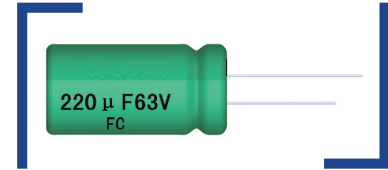


## 特点 Features

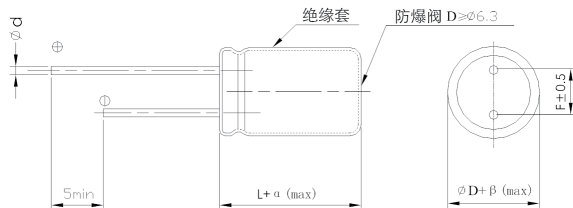
- 高频高可靠品, 105°C, 3000-5000小时。  
High frequency High reliability , 105°C , 3000-5000hours.
- 适应于无刷电机驱动及耐大电流冲击。  
Used Suitable for brushless motor drive and large current impact resistance .
- 符合RoHS标准。RoHS compliant.



## 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	50~120 V								
标称容量范围 Nominal Capacitance Range	220~1000μF								
标称容量允许偏差 Nominal Capacitance Tolerance	± 20% (120Hz, +20°C)								
漏电流 Leakage Current	$I \leq 0.01CV$ or $3(\mu A)$ 2分钟(at 20°C, after 2 minutes) 取较大者 (whichever is greater)								
损耗角正切值(tgδ) Dissipation Factor (+20°C, 120Hz)	<table border="1"> <tr> <td><math>U_R</math> (V)</td> <td>50</td> <td>63-120</td> </tr> <tr> <td>tgδ</td> <td>0.10</td> <td>0.08</td> </tr> </table> <p>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.</p>	$U_R$ (V)	50	63-120	tgδ	0.10	0.08		
$U_R$ (V)	50	63-120							
tgδ	0.10	0.08							
温度特性 Temperature Characteristics (Impedance ratio at 120Hz)	<table border="1"> <tr> <td><math>U_R</math> (V)</td> <td>50-120</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>4</td> </tr> </table>	$U_R$ (V)	50-120	Z-40°C / Z+20°C	4				
$U_R$ (V)	50-120								
Z-40°C / Z+20°C	4								
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>∅D</td> <td>10</td> <td>12.5</td> <td>&gt; 12.5</td> </tr> <tr> <td>Load life</td> <td>3000h</td> <td>4000h</td> <td>5000h</td> </tr> </table> <p>容量变化率 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</p>	∅D	10	12.5	> 12.5	Load life	3000h	4000h	5000h
∅D	10	12.5	> 12.5						
Load life	3000h	4000h	5000h						
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: 容量变化率 Capacitance change : ±20%初始测量值以内 ±20% of the initial measured value 漏电流 Leakage current : ≤2倍初始规定值 ≤2 times of the 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</p>								

## 外形图及尺寸表 Case Size Table



单位 Unit: mm

∅D	10	12.5	16	18
L	/	20,25	30,35	30,35,40
F	5.0	5.0	7.5	
d	0.6	0.6	0.8	
α(max)	(L<20) 1.5		(L≥20) 2.0	
β(max)	0.5			

## 频率修正系数 Frequency Coefficient

频率 Frequency(Hz)	120	1K	10K	100K
修正系数 Coefficient	0.5	0.8	1	1

## 尺寸 Dimensions

容量 $C_r$ (UF)	代码 Code	电压 $U_r$		50V(1H)			63V(1J)			80V(1K)		
		项目 Item	Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple	
			$\phi D \times L$ (mm)	( $\Omega$ MAX)	(mA)	$\phi D \times L$ (mm)	( $\Omega$ MAX)	(mA)	$\phi D \times L$ (mm)	( $\Omega$ MAX)	(mA)	
220	221		10×20	0.098	466	10×20	0.096	765	12.5×20	0.096	985	
330	331		10×20	0.075	998	12.5×20	0.096	1092	12.5×25	0.096	1208	
470	471		12.5×20	0.048	1192	12.5×20	0.068	1426	16×25	0.048	1579	
680	681		12.5×20	0.042	1535	12.5×25	0.048	1705				
1000	102		16×30	0.038	1833	16×25	0.042	1832	16×30	0.035	2106	

容量 $C_r$ (UF)	代码 Code	电压 $U_r$		100V(2A)			120V(2N)		
		项目 Item	Size	ESR	Ripple	Size	ESR	Ripple	
			$\phi D \times L$ (mm)	( $\Omega$ MAX)	(mA)	$\phi D \times L$ (mm)	( $\Omega$ MAX)	(mA)	
220	221		12.5×25	0.096	989	16×25	0.42	1105	
330	331		16×25	0.066	1385	18×25	0.38	1515	
470	471		16×25	0.058	1733				
680	681								
1000	102		18×40	0.038	2317				

Size  $\phi D \times L$ (mm)  
 Maximum Allowable Ripple Current (mA rms) at 105°C 100kHz  
 Maximum ESR ( $\Omega$ ) at 20°C 100kHz

## 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  $\mu\text{F}$  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( $\mu\text{F}$ )	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:

$\Phi\text{D}$	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 $\mu\text{F}$  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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