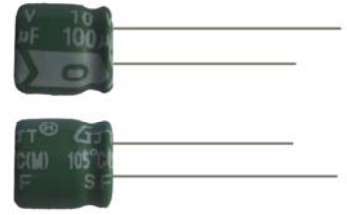


# SF 7mmL, Standard, Long Life

## 7mm 长寿命标准品

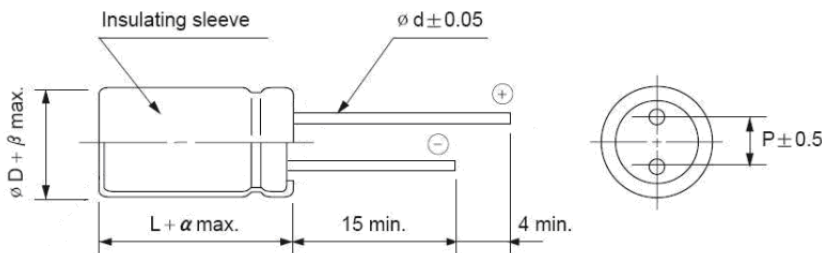


- 7mm High, 105°C, 2000 hours assured.  
7mm, 105°C, 2000 小时品
- Design for Space-saving and high density insertion.  
适合节省空间设计和高密度插件
- Suitable for pocket electronic equipments, such as: VTR, Camera, Car audio, Mini-audio, pocket recorder etc.  
适用于小型设备, 如录像机、相机, 汽车音响、迷你音响、录音机等

### Specifications 特性表

Items 项目	Characteristics 主要特性																											
Category Temperature Range 使用温度范围	4~63V <sub>dc</sub>																											
Rated Voltage Range 额定工作电压范围	-40 ~ +105°C																											
Capacitance Tolerance 静电容量允许偏差	±20% (M), at 20°C, 120Hz																											
Leakage Current 漏电流, 20°C 环境下施加工作电压 2 分钟后. (at 20°C, After 2 minutes)	I ≤ 0.01CV or 3uA, whichever is greater 漏电流 ≤ 0.01CV or 3uA, 取较大值 Where, I : Max. leakage current (漏电流, μA), C : Nominal capacitance (静电容量, μF), V : Rated voltage (额定电压 V)																											
Dissipation Factor (Tanδ, at 20°C, 120Hz) 损耗角正切值 (测试条件为 20°C, 120Hz)	<table border="1"> <tr> <td>Rated voltage (V) 额定工作电压</td> <td>4</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> </tr> <tr> <td>Tanδ (Max.) 最大损耗角正切</td> <td>0.35</td> <td>0.22</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>10</td> </tr> </table> <p>When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. 静电容量大于 1000uF, 每增加 1000uF, 损耗角正切增加 0.02</p>	Rated voltage (V) 额定工作电压	4	6.3	10	16	25	35	50	63	Tanδ (Max.) 最大损耗角正切	0.35	0.22	0.20	0.16	0.14	0.12	0.10	10									
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Low Temperature Characteristics (Max. Impedance Ratio, 120Hz) 低温特性最大阻抗比	<table border="1"> <tr> <td>Rated voltage (V) 额定工作电压</td> <td>4</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> </tr> <tr> <td>Z(-25°C)/Z(20°C)</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z(-40°C)/Z(20°C)</td> <td>12</td> <td>10</td> <td>8</td> <td>6</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> </tr> </table>	Rated voltage (V) 额定工作电压	4	6.3	10	16	25	35	50	63	Z(-25°C)/Z(20°C)	6	4	3	3	2	2	2	2	Z(-40°C)/Z(20°C)	12	10	8	6	4	4	4	4
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Z(-25°C)/Z(20°C)	6	4	3	3	2	2	2	2																				
Z(-40°C)/Z(20°C)	12	10	8	6	4	4	4	4																				
Endurance 耐久性	<p>The following specification shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the ripple current is applied for the specified period of time at 105°C. 在 105°C 环境中, 不超过额定电压的范围内叠加额定纹波电流, 连续加载规定时间的额定电压后, 待温度恢复到 20°C 进行测量时, 应满足以下要求。</p> <table border="1"> <tr> <td>Test Time 测试时间</td> <td>2,000Hrs</td> </tr> <tr> <td>Capacitance Change 静电容量变化率</td> <td>Within ±20%(4~6.3v: ±30%) initial value 初始值的±20%以内</td> </tr> <tr> <td>Dissipation Factor 损耗角正切</td> <td>≤200% of specified value 不大于规范值的 200%</td> </tr> <tr> <td>Leakage Current 漏电流</td> <td>≤The initial specified value 不大于规范值</td> </tr> </table>	Test Time 测试时间	2,000Hrs	Capacitance Change 静电容量变化率	Within ±20%(4~6.3v: ±30%) initial value 初始值的±20%以内	Dissipation Factor 损耗角正切	≤200% of specified value 不大于规范值的 200%	Leakage Current 漏电流	≤The initial specified value 不大于规范值																			
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Shelf Life 高温贮存	<p>The above specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of IEC 60384-4. 在 105°C 环境中, 无负荷放置 1,000 小时后待温度恢复到 20°C, 进行试验前处理(IEC 60384-4 4.1 项)后进行测量时, 应满足以下要求。</p> <table border="1"> <tr> <td>Capacitance Change 静电容量变化率</td> <td>Within ±20% initial value 初始值的±20%以内</td> </tr> <tr> <td>Dissipation Factor 损耗角正切值</td> <td>≤200% of specified value 不大于规范值的 200%</td> </tr> <tr> <td>Leakage Current 漏电流</td> <td>≤The initial specified value 不大于规范值</td> </tr> </table>	Capacitance Change 静电容量变化率	Within ±20% initial value 初始值的±20%以内	Dissipation Factor 损耗角正切值	≤200% of specified value 不大于规范值的 200%	Leakage Current 漏电流	≤The initial specified value 不大于规范值																					
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### Drawing(Unit: mm) 外形图



ΦD	4	5	6.3	8
P	1.5	2.0	2.5	3.5
Φd	0.45	0.50		
α	1.0			
β	0.5			

### Rated ripple current multipliers(Unit: mm) 额定纹波修正系数

Frequency 频率 (Hz)	60Hz	120Hz	300Hz	1KHz	10KHz~	
Coefficient 系数	Under 100μF	0.75	1.00	1.10	1.30	1.45
	100 to 470μF	0.85	1.00	1.05	1.15	1.20

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise.

铝电解电容器由于在纹波电流叠加时自我发热、温度上升而老化, 每升温 5°C 寿命减少一半。

When long life performance is required in actual use, the rms ripple current has to be reduced.

要想保持长寿命请在使用过程中降低纹波电流。

# SF Series

Standard ratings 标准品一览表

WV μF	4		6.3		10		16		25		35		50		63	
	ΦD x L	R.C.	ΦD x L	R.C.	ΦD x L	R.C.	ΦD x L	R.C.	ΦD x L	R.C.	ΦD x L	R.C.	ΦD x L	R.C.	ΦD x L	R.C.
0.1													4x7	1.5	4x7	1.5
0.15													4x7	1.8	4x7	1.8
0.22													4x7	2.5	4x7	2.5
0.33													4x7	3.5	4x7	3.5
0.47													4x7	5	4x7	6.0
0.68													4x7	7	4x7	7.0
1													4x7	10	4x7	12
1.5													4x7	13	4x7	14
2.2													4x7	19	4x7	19
3.3													4x7	24	5x7	25
4.7									4x7	17	4x7	22	4x7	27	5x7	29
													5x7	29	6.3x7	33
6.8							4x7	20	4x7	21	4x7	24	5x7	32	6.3x7	35
													5x7	28		
10							4x7	30	4x7	30	4x7	30	5x7	35	6.3x7	40
													5x7	33		
15					4x7	28	4x7	32	5x7	38	5x7	38	6.3x7	52	8x7	55
													6.3x7	45		
22	4x7	23	4x7	31	4x7	35	4x7	37	5x7	45	5x7	50	6.3x7	60	8x7	65
													6.3x7	48		
33	4x7	26	4x7	32	4x7	40	4x7	45	5x7	52	6.3x7	54	6.3x7	64	8x7	82
			5x7	35	5x7	45	5x7	50	6.3x7	60	8x7	68	8x7	78		
47	4x7	35	5x7	47	5x7	51	6.3x7	67	6.3x7	68	6.3x7	62	8x7	115		
															8x7	72
68	5x7	55	5x7	55	6.3x7	68	6.3x7	72	6.3x7	75	8x7	85	8x9	145		
100	6.3x7	60	6.3x7	75	6.3x7	90	8x7	105	8x7	115	8x7	135				
220	8x7	90	8x7	95	8x7	150	8x9	210	8x9	270						
330	8x7	150	8x9	165	8x9	180										
470	8x9	180														
330	6.3x7	150	8x7	120	8x7	170										
					8x9	180										
470	8x7	180	8x9	190	8x9	230										

Note1: Case size ΦD x L(mm), ripple current (mA, rms) at 105°C, 120Hz. 尺寸 ΦD x L(mm), 纹波电流于 105°C, 120Hz

Note2: Produce custom product too, which are not found in these tables. 客户定制品不在标准品一览表内