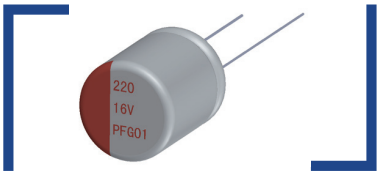
SPF Series

特点 Features

- 长寿命 。
  Long life.
- 可适于无铅焊。
  Lead free-fiow is supported.
- 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	
工作温度范围 Operating Temperature Range	-55~+105℃	
额定电压范围 Rated Voltage Range	2.5~25V	
标称电容量范围 Nominal Capacitance Range	220~2200μF	
标称电容量允许偏差 Nominal Capacitance Tolerance	±20%（20℃，120Hz）	
漏电流 Leakage Current	参照规格表 Reference parameter table 2分钟 at 20℃, after 2 minutes	
损耗角正切（tgδ） Dissipation Factor (Max)	20℃, 120Hz 直径 / tgδ	Φ6.3~Φ10 / 0.08
等效串联电阻 ESR	参照规格表 Reference parameter table (mΩ at 100k~300kHz 20℃ max)	
高低温特性比 Characteristics of impedance ratio at high temp. and low temp	要求在100KHZ 20℃ Based the value at 100KHZ. +20℃	-55℃ Z/Z20℃ 0.75 to 1.25 +105℃ Z/Z20℃ 0.75 to 1.25
耐久性 Load Life	+105℃施加额定电压5000小时后，待温度恢复到20℃后进行测试，电容器应满足以下要求： After 5000 hours' application of rated voltage at 105℃, and then being stabilized at +20℃, the capacitors shall meet the following requirement:	
	电容量变化率 Capacitance Change	±20%初始值以内 Within ±20% of the initial value (16V: within ±25% of the initial value)
	损耗角正切 Dissipation Factor	≤ 150%初始规定值 Not more than 150% of the initial specified value
	阻抗 Equivalent Series Resistance	≤ 150%初始规定值 Not more than 150% of the initial specified value
	漏电流 Leakage Current	≤ 初始规定值 Not more than the initial specified value
稳态湿热 Damp heat(Steady state)	60℃，90~95% RH, 不加电压1000小时 60℃ , 90~95% RH, 1000 hours, No-applied voltage.	
	电容量变化率 Capacitance Change	±20%初始值以内 Within ±20% of the initial value (16V: within ±25% of the initial value)
	损耗角正切 Dissipation Factor	≤ 150%初始规定值 Not more than 150% of the initial specified value
	阻抗 Equivalent Series Resistance	≤ 150%初始规定值 Not more than 150% of the initial specified value
	漏电流 Leakage Current	≤ 初始规定值 Not more than the initial specified value
耐焊接热 Resistance to Soldering Heat	（VPS）(260℃ X 10s)	
	电容量变化率 Capacitance Change	±10%初始值以内 Within ±10% of the initial value (16V以上: within ±15% of the initial value)
	损耗角正切 Dissipation Factor	≤ 初始规定值 Not more than the initial specified value
	阻抗 Equivalent Series Resistance	≤ 初始规定值 Not more than the initial specified value
	漏电流 Leakage Current	≤ 初始规定值 Not more than the initial specified value

※ 当产生疑问的时候，用以下电压处理后测定。
电压处理: 125℃下，连续加载120 分钟的电压。加载电压为额定电压。
When in doubt, apply the following voltage treatment and measure.
Voltage processing: under the condition of 125 ℃ ambient temperature, continuous load voltage of 120 minutes. Load voltage is rated voltage.

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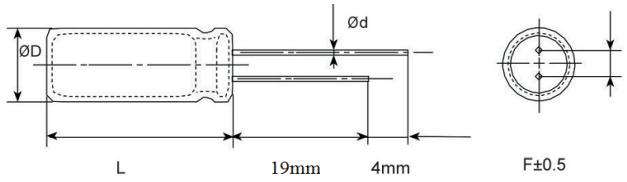
尺寸图 Dimensions



尺寸表 Size List

单位 Unit: mm

D(+0.5max)	6.3	8	10
F(±0.5)	2.5	3.5	5
d(±0.05)	0.6	0.6	0.6
L	+1max		

标称电容量、额定电压、额定纹波电流与尺寸对应表
Nominal Capacitance, Rated Voltage, Rated Ripple Current and Case Size Table

Rated Volt. (V)	Capacitance (uF)	Size ΦD×L(mm)	Tanδ (120HZ,20℃)	LC (μA)	ESR (mΩ/at 100k~300kHz 20℃ max)	Rated R. C. (mA/rms at 100kHz, 105℃)
2.5	470	6.3×8	0.08	235	7	5400
	560	6.3×8	0.08	280	7	5400
	560	8×8	0.08	280	7	6100
	820	6.3×8	0.08	410	7	5400
	820	8×8	0.08	410	7	6100
	1000	8×8	0.08	500	7	6100
	1000	8×11.5	0.08	500	7	6100
	1000	10×12	0.08	500	7	6100
	1200	8×8	0.08	600	7	6100
	1200	8×11.5	0.08	600	7	6100
	1200	10×12	0.08	600	7	6100
	1500	10×12	0.08	750	7	6100
	2200	10×12	0.08	1100	7	6100
4	470	6.3×8	0.08	376	7	5400
	470	8×8	0.08	376	7	6100
	560	6.3×8	0.08	448	7	5400
	560	8×8	0.08	448	7	6100
	820	8×8	0.08	656	7	6100
	1000	8×8	0.08	800	7	6100
	1200	8×12	0.08	960	7	6100
	1500	10×12	0.08	1200	7	6100
6.3	470	6.3×8	0.08	592	8	4700
	560	6.3×8	0.08	706	8	4700
	560	8×8	0.08	706	8	5700
	820	8×8	0.08	1033	8	5700
	820	8×11.5	0.08	1033	8	5700
	1000	8×11.5	0.08	1260	8	6100
	1500	10×12	0.08	1890	8	6100
10	330	8×8	0.08	660	10	4700
	390	8×11.5	0.08	780	10	5400
	470	8×11.5	0.08	940	10	5400
	560	10×12	0.08	1120	10	5400
	680	10×12	0.08	1360	10	5400
	1000	10×12	0.08	2000	10	5400

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Rated Volt. (V)	Capacitance (uF)	Size ΦD×L(mm)	Tanδ (120HZ,20℃)	LC (μA)	ESR (mΩ/at 100k~300kHz 20℃ max)	Rated R. C. (mA/rms at 100kHz, 105℃)
16	220	6.3×8	0.08	704	10	4700
	270	8×8	0.08	864	10	5100
	270	8×11.5	0.08	864	10	5100
	330	8×8	0.08	1056	10	5100
	330	8×11.5	0.08	1056	10	5100
	390	8×11.5	0.08	1248	10	5100
	470	8×11.5	0.08	1504	10	5100
	560	10×12	0.08	1792	10	5400
	680	10×12	0.08	2176	10	5400
20	220	8×8	0.08	880	25	3300
	270	8×11.5	0.08	1080	25	3900
	330	10×12	0.08	1320	25	3900
	470	10×12	0.08	1880	25	3900
25	100	8×11.5	0.08	500	25	3900
	220	10×12	0.08	1100	25	3900
	270	10×12	0.08	1350	25	3900

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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

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