

LOW LEAKAGE CURRENT

低漏电流品

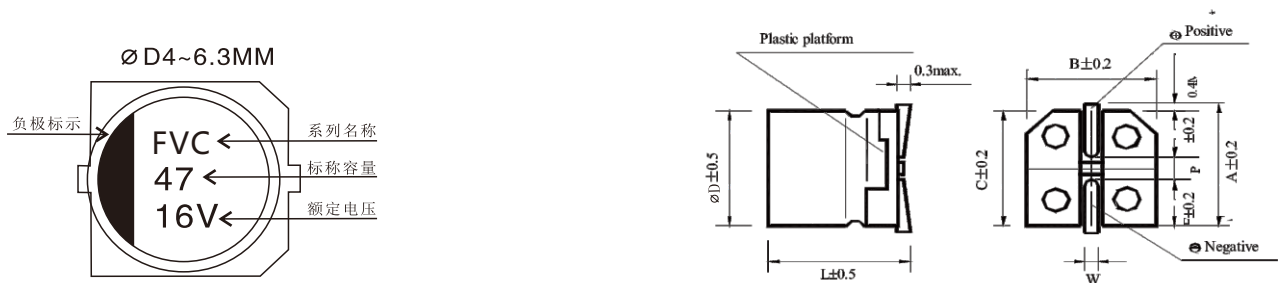
- Low leakage current (0.5~3.3 μ A max.)
低漏电流 (0.5~3.3 μ A 最大值)
- Low cost for replacement of some tantalum applications
可替换价格较高的钽电容器
- Comply with the RoHS directive
符合 RoHS指令



□ SPECIFICATIONS 特性表

Items 项目	Characteristics 主要特性						
Operation Temperature Range 使用温度范围	-40 ~ +105°C						
Voltage Range 额定工作电压范围	6.3 ~ 50V						
Capacitance Range 静电容量范围	0.1 ~ 220 μ F						
Capacitance Tolerance 静电容量允许偏差	\pm 20% at 120Hz, 20°C						
Leakage Current 漏电流	Leakage current \leq 0.002CV or 0.5 μ A, whichever is greater (after 2 minutes application of rated voltage) 漏电流 \leq 0.002CV 或 0.5 μ A, 取较大值 (施加额定工作电压 2 分钟后)						
Surge Voltage & Dissipation Factor (tan δ) 浪涌电压和损耗角正切	Measurement frequency 测试频率: 120Hz, Temperature 温度: 20°C						
	Rated Voltage (V) 额定工作电压	6.3	10	16	25	35	50
	Surge voltage 浪涌电压	8.0	13	20	32	44	63
	tan δ (max.) 最大损耗角正切	0.24	0.20	0.18	0.16	0.14	0.12
Stability at Low Temperature 低温特性	Measurement frequency 测试频率: 120Hz						
	Rated Voltage (V) 额定工作电压	6.3	10	16, 25	35, 50		
	Impedance Ratio 阻抗比	Z(-25°C) / Z(20°C)	4	3	2	2	
	ZT/Z20 (max.)	Z(-40°C) / Z(20°C)	8	6	4	3	
Load Life 高温负荷特性	After 2000 hours application of the rated voltage at 105°C, they meet the characteristics listed below. 在 85°C 环境中施加额定工作电压 2000 小时后, 电容器的特性符合下表的要求。						
	Capacitance Change 静电容量变化率	Within \pm 25% of initial value 初始值的 \pm 25%以内					
	Dissipation Factor 损耗角正切	200% or less of initial specified value 不大于规范值的 200%					
	Leakage Current 漏电流	initial specified value or less 不大于规范值					
Resistance to Soldering Heat 耐焊接热特性	After reflow soldering and restored at room temperature, they meet the characteristics listed below. 经过回流焊并冷却至室温后, 电容器的特性符合下表的要求。						
	Capacitance Change 静电容量变化率	Within \pm 10% of initial value 初始值的 \pm 10%以内					
	Dissipation Factor 损耗角正切	initial specified value or less 不大于规范值					
	Leakage Current 漏电流	initial specified value or less 不大于规范值					
Marking 标识	Black print on the case top. 铝壳顶部黑字印刷。						

□ DRAWING (Unit: mm) 外形图



□ DIMENSIONS (Unit: mm) 尺寸表

ØD x L	4 x 5.4	5 x 5.4	6.3 x 5.4	6.3 x 7.7
A	5.1	6.1	7.3	7.3
B	4.3	5.3	6.6	6.6
C	4.3	5.3	6.6	6.6
P \pm 0.2	1.0	1.3	2.2	2.2
L	5.4	5.4	5.4	7.7

Note: All design and specifications are for reference only and is subject to change without prior notice. If any doubt about safety for your application, please contact us immediately for technical assistance before purchase.

注: 以上所提供的设计及特性参数谨供参考, 任何修改不作预先通知。如果在使用上有疑问, 请在采购前与我们联系, 以便提供技术上的协助

□ DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT & ESR 规格尺寸及最大允许纹波电流及ESR值

WV		6.3 (0J)			10 (1A)			16 (1C)		
Parameter 参数	μF	Case size ∅D × L (mm) 尺寸	E.S.R. (Ω) 20°C, 120Hz E.S.R.值	Ripple current (mA rms) at 85°C, 120Hz 纹波电流	Case size ∅D × L (mm) 尺寸	E.S.R. (Ω) 20°C, 120Hz E.S.R.值	Ripple current (mA rms) at 85°C, 120Hz 纹波电流	Case size ∅D × L (mm) 尺寸	E.S.R. (Ω) 20°C, 120Hz E.S.R.值	Ripple current (mA rms) at 85°C, 120Hz 纹波电流
		10	100							4 × 5.4
22	220	4 × 5.4	23.5	31	5 × 5.4	19.6	35	5 × 5.4	15.7	39
33	330	5 × 5.4	15.7	39	5 × 5.4	13.1	43	6.3 × 5.4	10.5	57
47	470	5 × 5.4	11.0	47	6.3 × 5.4	9.2	59	6.3 × 5.4	7.3	68
100	101	6.3 × 5.4	5.2	75	6.3 × 5.4	4.3	76	6.3 × 7.7	3.5	96
220	221	6.3 × 7.7	2.4	85						

WV		25 (1E)			35 (1V)			50 (1H)		
Parameter 参数	μF	Case size ∅D × L (mm) 尺寸	E.S.R. (Ω) 20°C, 120Hz E.S.R.值	Ripple current (mA rms) at 85°C, 120Hz 纹波电流	Case size ∅D × L (mm) 尺寸	E.S.R. (Ω) 20°C, 120Hz E.S.R.值	Ripple current (mA rms) at 85°C, 120Hz 纹波电流	Case size ∅D × L (mm) 尺寸	E.S.R. (Ω) 20°C, 120Hz E.S.R.值	Ripple current (mA rms) at 85°C, 120Hz 纹波电流
		0.1	0R1							4 × 5.4
0.22	R22							4 × 5.4	980	2.3
0.33	R33							4 × 5.4	653	3.5
0.47	R47							4 × 5.4	459	5
1	010							4 × 5.4	216	10
2.2	2R2							4 × 5.4	98	15
3.3	3R3							4 × 5.4	65	18
4.7	4R7	4 × 5.4	64.2	19	4 × 5.4	55.1	20	5 × 5.4	46	23
10	100	5 × 5.4	30.2	28	5 × 5.4	25.9	30	6.3 × 5.4	22	34
22	220	6.3 × 5.4	13.7	52	6.3 × 5.4	11.8	54	6.3 × 7.7	9.8	85
33	330	6.3 × 5.4	9.1	63	6.3 × 7.7	7.8	105			
47	470	6.3 × 7.7	6.4	100	6.3 × 7.7	5.5	110			

• Case size ∅D×L(mm), ripple current (mA rms) at 105°C, 120Hz • 尺寸∅D×L(mm), 纹波电流(mA rms) 于105°C, 120Hz

□ FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT 纹波电流频率补偿系数

Frequency 频率	~50Hz	120Hz	300Hz	1KHz	10KHz~
Coefficient 系数	0.70	1.00	1.17	1.36	1.50

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

● 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；要想保持长寿命请在使用过程中降低纹波电流。

● Taping specifications are given in page 20 "Taping Specifications". 编带标准请参阅第 20 页“编带标准”。

● Please refer to page 21 "Package Quantity" for the minimum package quantity. 最小包装数量请参阅第 21 页“包装数量”。

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