

VSL Series

Low leakage current 低漏电流



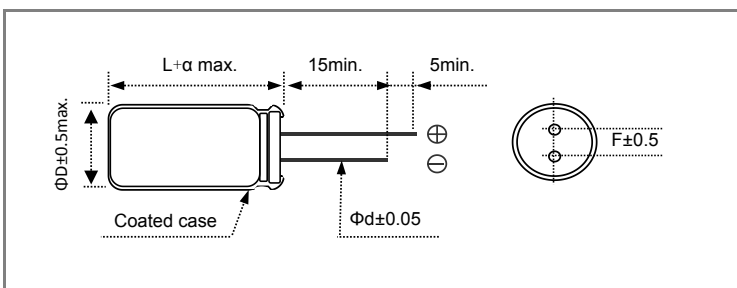
FEATURES 特点

- Low profile (低漏电流产品).
- Low ESR at high frequency range & Large permissible ripple current (在高频范围内的低ESR, 允许大纹波电流).

SPECIFICATIONS 规格表

Item 项目	Performance Characteristics 特性参数		
Operation Temperature Range 工作温度范围	-55 to +105°C		
Rated Working Voltage Range 额定电压范围	2.5 to 25 VDC		
Capacitance Tolerance 静电容量允许偏差	±20%(120Hz,+20°C)		
Leakage Current 漏电流	LC≤300 CV (µA) after 2 minutes application of rated working voltage at +20 °C 施加额定工作电压充电2分钟后读数, [C: 静电容量(uF), V: 额定电压(V)]		
Dissipaom Factor (tan δ) 损失角正切值 (120Hz,+20°C)	Not to exceed the value specified 见特性规格表		
ESR 串联等效阻抗(100KHz)	Not to exceed the value specified 见特性规格表		
High Temperature Loading (Endurance) 高温负荷寿命(耐久性)	Test conditions 试验条件		
	Duration 持续时间	2,000 hours	
	Ambient temp. 环境温度	+105°C	
	Applied voltage 施加电压	DC voltage with maximum permissible ripple current specified at +105°C 施加直流电压与额定纹波电流(所加电压峰值[DC+AC]不超过额定工作电压)	
		Post test requirements at +20°C 试验后特性应满足如下要求	
		Leakage current 漏电流	≤Initial specified value 初始规格值
		Cap. Change 静电容量变化率	within ±20% of initial measured value 初始测试值的±20%内
		D.F.(tan δ) 损失角正切值	≤150% of initial specified value 1.5倍初始规格值
		ESR 串联等效阻抗	≤150% of initial specified value 1.5倍初始规格值
Mosisture Resistance 防潮抗湿性	Test conditions 试验条件		
	Duration 持续时间	2,000 hours	
	Ambient temp. 环境温度	+60°C	
	Humidity 湿度	90~95%	
		Post test requirements at +20°C 试验后特性应满足如下要求	
		Leakage current 漏电流	≤Initial specified value 初始规格值
		Cap. Change 静电容量变化率	within ±20% of initial measured value 初始测试值的±20%内
		D.F.(tan δ) 损失角正切值	≤150% of initial specified value 1.5倍初始规格值
		ESR 串联等效阻抗	≤150% of initial specified value 1.5倍初始规格值

CASE SIZE TABLE 尺寸图 (Unit : mm)



ΦD×L	ΦD+0.5max.	α	F±0.5	Φd±0.05
4×5	4.0	1.0	1.5	0.45
5×5	5.0	1.0	2.0	0.45
6.3×5.2	6.3	1.0	2.5	0.45
6.3×7	6.3	1.0	2.5	0.5
5×11	5.0	1.0	2.0	0.5
6.3×11	6.3	1.0	2.5	0.6

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Size List 标准品尺寸一览表

Work Voltage (SV)		2.5v (2.8v)	4v (4.6v)	6.3v (7.2v)	10v (11.5v)	16v (18.4v)	20v (23v)	25v (27.5v)
Cap.(μ F)	Code	Case Size	Case Size	Case Size	Case Size	Case Size	Case Size	Case Size
10	010				4×5	6.3×5.2 6.3×7	6.3×5.2 6.3×7	6.3×5.2 6.3×7
15	015				4×5	6.3×5.2、 6.3×7	6.3×5.2 6.3×7	6.3×5.2 6.3×7
22	022				4×5	6.3×5.2 6.3×7	6.3×5.2 6.3×7	6.3×7
33	033				5×5 6.3×5.2	6.3×5.2 6.3×7	6.3×7	6.3×7
39	039				5×5 6.3×5.2	6.3×5.2 6.3×7	6.3×7	6.3×7
47	047				6.3×5.2 6.3×7	6.3×5.2 6.3×7	6.3×7	6.3×11
68	068				6.3×5.2 6.3×7	6.3×5.2 6.3×7	6.3×11	
82	082				6.3×5.2 6.3×7	6.3×7		
100	101	4×5 5×5	5×5	6.3×5.2 6.3×7	6.3×5.2 6.3×7	6.3×7 6.3×11		
150	151	5×5 6.3×5.2	6.3×5.2 6.3×7	6.3×5.2 6.3×7	6.3×5.2 6.3×7	6.3×11		
180	181	5×5 6.3×5.2	6.3×5.2 6.3×7	6.3×5.2 6.3×7	6.3×7	6.3×11		
220	221	5×5 6.3×5.2	6.3×5.2 6.3×7	6.3×5.2 6.3×7	5×11 6.3×7			
270	271	6.3×5.2 6.3×7	6.3×5.2 6.3×7	6.3×5.2 6.3×7	6.3×11			
330	331	6.3×5.2 6.3×7	6.3×5.2 6.3×7	6.3×5.2 6.3×7	6.3×11			
390	391	6.3×5.2 6.3×7	6.3×5.2 6.3×7	6.3×7、 6.3×11				
470	471	6.3×5.2 6.3×7	6.3×7	6.3×11				
560	561	6.3×7	6.3×11					
680	681	6.3×11						

Specifications are subject to change without notice. Should a safety or technical concern arise regarding the product, please be sure to contact our sales offices or agents immediately

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Dimensions & Characteristics 尺寸、特性对应表

Ripple Current (mA rms) at 105°C 100kHz

W.V (V)	Capacitance (uF)	LC. (uA) 2min	tgδ (120Hz,20°C)	ESR (mΩ,100KHz)	Maximum Permissible Current (mA,rms)	Size ΦD×L(mm)
2.5	100	300	0.08	30	1670、1970	4×5、5×5
	150	300	0.08	30	1970、2200	5×5、6.3×5.2
	180	300	0.08	30	1970、2200	5×5、6.3×5.2
	220	300	0.08	30	2200、2610	5×5、6.3×5.2
	270	300	0.08	25	2610	6.3×5.2
				20	2690	6.3×7
	330	300	0.08	25	2610	6.3×5.2
				20	2690	6.3×7
	390	300	0.08	20	2690	6.3×5.2、6.3×7
	470	300	0.08	15	3100	6.3×5.2、6.3×7
560	300	0.08	15	3100	6.3×7	
680	300	0.08	15	3500	6.3×11	
4	100	300	0.08	30	1970	5×5
	150	300	0.08	30	2200	6.3×5.2
				25	2670	6.3×7
	180	300	0.08	30	2200	6.3×5.2
				25	2670	6.3×7
	220	300	0.08	25	2610	6.3×5.2
				20	2690	6.3×7
	270	300	0.08	25	2610	6.3×5.2
				20	2690	6.3×7
	330	300	0.08	20	2690	6.3×5.2
15				3100	6.3×7	
390	300	0.08	15	3100	6.3×5.2、6.3×7	
470	300	0.08	15	3100	6.3×7	
560	300	0.08	15	3500	6.3×11	
6.3	100	300	0.08	25	2390	6.3×5.2
				20	2690	6.3×7
	150	300	0.08	25	2390	6.3×5.2
				20	2690	6.3×7
	180	300	0.08	20	2690	6.3×5.2、6.3×7
	220	300	0.08	15	3100	6.3×5.2、6.3×7
	270	300	0.08	15	3100	6.3×5.2、6.3×7
	330	300	0.08	15	3100	6.3×5.2、6.3×7
390	300	0.08	15	3500	6.3×7、6.3×11	
470	300	0.08	15	3500	6.3×11	

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Dimensions & Characteristics 尺寸、特性对应表 Ripple Current (mA rms) at 105°C 100kHz

W.V (V)	Capacitance (uF)	LC. (uA) 2min	tgδ (120Hz,20°C)	ESR (mΩ,100KHz)	Maximum Permissible Current (mA,rms)	Size ΦD×L(mm)
10	10	300	0.08	45	1200	4×5
	15	300	0.08	45	1200	4×5
	22	300	0.08	45	1200	4×5
	33	300	0.08	45	1670	5×5
				30	2200	6.3×5.2
	39	300	0.08	45	1670	5×5
				30	2200	6.3×5.2
	47	300	0.08	30	2200	6.3×5.2
				20	2690	6.3×7
	68	300	0.08	30	2200	6.3×5.2
				20	2690	6.3×7
	82	300	0.08	30	2200	6.3×5.2
				20	2690	6.3×7
	100	300	0.08	30	2200	6.3×5.2
20				2690	6.3×7	
150	300	0.08	20	2690	6.3×5.2、6.3×7	
180	300	0.08	20	2690	6.3×7	
220	300	0.08	20	2690	5×11、6.3×7	
270	300	0.08	15	3500	6.3×11	
330	300	0.08	15	3500	6.3×11	
16	10	300	0.08	30	2200	6.3×5.2
				25	2610	6.3×7
	15	300	0.08	30	2200	6.3×5.2
				25	2610	6.3×7
	22	300	0.08	30	2200	6.3×5.2
				25	2610	6.3×7
	33	300	0.08	30	2200	6.3×5.2
				25	2610	6.3×7
	47	300	0.08	30	2200	6.3×5.2
				25	2610	6.3×7
	68	300	0.08	30	2200	6.3×5.2
				20	2690	6.3×7
82	300	0.08	20	2690	6.3×7	
100	300	0.08	20	2690	6.3×7	
			15	3500	6.3×11	
220	300	0.08	15	3500	6.3×11	

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Dimensions & Characteristics 尺寸、特性对应表

Ripple Current (mA rms) at 105°C 100kHz

W.V (V)	Capacitance (uF)	LC. (uA) 2min	tgδ (120Hz,20°C)	ESR (mΩ,100KHz)	Maximum Permissible Current (mA,rms)	Size ΦD×L(mm)
20	10	300	0.08	30	2200	6.3×5.2
				25	2670	6.3×7
	15	300	0.08	30	2200	6.3×5.2
				25	2670	6.3×7
	22	300	0.08	30	2200	6.3×5.2
				25	2670	6.3×7
	33	300	0.08	25	2670	6.3×7
	39	300	0.08	25	2670	6.3×7
47	300	0.08	25	2670	6.3×7	
68	300	0.08	20	2900	6.3×11	
25	10	300	0.08	30	2200	6.3×5.2
				25	2670	6.3×7
	15	300	0.08	25	2200、2670	6.3×5.2、6.3×7
	22	300	0.08	25	2670	6.3×7
	33	300	0.08	25	2670	6.3×7
	39	300	0.08	25	2670	6.3×7
	47	300	0.08	20	2900	6.3×11

Multiplier for Ripple Current vs. Frequency 纹波电流频率修正系数

Frequency Coefficient 频率系数

Frequency	120 Hz≤freq. < 1KHz	1KHz≤freq. < 10KHz	10 KHz≤freq. < 100KHz	100 KHz≤freq. < 300KHz
Coefficient	0.05	0.3	0.7	1.0

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