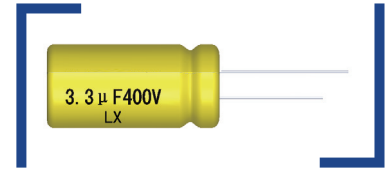


## 特点 Features

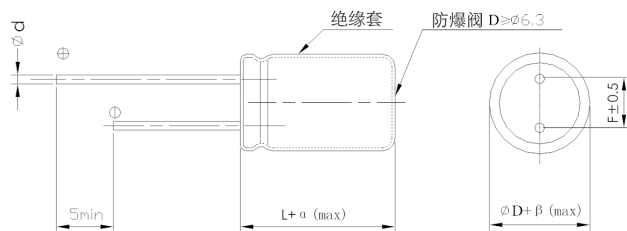
- 耐高温, 130°C 2000-5000小时。  
High reliability high temperature 130°C 2000-5000hours.
- 符合RoHS标准。  
RoHS compliant.



## 主要技术性能 Specifications

项目 Items	特性 Characteristics															
使用温度范围 Operating Temperature Range	-40~+130°C															
额定电压范围 Rated Voltage Range	10~100 V	160~450V														
标称电容容量范围 Nominal Capacitance Range	1~3300μF															
标称电容容量允许偏差 Capacitance Tolerance	± 20% (120Hz, +20°C)															
漏电流 Leakage Current (+20°C)	$I \leq 0.01CV$ or $3(\mu A)$ 2分钟 (at 20°C, after 2 minutes) 取较大者 (whichever is greater)	$I \leq 0.02 CV + 10(\mu A)$ 2分钟, 20°C (at 20°C, after 2 minutes)														
损耗角正切值 (tgδ) Dissipation Factor (+20°C, 120Hz)	<table border="1"> <tr> <td><math>U_R</math> (V)</td> <td>10</td> <td>16</td> <td>25</td> <td>35~100</td> <td>160~250</td> <td>350~450</td> </tr> <tr> <td>tgδ</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.15</td> <td>0.20</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)	10	16	25	35~100	160~250	350~450	tgδ	0.20	0.16	0.14	0.12	0.15	0.20
$U_R$ (V)	10	16	25	35~100	160~250	350~450										
tgδ	0.20	0.16	0.14	0.12	0.15	0.20										
温度特性 Temperature Characteristics (Impedance ratio at 120Hz)	<table border="1"> <tr> <td><math>U_R</math> (V)</td> <td>10~16</td> <td>25~100</td> <td>160~250</td> <td>350~400</td> <td>450</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>4</td> <td>3</td> <td>6</td> <td>7</td> <td>9</td> </tr> </table>		$U_R$ (V)	10~16	25~100	160~250	350~400	450	Z-40°C / Z+20°C	4	3	6	7	9		
$U_R$ (V)	10~16	25~100	160~250	350~400	450											
Z-40°C / Z+20°C	4	3	6	7	9											
耐久性 Load Life	<p>在+130°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 +130°C, the peak voltage shall not exceed the voltage.</p> <table border="1"> <tr> <td>ØD</td> <td>6.3~8</td> <td>10</td> <td>≥12.5</td> </tr> <tr> <td>Load life</td> <td>2000h</td> <td>3000h</td> <td>5000h</td> </tr> </table> <p>电容变化率 Capacitance change : ≤±30%初始测量值以内 ±30% 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 : ≤3倍初始规定值数 ≤3 times of the initial specified value</p>		ØD	6.3~8	10	≥12.5	Load life	2000h	3000h	5000h						
ØD	6.3~8	10	≥12.5													
Load life	2000h	3000h	5000h													
高温贮存 Shelf Life	<p>+130°C 1000小时贮存后, 恢复16小时后 After storage for 1000 hours at +130°C and then resumed for 16 hours: 电容变化率 Capacitance change : ≤±30%初始测量值以内 ≤±30% of the initial measured value 漏电流 Leakage current : ≤5倍初始规定值 ≤5 times of the initial specified value 损耗角正切值 Dissipation factor : ≤3倍初始规定值数 ≤3 times of the initial specified value</p>															

## 外形图及尺寸表 Case Size Table



单位 Unit: mm

ØD	6.3	8	10~12.5	16~18
F	2.5	3.5	5.0	7.5
d	0.5	0.5、0.6	0.6	0.8
α(max)	(L<20) 1.5 (L≥20) 2.0			
β(max)	0.5			

## 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

容量 CR(μF)		电压 UR 项目 Item 代码 Code		10V(1A)		16V(1C)		25V(1E)	
				Size	Ripple	Size	Ripple	Size	Ripple
				φD×L(mm)	(mA)	φD×L(mm)	(mA)	φD×L(mm)	(mA)
100	101			6.3×11	200	6.3×11	240		
150	151			6.3×11	220	6.3×11	230	8×11.5	330
220	221			6.3×11	245	6.3×11	295	8×11.5	360
330	331			6.3×11	295	8×11.5	360	10×12.5	625
470	471			8×11.5	475	10×12.5	630	10×16	800
1000	102			10×16	850	10×16	860	12.5×20	1100
2200	222			12.5×20	1300	12.5×20	1400	16×25	2200
3300	332			12.5×25	1600	16×25	2200	16×30	2350

容量 CR(μF)		电压 UR 项目 Item 代码 Code		35V(1V)		50V(1H)		63V(1J)		100V(2A)	
				Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
				φD×L(mm)	(mA)	φD×L(mm)	(mA)	φD×L(mm)	(mA)	φD×L(mm)	(mA)
10	100									6.3×11	145
22	220					6.3×11	220	6.3×11	160	8×11.5	220
33	330					6.3×11	250	6.3×11	180	8×11.5	220
47	470			6.3×11	260	8×11.5	330	8×11.5	260	10×12.5	270
100	101			8×11.5	360	10×12.5	520	10×12.5	480	10×20	590
220	221			10×12.5	625	10×20	890	10×20	720	12.5×25	950
330	331			10×16	805	10×25	1100	12.5×20	900	16×25	1200
470	471			10×20	960	12.5×20	1100	16×25	1500	16×30	1500
1000	102			12.5×20	1340	16×25	2050	16×30	1850		
2200	222			16×30	2350	18×35	2700				

容量 CR(μF)		电压 UR 项目 Item 代码 Code		160V(2C)		200V(2D)		250V(2E)	
				Size	Ripple	Size	Ripple	Size	Ripple
				φD×L(mm)	(mA)	φD×L(mm)	(mA)	φD×L(mm)	(mA)
2.2	2R2			6.3×9	40	6.3×9	50		
2.7	2R7			6.3×11	50	6.3×11	60		
3.3	3R3			6.3×9	55	8×9	65	8×9	70
4.7	4R7			6.3×11	60	8×9	90	8×9	105
5.6	5R6			6.3×11	65	8×9	115	8×11.5	115
6.8	6R8							10×9	115
				8×9	70	8×9	125	8×11.5	130
								10×9	130
8.2	8R2			8×9	85	8×11.5	155	8×16	180
						10×9	155	10×12.5	180
10	100			8×11.5	180	8×16	190	8×16	200
						10×9	170	10×12.5	200
15	150			8×16	260	10×12.5	265	10×16	300
22	220			8×16	320	10×16	390	10×20	460
33	330			10×16	380	12.5×20	500	12.5×20	550
								8×40	595
47	470			12.5×20	540	16×20	680	18×20	700
						8×50	700	10×55	740
68	680			8×50	710	10×50	790	10×50	820
				12.5×25	650	16×25	750	16×30	820
82	820			16×20	750	10×50	880	12.5×40	930
						16×30	900	18×25	930
100	101			10×40	920	16×30	1000	16×35	1070
				16×25	960	18×25	1000	12.5×50	1100
150	151			12.5×40	990	18×30	1260		
				16×30	990	12.5×60	1420		
220	221			18×30	1400				
				12.5×55	1500				

Size φD×L(mm)

Maximum Allowable Ripple Current (mA rms) at 130°C 100KHz

## 尺寸 Dimensions

容量 CR(μF)	代码 Code	电压 UR	350V(2V)		400V(2G)		450V(2W)	
			Size	Ripple	Size	Ripple	Size	Ripple
			φD×L(mm)	(mA)	φD×L(mm)	(mA)	φD×L(mm)	(mA)
1	010		6.3×9	38	6.3×9	42	6.3×11	40
1.5	1R5		6.3×11	50	6.3×11	50	6.3×11	48
1.8	1R8		6.3×11	55	6.3×11	55	8×9	52
2.2	2R2		8×9	60	8×9	65	8×9	60
2.7	2R7		8×9	65	8×9	70	8×9	65
3.3	3R3		8×11.5	75	8×11.5	80	8×11.5	70
					10×9	80	10×9	70
4.7	4R7		10×9	100	8×16	115	8×16	85
			8×16	115	10×12.5	115	10×12.5	85
5.6	5R6		8×16	120	8×16	120	10×12.5	105
			10×12.5	120	10×12.5	120		
6.8	6R8		8×16	150	10×16	175	10×16	140
			10×12.5	150				
8.2	8R2		10×16	160	10×16	185	10×16	150
10	10		10×16	200	10×20	220	10×20	200
15	150		12.5×20	330	12.5×20	350	8×40	290
							12.5×25	290
22	220		12.5×20	350	8×50	440	16×25	400
			8×50	420	16×20	440		
33	330		10×45	500	12.5×40	590	10×50	460
			16×25	500	16×30	590	18×25	460
47	470		10×55	660	18×25	670	12.5×55	620
			16×30	660	12.5×45	690	16×40	620
68	680		12.5×50	820	18×30	830	18×35	670
			16×40	840	12.5×60	890		
82	820		18×35	920	18×35	930	18×40	780
100	101		18×40	1030	18×40	990		

Size φD×L(mm)

Maximum Allowable Ripple Current (mA rms) at 130°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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