

特点 Features

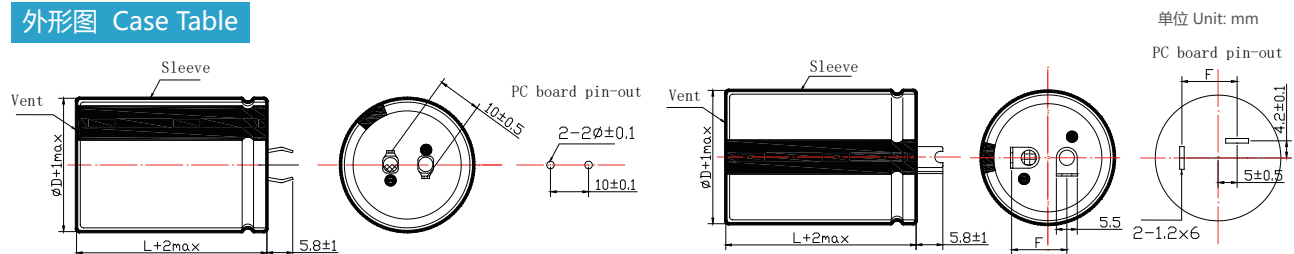
- 耐高纹波,小尺寸,85°C 5000小时。
High ripple current ,Smaller size ,Load life of 5000 hours at 85°C.
- 适用于开关电源,变频器。
Best for switching power supplies, Inverter.
- RoHS指令已对应完毕。
Adapted to the RoHS directive.



主要技术性能 Specifications

项目 Items	特性 Characteristics																						
使用温度范围 Operating Temperature Range	-40~+85°C	-25~+85°C																					
额定电压范围 Rated Voltage Range	10~100 V	160~450V																					
标称容量允许偏差 Capacitance Tolerance	±20% (+20°C, 120Hz)																						
漏电流 Leakage Current	I ≤0.01CV(µA)或1.5mA 取较小值 (Whichever is smaller) 5分钟 (at 20°C, after 5 minutes)																						
损耗角正切值(tgδ) Dissipation Factor (+20°C, 120Hz)	<table border="1"> <tr> <td>U_R (V)</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63~100</td> <td>160~250</td> <td>315~450</td> </tr> <tr> <td>tgδ</td> <td>0.80</td> <td>0.60</td> <td>0.50</td> <td>0.40</td> <td>0.30</td> <td>0.20</td> <td>0.15</td> <td>0.20</td> </tr> </table>		U _R (V)	10	16	25	35	50	63~100	160~250	315~450	tgδ	0.80	0.60	0.50	0.40	0.30	0.20	0.15	0.20			
U _R (V)	10	16	25	35	50	63~100	160~250	315~450															
tgδ	0.80	0.60	0.50	0.40	0.30	0.20	0.15	0.20															
温度特性 Temperature Characteristics (Impedance ratio at 120Hz)	<table border="1"> <tr> <td>U_R (V)</td> <td>10</td> <td>16~35</td> <td>50~100</td> <td>160~250</td> <td>350~400</td> <td>450</td> </tr> <tr> <td>Z-25°C / Z+20°C</td> <td>5</td> <td>4</td> <td>3</td> <td>4</td> <td>8</td> <td>8</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>18</td> <td>15</td> <td>10</td> <td></td> <td></td> <td></td> </tr> </table>		U _R (V)	10	16~35	50~100	160~250	350~400	450	Z-25°C / Z+20°C	5	4	3	4	8	8	Z-40°C / Z+20°C	18	15	10			
U _R (V)	10	16~35	50~100	160~250	350~400	450																	
Z-25°C / Z+20°C	5	4	3	4	8	8																	
Z-40°C / Z+20°C	18	15	10																				
耐久性 Load Life	+85°C施加带额定纹波电流的额定电压5000小时, 恢复16小时后: After applying rated voltage with specified ripple current for 5000 hours at +85°C and then resumed for 16 hours: 电容变化率 Capacitance change : ±20%初始测量值以内 ±20% of the initial measured value 漏电流 Leakage current : ≤初始规定值 ≤Initial specified value 损耗角正切值 Dissipation factor : ≤2倍初始规定值 ≤2times initial specified value																						
高温贮存 Shelf Life	+85°C, 1000小时贮存后, 加额定工作电压处理30分钟, 恢复16小时后: After storage for 1000 hours at +85°C, U _R to be applied for 30 minutes and then resumed for 16 hours: 电容变化率 Capacitance change : ±20%初始测量值以内 ±20% of the initial measured value 漏电流 Leakage current : ≤初始规定值 ≤Initial specified value 损耗角正切值 Dissipation factor : ≤2倍初始规定值 ≤2 times of the initial specified value																						

外形图 Case Table



频率修正系数 Frequency Coefficient

U(V) \ Freq.(Hz)	50	120	1K	10K	≥50K
10~100	0.90	1.00	1.15	1.25	1.35
160~450	0.80	1.00	1.30	1.41	1.43

尺寸 Dimensions

CAP(μF)		WV		10V(1A)								16V(1C)							
				Φ22		Φ25		Φ30		Φ22		Φ25		Φ30		Φ35			
		Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple		
8200	822									22×25	2.20								
10000	103	22×25	2.50							22×30	2.60	25×25	2.60						
12000	123	22×25	2.90							22×35	2.90	25×25	2.80						
15000	153	22×30	3.20	25×25	3.10					22×40	3.30	25×30	3.30	30×25	3.40				
18000	183	22×35	3.60	25×30	3.60					22×45	3.80	25×35	3.70	30×30	3.60				
22000	223	22×40	4.00	25×35	4.10	30×25	4.10			22×50	4.20	25×40	4.20	30×30	4.20	35×25	4.40		

CAP(μF)		WV		25(1E)								35(1V)							
				Φ22		Φ25		Φ30		Φ35		Φ22		Φ25		Φ30		Φ35	
		Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
3300	332											22×25	1.8						
3900	392											22×30	2.1						
4700	472											22×30	2.2	25×25	2.20				
5600	562	22×25	2.00									22×35	2.3	25×30	2.30				
6800	682	22×30	2.30	25×25	2.30							22×40	2.9	25×35	2.60				
8200	822	22×35	2.60	25×30	2.50							22×50	3.0	25×40	2.80	30×30	2.80	35×25	2.90
10000	103	22×40	2.90	25×30	2.80	30×25	3.00						25×45	3.10	30×35	3.20	35×30	3.20	
12000	123	22×45	3.30	25×35	3.20	30×30	3.40						25×50	3.50	30×40	3.50	35×30	3.60	
15000	153			25×40	3.70	30×35	3.60	35×25	3.90						30×45	4.10	35×35	4.10	
18000	183					30×35	4.30	35×30	4.40						30×50	4.60	35×40	4.70	
22000	223					30×40	4.80	35×35	5.00							35×50	5.30		

CAP(μF)		WV		50(1H)								63(1J)							
				Φ22		Φ25		Φ30		Φ35		Φ22		Φ25		Φ30		Φ35	
		Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
2200	222	22×25	1.70									22×30	2.00	25×25	2.00				
2700	272	22×30	1.90	25×25	1.90							22×35	2.20	25×30	2.30				
3300	332	22×30	2.00	25×25	1.90							22×40	2.30	25×35	2.30	30×25	2.3		
3900	392	22×35	2.10	25×30	2.10	30×25	2.40					22×45	2.50	25×40	2.60	30×30	2.6	35×25	2.7
4700	472	22×40	2.40	25×35	2.40	30×30	2.30						25×40	2.80	30×35	2.7	35×25	2.6	
5600	562	22×50	2.50	25×40	2.50	30×30	2.50	35×25	2.60				25×45	3.10	30×35	3.2	35×30	3.3	
6800	682			25×45	2.80	30×35	2.80	35×25	2.70					30×40	3.6	35×35	3.7		
8200	822			25×50	3.20	30×40	3.00	35×30	3.00					30×50	3.7	35×40	3.8		
10000	103					30×45	3.40	35×35	3.40							35×45	4.3		
12000	123					30×50	3.80	35×40	3.80							35×50	4.8		
15000	153							35×50	4.50										

CAP(μF)		WV		80(1K)								100(2A)							
				Φ22		Φ25		Φ30		Φ35		Φ22		Φ25		Φ30		Φ35	
		Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
680	681											22×25	1.10						
820	821											22×30	1.20						
1000	102	22×25	1.30									22×30	1.40	25×25	1.40				
1200	122	22×30	1.50									22×35	1.60	25×30	1.60				
1500	152	22×30	1.80	25×25	1.70							22×40	1.80	25×35	1.70	30×25	1.80		
1800	182	22×35	1.90	25×30	1.90							22×50	2.10	25×40	2.00	30×30	2.10	35×25	2.20
2200	222	22×40	2.10	25×35	2.20	30×25	2.20						25×45	2.20	30×35	2.30	35×30	2.50	
2700	272	22×50	2.50	25×40	2.50	30×30	2.50	35×25	2.50				25×50	2.60	30×40	2.70	35×30	2.60	
3300	332			25×45	2.80	30×35	2.80	35×25	2.70						30×45	3.00	35×35	3.10	
3900	392			25×50	3.10	30×40	3.20	35×30	3.20						30×50	3.40	35×40	3.40	
5600	562					30×50	3.50	35×40	3.50										
6800	682							35×50	4.10										

Size φD×L(mm)
Maximum Allowable Ripple Current (A rms) at 85°C 120Hz

尺寸 Dimensions

WV		160V(2C)								200V(2D)									
		Size		Φ22		Φ25		Φ30		Φ35		Φ22		Φ25		Φ30		Φ35	
		CAP(μF)	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	
220	221	22×25	1.10							22×25	1.10								
330	331	22×30	1.30							22×30	1.40	25×25	1.50						
390	391	22×30	1.50	25×25	1.50					22×35	1.60	25×30	1.60						
470	471	22×35	1.80	25×30	1.81					22×40	1.80	25×30	1.90						
560	561	22×35	1.90	25×30	1.90	30×25	2.00			22×45	2.00	25×35	2.00	30×30	2.10	35×25	2.00		
680	681	22×40	2.40	25×35	2.40	30×30	2.50					25×40	2.50	30×30	2.50	35×25	2.55		
820	821	22×50	2.85	25×40	2.75	30×30	2.75	35×25	2.75			25×40	2.80	30×35	2.80	35×30	2.80		
1000	102			25×45	3.10	30×35	3.10	35×30	3.10					30×40	3.30	35×35	3.50		
1200	122			25×50	3.50	30×40	3.60	35×35	3.50					30×50	3.65	35×40	3.65		
1500	152					30×45	4.20	35×40	4.40							35×45	4.60		
1800	182							35×45	5.00										
2200	222							35×50	5.80										

WV		250V(2E)								400V(2G)									
		Size		Φ22		Φ25		Φ30		Φ35		Φ22		Φ25		Φ30		Φ35	
		CAP(μF)	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	
68	680									22×25	0.61								
100	101									22×30	0.79	25×25	0.80						
120	121									22×35	0.92	25×30	0.92						
150	151	22×25	0.91							22×40	1.10	25×30	1.11	30×25	1.15				
180	181	22×25	0.94							22×45	1.20	25×35	1.20	30×25	1.20				
220	221	22×30	1.20	25×25	1.20					22×50	1.40	25×40	1.40	30×35	1.40				
270	271	22×35	1.35	25×30	1.35							25×45	1.60	30×35	1.60	35×30	1.60		
330	331	22×45	1.60	25×30	1.60	30×25	1.60							30×45	2.00	35×35	2.00		
390	391	22×45	1.75	25×35	1.75	30×30	1.75							30×50	2.20	35×40	2.20		
470	471	22×50	2.10	25×40	2.10	30×30	2.00	35×25	2.10							35×45	2.60		
560	561			25×45	2.35	30×35	2.35	35×30	2.35							35×50	2.90		
680	681					30×40	2.70	35×30	2.70										
820	851					30×45	3.00	35×35	3.00										
1000	102							35×40	3.60										
1200	122							35×45	3.91										

WV		450V(2W)																
		Size		Φ22		Φ25		Φ30		Φ35								
		CAP(μF)	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple								
47	470	22×25	0.51															
68	680	22×30	0.65															
100	101	22×35	0.88	25×30	0.86	30×25	0.90											
120	121	22×40	0.97	25×35	0.99	30×30	0.99											
150	151	22×40	1.09	25×40	1.10	30×30	1.10											
180	181			25×45	1.25	30×35	1.20											
220	221			25×50	1.50	30×40	1.50	35×30	1.50									
270	271					30×45	1.80	35×35	1.80									
330	331							35×40	2.10									
390	391							35×45	2.30									
470	471							35×50	2.70									

Size φD×L(mm)

Maximum Allowable Ripple Current (A rms) at 85°C 120Hz

Product symbol system for Aluminum Electrolytic Capacitors



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 $10\mu\text{F}$.

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 2200 μF 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
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