SLD SERIES

特点 Features

- 耐高纹波，耐高温，特长寿命，105℃ 6000小时~8000小时。
  High Ripple Current High Temperature , extremely Long Life,
  Life time 105℃ 6000hours~8000hours.
- 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℃
额定电压范围 Rated Voltage Range	16~100V / 160~450V
标称电容量范围 Nominal Capacitance Range	0.47~10000μF
标称电容量允许偏差 Capacitance Tolerance	±20%（120Hz, +20°C）
漏电流 Leakage Current（+20℃）	I ≤ 0.01CV 或 3(μA) 2分钟 取较大者 (at 20℃, after 2 minutes)（whichever is greater) / I ≤0.02 CV+10μA (2分钟,20℃) 0.02CV+10μA (at 20℃ , after 2 minutes)
损耗角正切值（tgδ） Dissipation Factor (+20℃, 120Hz)	见下表
温度特性 Temperature Characteristics (Impedance ratio at 120Hz)	见下表
耐久性 Load Life	见下表
高温贮存 Shelf Life	+105℃ 1000小时贮存后，恢复16小时后 After storage for 1000 hours at +105℃ and then resumed for 16 hours: 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

U_R (V)	16	25	35	50	63	100
tgδ	0.16	0.14	0.12	0.10	0.09	0.09
U_R (V)	160	200	250	350	400	450
tgδ	0.15	0.15	0.15	0.20	0.20	0.20

容量大于1000μF者，每增加1000μF，其损耗角正切值增加0.02。
When nominal capacitance exceeds 1000μF,add 0.02 to the value above for each 1000μF increase.

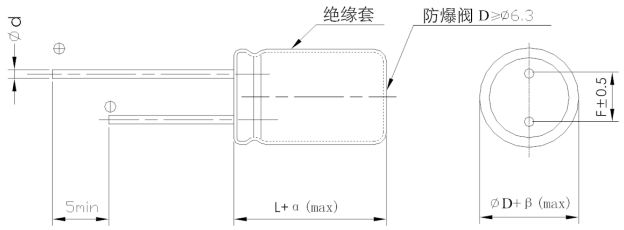
U_R (V)	16	25	35	50	63	100	160	200	250	350	400	450
Z-40℃ / Z+20℃	8	6	6	6	4	4	6	6	6	7	7	9

在+105℃ 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℃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℃ for 16 hours after D.C. bias rated ripple current is applied at +105℃, the peak voltage shall not exceed the voltage.

Time :			
	16WV~100WV	φ5~φ6.3	6000hours
		φ≥8	8000hours
	160WV~450WV	8000hours	

Capacitance change : ±20%初始测量值以内 ±20% of the initial measured value
Leakage current : ≤初始规定值 ≤Initial specified value
Dissipation factor : ≤2倍初始规定值 ≤2 times of the initial specified value

外形图及尺寸表 Case Size Table



单位 Unit: mm

D	5	6.3	8	10	12.5	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
d	0.5	0.5	0.5、0.6	0.6	0.6	0.8	0.8

αMAX	‹ L < 20 › 1.5
	‹ L≥20 › 2.0

βMAX	0.5

https://surgecomponents.com

Surge Components Inc. (USA)
sales@surgecomponents.com
+1 (631) 595-1818

Surge Components EMEA (Europe)
emea@surgecomponents.com
+44-204-593 0098

Surge Components.Ltd. (Asia)
surgehk@surgecomponents.com.hk
+852-2172-7607

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

CAP(μF) \ WV		16V(1C)			25V(1E)			35V(1V)			50V(1H)		
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
10	100	5×11	0.97	141	5×11	0.97	141	5×11	1.40	117	5×11	1.35	115
15	150	5×11	0.97	150	5×11	0.97	150	5×11	0.97	141	5×11	1.05	120
22	220	5×11	0.45	228	5×11	0.67	228	5×11	0.97	150	5×11	0.55	205
33	330	5×11	0.37	238	5×11	0.37	238	5×11	0.37	228	6.3×11	0.37	320
39	390	5×11	0.37	245	5×11	0.37	245	5×11	0.37	238	6.3×11	0.29	340
47	470	5×11	0.24	252	5×11	0.24	283	5×11	0.37	245	6.3×11	0.24	380
56	560	5×11	0.24	261	5×11	0.24	295	6.3×11	0.24	545	6.3×11	0.24	390
68	680	5×11	0.24	273	5×11	0.24	305	6.3×11	0.24	555	8×11.5	0.15	640
100	101	5×11	0.24	285	6.3×11	0.10	545	6.3×11	0.10	565	8×11.5	0.15	720
120	121	5×11	0.24	296	6.3×11	0.10	560	8×11.5	0.090	950	8×16	0.085	840
150	151	6.3×11	0.10	545	6.3×11	0.10	575	8×11.5	0.090	965	8×16	0.067	955
180	181	6.3×11	0.10	555	8×11.5	0.090	950	8×11.5	0.090	975	8×20	0.062	1050
220	221	6.3×11	0.10	565	8×11.5	0.090	965	8×11.5	0.090	1050	8×20	0.062	1200
270	271	8×11.5	0.090	950	8×11.5	0.090	975	8×16	0.050	1260	10×20	0.062	1430
								10×12.5	0.050	1260	12.5×15	0.062	1360
330	331	8×11.5	0.090	965	8×11.5	0.090	995	10×12.5	0.050	1300	10×20	0.042	1460
390	391	8×11.5	0.090	975	8×16	0.050	1260	8×20	0.048	1510	10×25	0.034	1650
					10×12.5	0.050	1340	10×16	0.048	1570	12.5×20	0.036	1680
470	471	8×11.5	0.062	995	10×12.5	0.050	1390	10×16	0.045	1730	12.5×20	0.032	1820
560	561	8×16	0.050	1260	8×20	0.050	1510	10×20	0.042	1970	12.5×20	0.030	2060
		10×12.5	0.043	1340	10×16	0.031	1770	12.5×15	0.042	2130			
680	681	8×16	0.050	1295	10×16	0.031	1795	10×25	0.026	2260	12.5×25	0.025	2420
		10×12.5	0.043	1395				12.5×20	0.024	2490			
820	821	8×20	0.032	1510	10×20	0.022	1970	12.5×20	0.024	2510	12.5×30	0.023	2870
		10×16	0.031	1770	12.5×15	0.021	2130				16×20	0.025	2740
1000	102	8×20	0.032	1550	10×25	0.020	2260	12.5×20	0.024	2550	12.5×35	0.021	2950
		10×16	0.031	1795	12.5×20	0.019	2490				16×25	0.023	3020
1200	122	10×20	0.022	1970	12.5×20	0.019	2510	12.5×25	0.022	2705	16×30	0.020	3250
		12.5×15	0.021	2130							18×25	0.023	2840
1500	152	10×20	0.022	2020	12.5×20	0.019	2550	12.5×30	0.020	2860	16×30	0.019	3120
		12.5×15	0.021	2165				16×20	0.020	2790	18×25	0.020	3150
1800	182	10×25	0.020	2260	12.5×25	0.017	2910	12.5×35	0.018	3180	16×35	0.016	3450
		12.5×20	0.019	2490				16×25	0.018	3240	18×30	0.018	3650
2200	222	12.5×20	0.019	2520	12.5×30	0.014	3460	16×25	0.018	3340	18×35	0.016	3720
					16×20	0.017	3260						
2700	272	12.5×25	0.017	2910	12.5×35	0.013	3580	16×35	0.011	3720	18×40	0.014	3850
					16×25	0.014	3640	18×30	0.011	3720			
3300	332	12.5×25	0.017	2950	12.5×40	0.012	3900	16×40	0.010	4090			
					16×25	0.014	3690	18×35	0.010	4090			
3900	392	12.5×30	0.014	3460	16×30	0.012	3900	18×40	0.010	4150			
		16×20	0.017	3260	18×25	0.013	3750						
4700	472	12.5×35	0.013	3580	16×40	0.010	4090						
		16×25	0.014	3640	18×30	0.011	4020						
5600	562	16×30	0.012	3900	18×35	0.010	4090						
		18×25	0.013	3660									
6800	682	16×30	0.012	3950									
		18×25	0.013	3695									
8200	822	16×35	0.011	4020									
		18×30	0.011	4020									
10000	103	18×35	0.010	4090									

Size φD×L(mm)
Maximum Allowable Ripple Current (mA rms) at 105℃ 100KHz
Maximum ESR (Ω) at 20℃ 100KHz

Surge Components Inc. (USA)
sales@surgecomponents.com
+1 (631) 595-1818

Surge Components EMEA (Europe)
emea@surgecomponents.com
+44-204-593 0098

Surge Components.Ltd. (Asia)
surgehk@surgecomponents.com.hk
+852-2172-7607

尺寸 Dimensions

CAP(μF) \ WV		63V(1J)			100V(2A)			160V(2C)			200V(2D)		
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
0.47	R47	5×11	1.40	60	5×11	1.50	60						
1.0	010	5×11	1.40	62	5×11	1.50	62						
1.8	1R8	5×11	1.40	65	5×11	1.50	65	6.3×11	15.0	60			
2.2	2R2	5×11	1.20	68	5×11	1.50	70	6.3×11	15.0	64	6.3×11	14.9	65
2.7	2R7	5×11	1.20	70	5×11	1.50	73	6.3×11	15.0	70	6.3×11	14.9	70
3.3	3R3	5×11	1.20	74	5×11	1.50	78	6.3×11	15.0	75	6.3×11	14.9	75
3.9	3R9	5×11	1.20	76	5×11	1.50	84	6.3×11	15.0	78	6.3×11	14.9	80
4.7	4R7	5×11	1.20	78	5×11	1.50	88	6.3×11	15.0	80	6.3×11	14.9	85
5.6	5R6	5×11	1.00	84	5×11	1.00	92	6.3×11	15.0	85	8×11.5	8.02	95
6.8	6R8	5×11	1.00	88	5×11	1.00	95	6.3×11	15.0	90	8×11.5	8.02	135
8.2	8R2	5×11	1.00	92	5×11	1.00	100	8×11.5	12.5	100	8×11.5	8.02	150
10	100	5×11	0.85	115	6.3×11	0.85	220	8×11.5	9.15	140	8×11.5	5.30	190
12	120	5×11	0.85	120	6.3×11	0.85	240	8×11.5	9.15	150	8×16	5.30	200
15	150	5×11	0.75	130	6.3×11	0.75	245	8×16	9.15	230	8×20	3.85	220
18	180	5×11	0.75	145	6.3×11	0.70	255	8×16	7.90	230	8×20	3.58	280
											10×16	3.58	280
22	220	6.3×11	0.65	283	8×11.5	0.55	360	8×16	7.90	270	10×16	2.90	365
								10×12.5	7.90	270			
27	270	6.3×11	0.39	290	8×11.5	0.40	375	8×20	5.90	330	10×20	2.13	405
								10×16	5.90	330			
33	330	6.3×11	0.39	295	8×11.5	0.40	385	10×16	2.36	390	10×25	1.78	470
											12.5×20	1.78	470
39	390	6.3×11	0.39	305	8×16	0.28	420	10×20	1.97	430	12.5×20	1.78	490
					10×12.5	0.25	445	12.5×15	1.97	430			
47	470	6.3×11	0.28	315	8×16	0.24	430	10×20	1.97	445	12.5×20	1.46	600
					10×12.5	0.25	460	12.5×15	1.97	445	8×50	1.46	600
56	560	8×11.5	0.24	405	10×12.5	0.25	475	10×25	1.97	480	12.5×25	1.46	625
								12.5×20	1.56	540			
68	680	8×11.5	0.24	415	8×20	0.19	650	12.5×20	1.56	560	16×20	1.35	690
					10×16	0.19	645						
82	820	8×11.5	0.24	425	10×16	0.19	655	12.5×20	1.56	580	12.5×30	1.25	770
								8×50	1.56	625	10×50	1.35	770
100	101	8×16	0.18	530	10×20	0.13	720	12.5×25	1.18	700	16×25	1.25	820
		10×12.5	0.17	540	12.5×15	0.14	705						
120	121	8×16	0.18	560	10×25	0.12	920	12.5×30	1.18	770	16×30	1.12	930
		10×12.5	0.17	580	12.5×20	0.093	940						
150	151	8×20	0.13	620	12.5×20	0.093	955	12.5×35	1.18	820	16×35	1.12	1010
		10×16	0.19	640				10×50	0.94	820	12.5×50	1.12	1040
180	181	10×16	0.19	655	12.5×25	0.066	1250	16×30	0.94	900	18×30	0.95	1050
220	221	10×20	0.086	920	12.5×25	0.066	1280	16×30	0.94	1050	18×35	0.85	1230
		12.5×15	0.090	905				12.5×50	0.94	1050			
270	271	10×20	0.086	1020	12.5×30	0.056	1360	16×35	0.76	1210			
		12.5×15	0.090	985	16×20	0.064	1345						
330	331	10×25	0.076	1165	12.5×35	0.047	1460	18×35	0.50	1320			
		12.5×20	0.066	1180	16×25	0.048	1520						
390	391	12.5×20	0.066	1210	12.5×40	0.040	1680	18×40	0.45	1520			
					16×25	0.048	1580						
470	471	12.5×25	0.047	1620	16×30	0.036	1980						
					18×25	0.042	2150						
560	561	12.5×30	0.038	1820	16×35	0.032	2250						
		16×20	0.047	1850	18×30	0.034	2260						
680	681	12.5×35	0.036	2050	16×40	0.030	2300						
		16×25	0.035	2100	18×35	0.030	2450						
820	821	12.5×40	0.030	2430	18×40	0.029	2730						
		16×25	0.035	2480									
1000	102	16×30	0.026	2640									
		18×25	0.034	2650									
1200	122	16×30	0.026	2690									
		18×25	0.034	2680									
1500	152	16×35	0.023	2920									
		18×30	0.028	2980									
1800	182	16×40	0.021	3250									
		18×35	0.022	3270									
2200	222	18×40	0.020	3430									

Size φD×L(mm)
Maximum Allowable Ripple Current (mA rms) at 105℃ 100KHz
Maximum ESR (Ω) at 20℃ 100KHz

Surge Components Inc. (USA)
sales@surgecomponents.com
+1 (631) 595-1818

Surge Components EMEA (Europe)
emea@surgecomponents.com
+44-204-593 0098

Surge Components.Ltd. (Asia)
surgehk@surgecomponents.com.hk
+852-2172-7607

尺寸 Dimensions

CAP(μF) \ WV		250V(2E)			350V(2V)			400V(2G)			450V(2W)		
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
1.0	010				6.3×11	29.0	45	6.3×11	33.0	60	6.3×11	28.56	65
1.2	1R2				6.3×11	29.0	50	6.3×11	33.0	65	6.3×11	28.56	70
1.5	1R5				6.3×11	29.0	55	6.3×11	33.0	70	6.3×11	28.56	75
1.8	1R8				6.3×11	20.0	60	6.3×11	33.0	75	6.3×11	22.25	75
2.2	2R2	6.3×11	30.0	75	6.3×11	20.0	75	6.3×11	33.0	80	8×11.5	16.25	80
2.7	2R7	6.3×11	30.0	80	8×11.5	18.0	80	8×11.5	33.0	90	8×11.5	16.25	85
3.3	3R3	6.3×11	30.0	85	8×11.5	16.850	85	8×11.5	10.5	95	8×11.5	16.25	90
3.9	3R9	8×11.5	14.9	90	8×11.5	16.850	90	8×11.5	10.5	100	8×11.5	16.25	95
4.7	4R7	8×11.5	14.9	105	8×11.5	16.850	90	8×11.5	10.5	105	8×16	11.25	110
								8×16	10.5	105	10×12.5	11.25	115
5.6	5R6	8×11.5	10.9	110	8×16	11.250	110	8×16	10.5	130	8×20	8.05	130
								10×12.5	9.50	130	10×16	8.05	130
6.8	6R8	8×11.5	8.02	120	8×16	11.250	130	8×20	9.50	160	8×20	8.05	170
								10×16	9.50	160	10×16	8.05	170
8.2	8R2	8×16	8.02	125	8×20	10.30	150	10×16	5.40	230	10×16	8.05	225
					10×16	10.30	150						
10	100	8×16	8.02	220	10×16	8.05	220	10×16	4.50	240	10×20	6.70	245
											12.5×15	6.70	245
15	150	10×16	3.85	370	10×20	6.50	295	10×25	4.30	300	12.5×20	6.70	340
								12.5×20	4.30	300			
18	180	10×20	3.58	420	10×25	6.50	330	12.5×20	4.30	350	12.5×20	2.45	370
					12.5×20	6.50	385				8×50	2.25	370
22	220	10×20	2.35	450	12.5×20	6.50	410	12.5×20	4.14	380	12.5×25	2.25	450
		8×50	2.35	450				8×50	4.14	410			
33	330	12.5×20	2.35	530	12.5×25	6.50	440	12.5×30	4.14	540	16×25	2.05	530
								10×50	4.14	540	10×50	2.05	550
47	470	12.5×25	1.20	630	16×25	2.25	540	16×25	4.14	630	16×30	1.60	670
					10×50	2.25	590						
56	560	12.5×30	1.20	670	16×25	2.25	610	16×30	2.05	680	16×35	1.36	730
											12.5×50	1.36	730
68	680	16×25	0.68	720	16×30	2.05	730	18×25	1.60	760	18×30	1.09	790
		10×50	0.68	720				12.5×50	1.60	760			
82	820	16×30	0.68	755	16×35	1.60	800	18×30	1.60	910	18×35	1.09	830
100	101	16×30	0.68	850	18×30	1.60	900	18×35	1.60	1120	18×40	0.85	970
		12.5×50	0.68	850									
120	121	16×35	0.68	860	18×35	1.60	990	18×40	1.50	1350			
150	151	18×30	0.56	990	18×40	1.50	1100						
180	181	18×35	0.56	1060									
220	221	18×40	0.42	1180									

Size φD×L(mm)
Maximum Allowable Ripple Current (mA rms) at 105℃ 100KHz
Maximum ESR (Ω) at 20℃ 100KHz

Surge Components Inc. (USA)
sales@surgecomponents.com
+1 (631) 595-1818

Surge Components EMEA (Europe)
emea@surgecomponents.com
+44-204-593 0098

Surge Components.Ltd. (Asia)
surgehk@surgecomponents.com.hk
+852-2172-7607

Product symbol system for Aluminum Electrolytic Capacitors

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
① Series			② Voltage		③ Capacitance			④ Tolerance	⑤ Size code				⑥ Terminal Code			⑦ Brand	⑧ Sleeve	⑨ Other	⑩ Supplement Code	

① Series

Series is represented by a two-letter code. For example "SGR".

② Voltage

Voltage in volts(V) is represented by a one-digit and one-letter code.
Example:

Voltage(V)	2.5	4	6.3	10	16	25	35	50	63	80	100
Code	0E	0G	0J	1A	1C	1E	1V	1H	1J	1K	2A

Voltage(V)	160	200	250	315	350	400	420	450	500	550
Code	2C	2D	2E	2F	2V	2G	2M	2W	2H	2L

③ Capacitance

Capacitance in μF is represented by a three-digit code.the first two digis are significant and the third digit indicates the number of zeros following the significant figure "R" represents the decimal point for capacitance under 10μF.
Example:

Capacitance(μF)	0.1	0.47	1	4.7	10	47	100	470	1000	4700	10000
Code	0R1	R47	010	4R7	100	470	101	471	102	472	103

④ Tolerance

Tolerance is represented by a one-letter code.
Example:

Tolerance(%)	-5~+5	-10~+10	-15~+15	-20~+20	-0~+20	-5~+20	-10~+20	-0~+30	+10~+30	-10~+30	-15~+20
Code	J	K	Y	M	R	H	V	F	G	Q	E

⑤ Size code

Size code is represented by a one-letter and three-digit code. The first one-letter indicate case diameter in mm .The last three digits indicate case length in mm, When the height of a product exceeds 100mm, if the last digit is 0,it is represented by A, otherwise, it is represented by B .
Example:

ΦD	4	5	6.3	8	10	12	12.5	13	16	18	20	22	25	30	35	40	50	63.5	89
Code	B	C	E	F	G	H	I	J	L	M	O	P	Q	R	S	T	U	W	Y

L	5	5.4	9	10	11	11.5	12	14	16	20	25	50	100	105	110	115	120	200	205
Code	050	054	090	100	110	115	120	140	160	200	250	500	10A	10B	11A	11B	12A	20A	20B

Note:When a case size is required and not shown in the table ,please contact with us for further discussion.

⑥ Terminal Code

Terminal Code is represented by a combination of letters or numbers
SMD Type terminal code (please refer to page11)
Radial type terminal code (please refer to page 12~15)
Snap-in Type and ScrewType terminal code(please refer to page 16~17)
Note:When a terminal code is required and not shown in the table ,please contact with us for further discussion.

⑦ Brand

The Surge trademark is represented by the letter "S".

⑧ Sleeve

The sleeve material is represented by the letter E for PET and V for PVC.

⑨ Other

It is represented by a letter or number for rubber shape or other information.

⑩ Supplement Code

For special control purposes.

For example: SGR 16V 2200μF 20% 12.5×25 taping F=5.0 Brand: Surge PVC Sleeve

S	G	R	1	C	2	2	2	M	I	2	5	0	B	5	0	S	V	0

https://surgecomponents.com

Surge Components Inc. (USA)
sales@surgecomponents.com
+1 (631) 595-1818

Surge Components EMEA (Europe)
emea@surgecomponents.com
+44-204-593 0098

Surge Components.Ltd. (Asia)
surgehk@surgecomponents.com.hk
+852-2172-7607