.7	85
4.7				5x11	2.3	92				5x11	2.0	98
6.8				5x11	2.1	97				5x11	1.8	104
10	5x11	1.100	132	5x11	1.9	101				6.3x12	1.700	126
15	5x11	0.760	159							6.3x12	1.600	130
22	5x11	0.483	199	5x11	1.100	130	6.3x12	1.200	150	8x12	1.300	165
33	5x11	0.449	208	6.3x12	0.630	207	6.3x12	1.030	163	8x16	0.520	300
47	6.3x12	0.402	259	6.3x12	0.510	228	8x12	0.800	210	8x16	0.480	312
56	6.3x12	0.300	298	8x12	0.400	300	8x12	0.580	248			
68	6.3x12	0.255	324	8x12	0.360	312	8x12	0.530	260	8x16	0.240	434
82	8x12	0.195	426	8x12	0.287	350	10x13	0.360	370			
100	6.3x12	0.184	382	8x12	0.253	376	8x16	0.330	384	10x16	0.170	585
	8x12	0.160	469	10x13	0.200	493	10x13	0.330	384	10x20	0.160	665
120	8x12	0.150	484	8x16	0.140	570	10x16	0.300	440			
150	8x12	0.139	503									
220	8x12	0.098	599	8x14	0.115	592	10x16	0.200	540	13x25	0.098	1096
	8x14	0.089	672	10x13	0.102	689	10x20	0.180	628	13x30	0.092	1214
				10x16	0.095	782				16x25	0.090	1275
330	8x16	0.081	747	10x13	0.089	740	10x25	0.115	868	13x35	0.064	1562
	10x13	0.078	790	10x16	0.081	847	13x20	0.100	975	16x30	0.056	1748
	10x16	0.065	946	10x20	0.079	946						
470	10x13	0.059	908	10x20	0.065	1043	13x20	0.082	1076			
	10x16	0.054	1038	10x25	0.062	1180	13x25	0.074	1248	18x35	0.045	2228
680	10x20	0.044	1267	13x20	0.056	1302	16x25	0.061	1546			
	10x25	0.042	1313	13x25	0.054	1462						
820	13x25	0.039	1720	13x30	0.048	1682						
1000	13x20	0.036	1779	16x25	0.042	1863	16x25	0.051	1690			
	13x25	0.034	1842				16x30	0.048	1887			
1200	13x25	0.032	1899	16x30	0.032	2310						
	16x25	0.030	2204									
1500	16x25	0.028	2281	16x35	0.030	2556	18x35	0.038	2425			
2200	18x25	0.025	2583	16x40	0.028	2810						
	16x30	0.025	2615	18x35	0.028	2824						
3300	18x35	0.021	3261	18x35	0.025	2989						
4700				18x45	0.023	3490						

☆ Size :  $\Phi$ Dx L (mm) ☆ Ripple Current : (mA/rms), 105°C,100KHz ☆ Impedance ( $\Omega$ ),20°C,100KHz