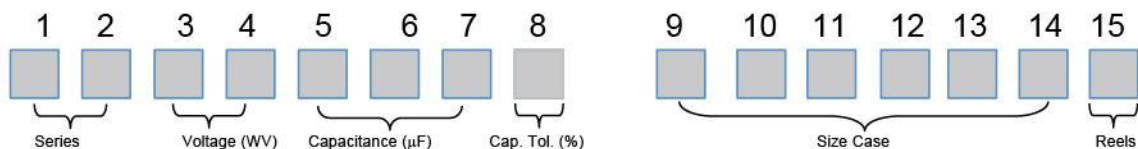


产品编码说明 Explanation of Part Number

1、2	系列代码 Series code	VS		VT		VH		VD		VB		VK		VL		VM		VN		VP		VX		VZ	
3、4	额定电压 Rated voltage	4V	6.3V	10V	16V	25V	35V	50V	63V	80V	100V	120V	160V	200V	250V	315V	350V	400V	450V	200V	250V	315V	350V	400V	450V
	代号 Code name	0G	0J	1A	1C	1E	1V	1H	1J	1K	2A	2R	2C	2D	2E	2F	2V	2G	2W	2D	2E	2F	2V	2G	2W
5、6、7	标称容量 Nominal capacity	0.1	0.22	0.33	0.47	0.68	1	2.2	3.3	4.7	6.8	8.2	10	22	33	47	68	100	150	220	330	470	680	1000	1500
	代号 Code name	0R1	R22	R33	R47	R68	1R0	2R2	3R3	4R7	6R8	8R2	100	220	330	470	680	101	151	221	331	471	681	102	152
8、	容量误差 Capacity error	-5~+5%			-10~+10%		-15~+15%		-20~+20%		-0%~+20%		-5%~+20%		-10%~+20%		-0%~+30%		+10%~+30%		-10%~+30%		-15%~+20%		
	代号 Code name	J			K		Y		M		R		H		V		F		G		Q		E		
9、10、11、12、13、14	尺寸 Series	4*5.4			5*5.4			6.3*5.4			6.3*5.8			6.3*7.7			8*6.5			8*10.5			10*10.5		
	代号 Code name	040054			050054			063054			063058			063077			080065			080105			100105		
15	卷盘颜色 Reel Color	黄盘 Yellow Plate								白盘 White Plate								胶盘 Tape							
	代号 Code name	A								B								C							

实例讲解: VT 50V100uF 8*10.5



Example: VT 1H 101 M 080105 B



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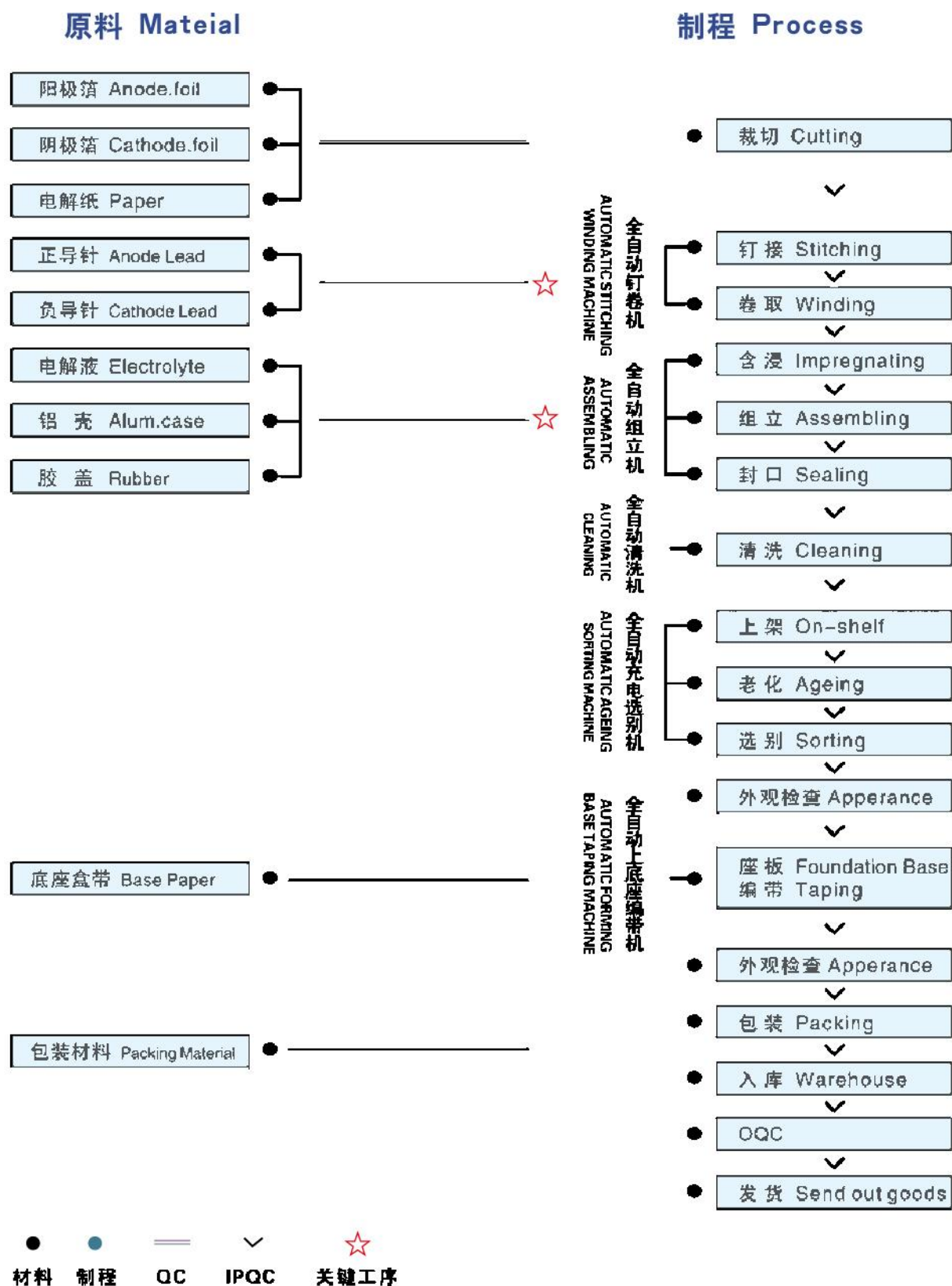
■ 片式铝电解电容器产品一览表 Sheet aluminum electrolytic capacitor product list

名称 Name	系列 Series	特长/用途 Specialty/Use	温度 (°C) Temperature (°C)	额定电压 Rated voltage	容量 Capacity	寿命 Life span	页次 pagination
贴片品 Chip product	VS	一般品 Ordinary goods	-40°C~85°C	6.3V~100V	0.1uF~1500uF	2000H	15
	VT	标准品 Standard goods	-40°C~105°C	6.3V~100V	0.1uF~1500uF	1000~2000H	17
	VH	宽温品 Wide temperature product	-55°C~105°C	6.3V~100V	1uF~1500uF	2000~3000H	20
	VD	低阻抗品 Low-impedance product	-55°C~105°C	6.3V~100V	1uF~1500uF	1000~2000H	23
	VB	极低阻抗品 Very low impedance	-55°C~105°C	6.3V~100V	4.7uF~1500uF	1000~2000H	26
	VK	低漏电品 Low leakage products	-55°C~105°C	6.3V~50V	1uF~220uF	2000H	29
	VL	长寿命品 Long-life product	-40°C~105°C	6.3V~100V	4.7uF~1500uF	3000~5000H	31
	VM	耐高温品 High temperature resistant product	-40°C~125°C	6.3V~50V	10uF~470uF	1000~2000H	34
	VN	双极性品 Bipolar product	-40°C~85°C	6.3V~50V	1uF~220uF	2000H	36
	VP	小型化一般品 Bipolar product	-40°C~105°C	6.3V~100V	10uF~2200uF	1000H	38
	VX	小型化低阻抗品 Miniaturized low impedance products	-55°C~105°C	6.3V~50V	1uF~2200uF	1000H	40
	VZ	小型化低阻抗长寿命品 Miniaturized low impedance long life product	-55°C~105°C	6.3V~100V	1uF~220uF	3000~5000H	43

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工艺流程 Process flow



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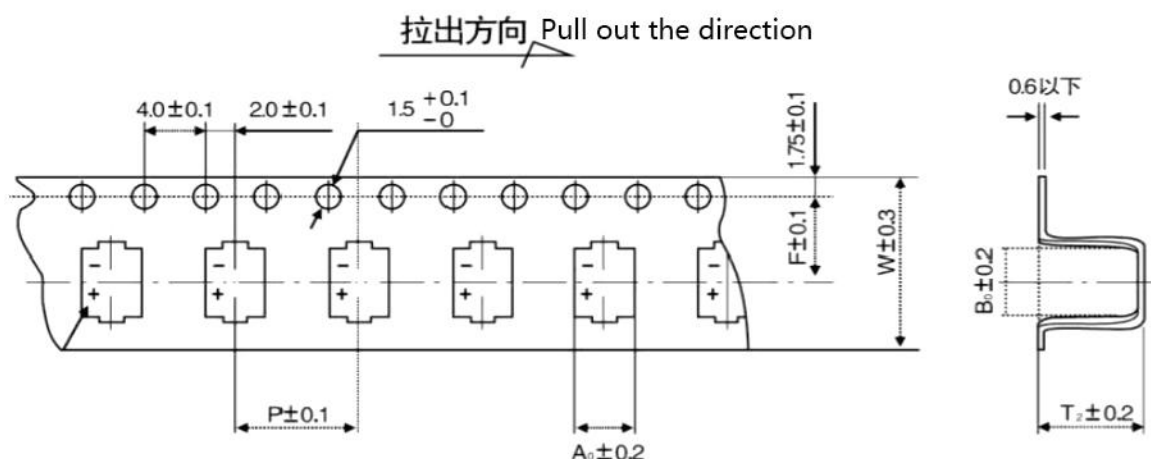
贴片编带规格 Patch braid specifications

编带说明：Taping Specifications

符合标准JIS C0806与IEC 602863.(Applicable standard JIS C0806 and IEC 60286)

盒带图样尺寸与包装 Cassette pattern size and packaging

Fig.1 (4 ~ 10)

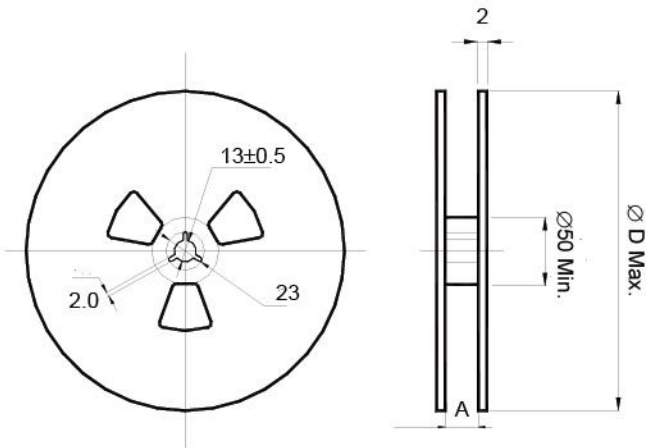


尺寸 Size	W (MM)	P (MM)	F (MM)	A0 (MM)	B0 (MM)	T2 (MM)
Φ4*5.4	12	8	5.5	4.7	4.7	5.8
Φ4*5.8	12	8	5.5	4.7	4.7	6.5
Φ5*5.4	12	12	5.5	6	6	5.8
Φ5*5.8	12	12	5.5	6	6	6.5
Φ6.3*5.4	16	12	7.5	7	7	5.8
Φ6.3*5.8	16	12	7.5	7	7	6.5
Φ6.3*7.7	16	12	7.5	7	7	8.3
Φ8*10.5	24	16	11.5	8.7	8.7	11
Φ10*10.5	24	16	11.5	10.7	10.7	11

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卷盘 Reel



包装数量: Package quantity

规格 Specification	盘装数量 Quantity/Reel	内小箱数量 Number of inner small	外大箱数量 Quantity/Bag	A±0.3 (MM)	D±2 (MM)
Φ4*5.4/5.8	2000 pcs	24000 pcs	48000 pcs	14	382
Φ5*5.4/5.8	1000 pcs	12000 pcs	24000 pcs	14	382
Φ6.3*5.4/5.8	1000 pcs	10000 pcs	20000 pcs	18	382
Φ6.3*7.7	1000 pcs	10000 pcs	20000 pcs	18	382
Φ8*10.5	500 pcs	3500 pcs	7000 pcs	26	382
Φ10*10.5	500 pcs	3500 pcs	7000 pcs	26	382

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无铅回流焊接 Lead-free Reflow Soldering Condition

●回流焊条件推荐：Recommended Conditions for Reflow Soldering:

- (1) 应采用红外线及热风回流焊接，不宜采用汽相加热回流焊接；

A thermal condition system such as infrared radiation (IR) or hot blast should be adopted, and vapor heat transfer systems (VPS) are not recommended.

- (2) 无铅回流焊，请符合下述条件：

For lead-free type reflow soldering, please observe proper conditions below:

- a) 从150°C至180°C的预热时间<120秒以内；

The time of preheating from 150°C to 180°C shall be within maximum 120 seconds;

- b) 电容器顶部温度超过217°C的焊接时间不超过 t_L 时间；

The time of soldering temperature at 217°C measured on capacitors' top shall not exceed t_L (second);

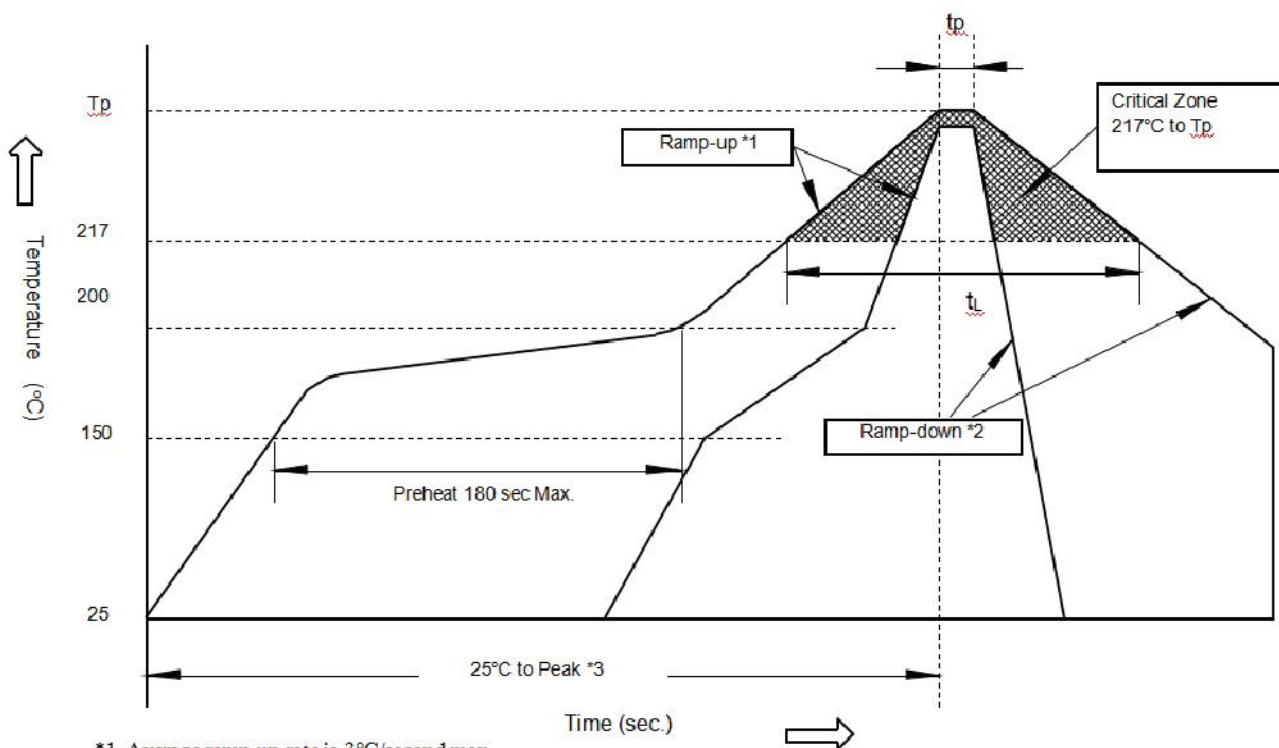
- c) 电容器顶部温度超过230°C的焊接时间不超过 t_d 时间；

The time of soldering temperature at 230°C measured on capacitors' top shall not exceed t_d (second);

- d) 电容器顶部尖峰温度不超过 T_p °C，在5°C范围内的实际尖峰温度时间不超过 t_p 时间

The peak temperature on capacitors' top shall not exceed T_p (°C), and the time within 5°C of actual peak temperature shall not exceed t_p (second).

●回流焊曲线图：Classification Reflow Profile:



*1. Average ramp-up rate is 3°C/second max.

*2. Ramp-down rate is 6°C /second max.

*3. Time from 25°C to peak temperature is 8 minutes max.

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● 尖峰温度允许范围：Allowable Range of Peak Temperature

Size	Thickness (mm)	Tp(°C)	tL (second)	Td (second)	tp (second)
Ø4~Ø6.3*7.7L	≥2.5	250±5	≤40	≤20	≤5
Ø8*6.5L	≥2.5	240±5	≤30	≤10	≤5
Ø8~Ø10/10.5L	≥2.5	240±5	≤30	≤10	≤5

*如果使用条件较上表所列高时，请与我们联系。

If the conditions of use are higher than those listed in the above table, please contact us.

*如果贵司有需要二次回流焊焊接时，请确认电容器之温度与冷却至5~35°C(电容器最多2回流焊，且需要做2次回流焊时请与我们联系)

If you need to reflow for secondary welding, please confirm the temperature and cooling of the capacitor to 5~35°C (the capacitor is reflow up to 2 times, and if you need to reflow 2 times, please contact us)

*回流焊会降低制品的额定静电容量，应确认回流焊条件是否满足建议回流焊之规范。

Reflow will reduce the rated electrostatic capacity of the product, and it should be confirmed that the reflow conditions meet the recommended reflow specifications.

*虽然实际的回流焊条件变更仍依据各项回流焊焊接方法，请注意制品铝壳底部之最高温度及电极端子不可超过规定之最高温度。

Although the actual reflow conditions are changed according to the reflow welding method, please note that the maximum temperature at the bottom of the aluminum shell of the product and the electrode terminal must not exceed the specified maximum temperature.

1) 回流焊方法如下 Reflow welding methods are as follows:

回流焊 Reflow welding:

于焊接时请遵循使用之温度条件，如使用较高之温度时，请量测并告知电容温度及回流焊条件。制品尺寸较大其上升的温度较为缓慢，并非得依制品尺寸来调整回流焊温度。

When welding, please follow the temperature conditions used. If higher temperatures are used, please measure and inform the capacitor temperature and reflow conditions. The product size is larger, and the temperature rise is slower, so it is not necessary to adjust the reflow temperature according to the product size.

2) 焊锡注意事项 Solder precautions:

1、回流焊焊接影响的相关因素 Related factors affecting reflow welding:

*制品尺寸：制品尺寸较大其温度上升较为缓慢

Product size: The product size is larger and the temperature rise is slower

*制品安装位置：PCB中心的温度较PCB边缘温度低

Product installation position: PCB center temperature is lower than PCB edge temperature

*PCB尺寸：PCB尺寸大或者厚度较厚，上升的温度较慢

PCB size: The PCB size is large or the thickness is thick, and the temperature rises slowly

2、反复回流焊 Repeated reflow welding

*如果可以，应尽量避免2次回流焊

If possible, try to avoid reflow welding twice

*如果反复回流焊是不可避免的，请量测并告知第一次与第二次的回流焊温度，以及回流焊之时间。

If repeated reflow soldering is unavoidable, measure and inform the first and second reflow temperatures and the time of reflow soldering.

*请勿3次回流焊。 Do not reflow 3 times.

3、如果需用手工烙铁焊锡时请遵循下列条件作业：

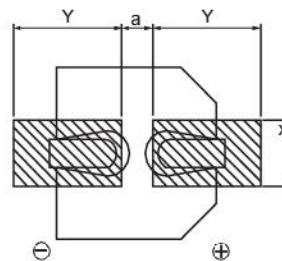
If you need to use a manual soldering iron, please follow the following conditions:

*烙铁最高温度：350°C±5°C Maximum temperature of soldering iron: 350°C±5°C

*焊接时间：3~4秒 Welding time: 3~4 seconds

推荐焊接尺寸 Recommended welding dimensions

尺寸 Size	X	Y	a
Φ4	1.6	2.6	1.0
Φ5	1.6	3.0	1.4
Φ6.3	1.6	3.5	2.1
Φ8*6.5	1.6	3.5	2.1
Φ8	2.5	3.5	3.0
Φ10	2.5	4.0	4.0



● 焊接方法之适用性 Applicability of welding method

焊接方法 Welding method	回流焊 Reflow welding	烙铁 Soldering iron	波峰焊 Wave soldering
可行性 feasibility	可行 feasible	可行 feasible	不可行 Infeasible

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■ 寿命推算 Lifetime Estimation

1. 忽略纹波电流时的寿命推算

一般而言，铝电解电容器的寿命与周围的环境温度有很大的关系，其寿命可以由一下公式计算：

$$L = L_0 \times 2^{\frac{T_0 - T}{10}} \text{----- (1)}$$

与温度比较, 降压使用对电容器的寿命影响很小, 可忽略不计。

2. 考虑纹波电流时的寿命推算

叠加纹波电流，由于内部等效串联电阻（ESR）引起发热，从而影响电容器的使用寿命，产生的热量可由公式计算

$$P = [^2R] \dots (2)$$

其中, I : 纹波电流 (Arms)

R: 等效串联电阻 (Ω)

其中, ΔT : 电容器中心的温升 ($^{\circ}\text{C}$)

I: 纹波电流 (A_{rms})

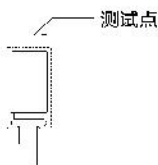
$$R: ESR \{ \Omega \}$$

A: 电容器的表面积 (cm²)

H: 散热系数 ($1.5 \sim 2.0 \times 10^{-3} \text{ W/cm}^2 \cdot ^\circ\text{C}$)

由于发热引起的温升 $\Delta T = \frac{I^2 R}{A \cdot H}$ ----- (3)

上面公式(3)显示电容器的温度上升与纹波电流的平方以及等效串联电阻ESR成正比,与电容器的表面积成反比。因此,纹波电流的大小决定着产生热量的大小,且影响其使用寿命。电容器的类型以及使用条件影响着 ΔT 值得大小,一般情况下 $\Delta T < 5^{\circ}\text{C}$ 。下图表示纹波电流引起的温升的测量点



测试结果:

(1) 考虑到环境温度和纹波电流时的寿命公司

其中, t_0 : 直流工作电压下的使用寿命

($K=2$, 纹波电流允许的范围内)

(K=4, 超过纹波电流的范围时)

To:最高使用温度

T: 工作温度

ΔT : 中心温升

$$L = L_0 \times 2^{(\frac{T_0}{10})^T} \times K^{(\frac{z}{10})} \text{ ---- (4)}$$

(2) 电容器工作在额定的纹波电流和上线温度时, 电容器的寿命可通过转换 (4) 式得到, 如下:

$$L = L_0 \times 2^{\left(\frac{T_0 - T}{10}\right)} \times K^{\left(\frac{T_0 - T}{10}\right)} \quad (5)$$

其中, L_0 : 工作在额定纹波电流和最高工作温度下的寿命 (h)

 ΔT_o : 最高工作温度下的电容器中心容许温升。

(3) 考虑纹波电流, 环境温度时可由 (5) 式得到下式

$$L = L_0 \times 2^{(\frac{T_0 - T}{T_0})} \times K^{[1 - (\frac{T}{T_0})^2]} \times \frac{T_0}{T_0} \quad (6)$$

其中, I_o : 最高工作温度下的额定纹波电流 (Arms)

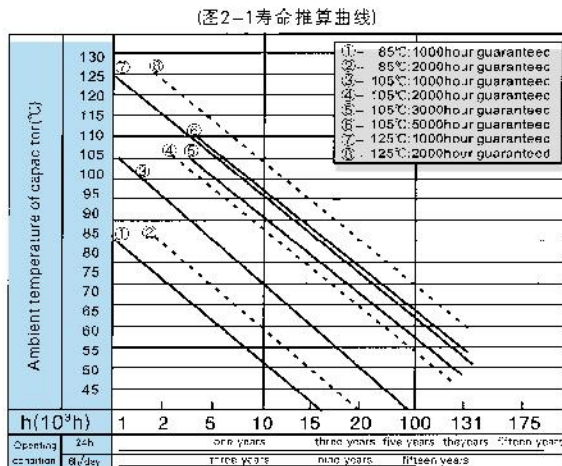
1: 疊加的紋波電流 (Arms)

由于直接测量电容器的内部温升存在着困难,

下表列出了表面温度和内部核心温度的换算关系：

直径	~10	12.5 ~ 16	18	22	25	30	35
中心/表面	1.1	1.2	1.25	1.3	1.4	1.6	1.65

寿命的推算公式，原则上适用于周围环境温度为140℃最高工作温度范围内，但由于封口材料的老化等因素，实际的推算寿命时间一般最大为15年。



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寿命推算 Lifetime Estimation

1. Lifetime estimation when ripple current is ignored

In general, the life of aluminum electrolytic capacitors has a great relationship with the surrounding ambient temperature, and its life can be calculated by the following formula:

$$L = L_0 \times 2^{\left(\frac{T_0 - T}{10}\right)} \quad \text{---- (1)} \quad \text{Where, L: life at temperature T}$$

L₀: lifetime at temperature T₀

Compared with temperature, the effect of buck use on the life of the capacitor is very small and can be ignored.

2. Lifetime estimation when ripple current is considered

The superimposed ripple current, due to the internal equivalent series resistance (ESR) causes heat, which affects the service life of the capacitor, and the heat generated can be calculated by the formula

$$P = I^2 R \quad \text{---- (2)}$$

Where, I: Ripple current (Arms)

R: equivalent series resistance (Ω)

where, ΔT: Temperature rise of capacitor center (°C)

I: Ripple Current (Arms)

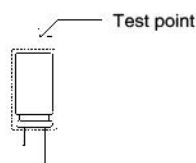
R: ESR(Q/A): Surface area of capacitor (cm²)

H: Heat dissipation coefficient (1.5 ~ 2.0x10⁻³W/cm² × °C)

A rise in temperature due to heat

$$\Delta T = \frac{I^2 R}{A \cdot H} \quad \text{---- (3)}$$

The above formula (3) shows that the temperature rise of the capacitor is directly proportional to the square of the ripple current and the equivalent series resistance ESR, and inversely proportional to the surface area of the capacitor. Therefore, the size of the ripple current determines the size of the heat generated and affects its service life. The type of capacitor and the conditions of use affect the value of ΔT, generally ΔT < 5°C. The figure below shows the measuring point of temperature rise caused by ripple current



Test results:

(1) The life of the company when taking into account ambient temperature and ripple current

$$L = L_0 \times 2^{\left(\frac{T_0 - T}{10}\right)} \times K^{\left(\frac{I - I_0}{I_0}\right)} \quad \text{---- (4)}$$

Where, L₀: service life under DC operating voltage

(K=2, within the allowable range of ripple current)

(K=4, beyond the ripple current range)

T₀: maximum operating temperature

T: operating temperature

ΔT: Central temperature rise

(2) When the capacitor works at the rated ripple current and on-line temperature, the life of the capacitor can be obtained by converting the formula (4), as follows:

$$L = L_0 \times 2^{\left(\frac{T_0 - T}{10}\right)} \times K^{\left(\frac{I - I_0}{I_0}\right)} \quad \text{---- (5)}$$

Where, L₀: life at rated ripple current and maximum operating temperature (h)

ΔT₀: Allowable temperature rise of capacitor center at maximum operating temperature.

(3) Consider ripple current, the ambient temperature can be obtained from formula (5)

$$L = L_0 \times 2^{\left(\frac{T_0 - T}{10}\right)} \times K^{\left[1 - \left(\frac{I}{I_0}\right)^2\right]} \times \frac{\Delta T_0}{10} \quad \text{---- (6)}$$

Where L₀: Rated ripple current (Arms) at maximum operating temperature

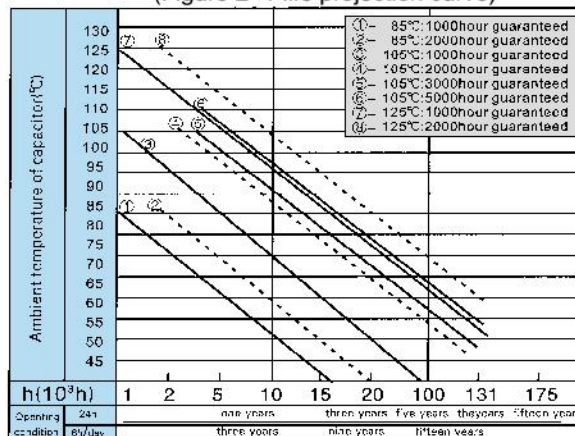
I: Superimposed Ripple current (Arms)

Because of the difficulty of directly measuring the internal temperature rise of capacitors, The following table shows the conversion relationship between surface temperature and internal core temperature:

直径 Diameter	~10	12.5 ~ 16	18	22	25	30	35
中心/表面 Center/surface	1.1	1.2	1.25	1.3	1.4	1.6	1.65

The life calculation formula is in principle applicable to the ambient temperature of 140 °C within the maximum working temperature range, but due to the aging of the sealing material and other factors, the actual estimated life time is generally up to 15 years.

(Figure 2-1 life projection curve)



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■ 片式铝电解电容器一般使用注意事项

Application guideline for V-CHIP aluminum electrolytic capacitors

A) 电路设计

- 1) 充分考虑电容器使用和安装条件在产品目录的规定范围内
- 2) 工作温度和施加的纹波电流应在产品目录的规定范围内
- 3) 在设计电路时, 应选择符合寿命要求的产品
- 4) 铝电解电容器是有极性的, 不应加反向电压或交流电压。对可能出现反向电压的电路, 应选择双极性电容器。

注意: 即使双极性电容器, 也不能直接用于纯交流电路

- 5) 对需要快速和频繁充放电的电路, 不应使用铝电解电容器, 而应选择特别设计的具有长寿命的电容器
- 6) 不应使用过载电压

① 直流电压与纹波电压叠加后的峰值电压不应超过额定工作电压

② 若2个以上电容器串联, 应确保施加电压低于额定值, 而且要并联一个平衡电阻, 以使每个电容器所加电压相等。

7) 电容器不能应用于下述环境条件下:

① (A) 电容器被暴露于水 (包括浓缩液)、盐水或油中。

(B) 周围环境中存在硫化氢、亚硫酸、亚硝酸、氯气、溴气、溴化甲烷、氨气等有毒气体。

(C) 周围环境中存在臭氧、紫外线及辐射。

② 严重的振动及机械冲击超过产品目录的规定范围。

振动的测试条件如下

振动频率范围: 10-55-10HZ

扫描频率: 10-55-10HZ/分钟

扫描方式: 对数 振幅或加速度: 1.5MM

振动方向: X、Y、Z方向

测试时间: 每个方向2小时

冲击一般不适用。

如有特殊要求, 请与我们联系。

8) 电解液主要化学溶剂及电解纸为易燃物, 且电解液导电。当电解液与PC板接触时, 可能会腐蚀PC板上的线路, 或造成短路, 以致产生烟或着火。因此在电容器封口下端不应有任何线路。

9) 设计线路板时应确保发热元器件不靠近铝电解电容器或PC板的另一面, 避免其正好在电容器的下面。

10) 设计线路板时应考虑到电容器的电性能可能随温度和频率的变化而变化。

11) 当2个以上电容器并联时, 应考虑到通过这些电容器的电流平衡。

12) 在双面线路板上安装电容器时, 电容器的安装位置应避免开多余的基板孔和过孔。

B) 安装

1) 一旦电容器经过安装及加载, 不要再试图用于其他线路板或其他用途。

2) 贮存超过2年的电容器, 其漏电流可能增大。若漏电流增大, 请使用1KΩ电阻做充电处理。

3) 在将电容器安装在PC板之前, 请确认其规格和极性。

4) 不要将电容器掉在地上, 或不要使用掉在地上的电容器。

5) 安装时请不要损伤电容器。

6) 请注意贴片机的吸头、产品检测夹具或对中装置对电容器的机械冲击。

A) Circuit Design

1) Please make sure the environmental and mounting conditions to which the capacitor will be exposed are within the conditions specified in catalogue.

2) Operating temperature and applied ripple shall be within RJ specification.

3) Appropriate capacitors which comply with the life requirement of the products should be selected when designing the circuit.

4) Aluminum electrolytic capacitors are polar. Make sure that no reverse voltage or AC voltage is applied to the capacitors. Please use bi-polar capacitors for a circuit that can possibly see reversed polarity.

Note: Even bi-polar capacitors cannot be used for AC voltage application.

5) ?Do not use aluminum electrolytic capacitors in a circuit that requires rapid and very frequent charge / discharge.

In this type of circuit, it is necessary to use a special design capacitor with extended life characteristics.

6) ?Do not apply excess voltage.

① Please pay attention to that the peak voltage, which is DC voltage overlapped by ripple current, will not exceed the rated voltage.

② In the case where more than 2 aluminum electrolytic capacitors are used in series, please make sure that applied voltage will be lower than rated voltage and the voltage will be applied to each capacitor equally by using a balancing resistor in parallel with the capacitor

7) Aluminum electrolytic capacitors shall not be used under the following environmental conditions:

① (a) Capacitors will be exposed to water (including condensation), brine or oil.

(b) Ambient conditions that include toxic gases such as hydrogen sulfide, sulfurous acid, nitrous acid, chlorine, bromine, methyl bromide, ammonium, etc.

(c) Ambient conditions that expose the capacitor to ozone, ultraviolet ray and radiation.

② Severe vibration and physical shock conditions that exceed specification.

Vibration test condition:

vibration frequency range: 10 ~ 55 ~ 10Hz

sweep rate: 10 ~ 55 ~ 10Hz/minute

sweep method: logarithmic??amplitude or acceleration: 1.5mm

direction of vibration : X, Y, Z direction

testing time: 2 hours per each direction

Shock is not applicable normally.

If a particular condition is required, please contact our sales office.

8) The main chemical solution of the electrolyte and the separator paper used in the capacitors are combustible. The electrolyte is conductive.

When it comes in contact with the PC board, there is a possibility of pattern corrosion or short circuit between the circuit pattern, which could result in smoking or catching fire. Do not locate any circuit pattern beneath the capacitor end seal.

9) Do not design a circuit board that the heat generating components are placed near the aluminum electrolytic capacitor or on the reverse side of PC board, if that just under the capacitor.

10) Electrical characteristics may vary depending on changes in temperature and frequency. Please consider this variation when you design circuits.

11) When you install more than 2 capacitors in parallel, please consider the balance of current flowing into the capacitors.

12) While mounting capacitors on double-side PC board, the capacitors should be away from those unnecessary base plate holes and connection holes.

B) Mounting

1) Once a capacitor has been assembled in the set and power applied, do not attempt to re-use the capacitor in other circuits or application.

2) Leakage current of the capacitors that have been stored for more than 2 years may increase. When leakage current has increased, please perform a voltage treatment using a 1kΩ resistor.

3) Please confirm specifications and polarity before installing capacitors on the PC board.

4) Do not drop capacitors on the floor, nor use a capacitor that was dropped.

5) Do not deform the capacitor during installation.

6) Please pay attention to the mechanical shock to the capacitor?by suction nozzle of the automatic insertion machine or automatic mounter, or by product checker, or by centering mechanism.

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7) 回流焊

①请遵守产品目录中的回流焊条件。

②当使用红外线加热时，请注意加热程度，因为红外线吸收率会随着电容器颜色和大小不同而改变。

8) 将电容器焊接在PC板后，不要倾斜或扭动电容器。

9) 不要抓住焊接后的电容器搬动PC板。

10) 不要让任何物品接触焊接后的电容器。如果PC板堆放储存，请确保PC板或其他零部件不触到电容器。

11) 焊接后的电容器不应受到任何已焊接PC板或其他元器件热辐射的影响。

12) 清洗：

①不能用卤化清洗剂清洗电容器。如必须使用卤化清洗剂，请与我们销售部门联系。

②推荐清洗方法：

使用范围：任何类型及规格

清洗方法：浸泡、超声波或其他方法的总清洗时间应在2分钟内。清洗剂温度应在40℃以下。清洗后，应将电容器与PC板一起用热风吹至少10分钟。热风温度应低于电容器工作温度。水洗后若不充分吹干，可能导致外观不良，如座板发胀等。

③避免使用破坏臭氧层的清洗剂以保护环境。

C) 安装后

1) 不要直接用手接触电容器正负极。

2) 不要在正负极之间用导体连接，也不要再在电容器及其附近溅撒导电液体，如酸碱溶液等。

3) 在使用环境中应避免溅上水或油，避免阳光直射、紫外线照射、辐射、有毒气体、振动或机械冲击。

D) 维护和检验

请定期检测安装在工业设备上的电容器。检测项目如下：

外观：明显缺陷，如防爆阀打开、电解液泄露等。

电性能：电容量、损耗角正切、漏电流等，具体数据参见产品目录和相关产品规格书。

E) 紧急情况

1) 若看见因防爆阀动作而产生的烟气，请关闭主开关或拨开离合器。

2) 若吸入气体或咽下电解液，应立即用水清洗口腔和喉咙。

3) 若皮肤沾上电解液，请用肥皂和水清洗干净。

F. 储存

1) 不要将电容器储存在温度和湿度高的地方。

储存环境应为温度：5℃-35℃，相对湿度：<50%，储存地点：室内2年。

2) 避免电容器的储存环境中有水、盐水或油。

4) 避免电容器暴露在臭氧、紫外线或辐射中。

G. 处置

请用下面任何一种方法处置电容器：

1) 在电容器壳体上开孔或将电容器压碎后焚烧。

2) 如不能进行焚烧，请交给废物处理机构进行填埋。

7) Reflow soldering

①Please follow? "Reflow Soldering Conditions" ?in catalogue.

②When an infrared heater is used, please pay attention to the extent of heating since the absorption rate of infrared will vary due to difference in the color and size of the capacitor.

8) Do not tilt lay down or twist the capacitor body after the capacitor are soldered to the PC board.

9) Do not carry the PC board by grasping the soldered capacitor.

10) Please do not allow anything to touch the capacitor after soldering. If PC boards are stored in stack, please make sure the PC board or other components away from the capacitor.

11) The capacitors shall not be effected by any radiated heat from the soldered PC board or other components after soldering.

12) Cleaning

①Do not clean capacitors with halogenated cleaning agent. However, if it is necessary to clean with halogenated cleaning agent, please contact our sales office.

②Recommended cleaning method

Applicable: Any type, any ratings

Cleaning conditions : Total cleaning time shall be within 2 minutes by immersion, ultrasonic or other methods. Temperature of the cleaning agents shall be 40℃ or below. After cleaning, capacitors should be dried by using hot air for the minimum 10 minutes along with the PC board mounted. Hot air temperature should be within the maximum operating temperature of the capacitor. Insufficient dryness after water rinse may cause appearance problems, such as bottom-plate bulge and etc.

③Avoid using ozone destructive substances as cleaning agents for protecting global environment.

C) IN THE EQUIPMENT

1) Do not directly touch terminal by hand.

2) Do not link positive terminal and negative terminal by conductor, nor spill conductible liquid such as alkaline or acidic solution on or near the capacitor.

3) Please make sure that the ambient conditions where the set is installed are free from spilling water or oil, direct sunlight, ultraviolet rays, radiation, poisonous gases, vibration or mechanical shock.

D) MAINTENANCE AND INSPECTION

Please periodically inspect the aluminum capacitors that are installed in industrial equipment. The following items should be checked:

Appearance: remarkable abnormality such as pressure relief vent opening, electrolyte leaking, etc.

Electrical characteristics: capacitance, dielectric loss tangent, leakage current and etc., which are specified in catalogue or alternate product specification.

E) IN AN EMERGENCY

1) If you see smoke due to operation of safety vent, please turn off the main switch or pull out the plug from the outlet.

2) If you breathe the gas or ingest the electrolyte, please wash out your mouth and throat with water immediately.

3) If your skin is exposed to the electrolyte, please wash it away using soap and water.

F. STORAGE

1) Do not keep capacitor in high temperature and high humidity atmosphere.

Storage conditions should be: Temperature: 5℃ ~ 35℃ Humidity: lower than 50% Place: Indoor two year

2) Avoid ambient conditions where capacitors are covered with water, brine or oil.

4) Avoid ambient conditions where capacitors are exposed to ozone, ultraviolet ray or radiation.

G. DISPOSAL

Please take either of the following methods in disposing capacitors.

1) Incinerate them after crushing capacitors or making a hole on the capacitor body.

2) If incineration is not applicable, hand them over to a waste disposal agent and have them buried in landfills.

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VS 铝电解电容器-贴片型

Aluminum electrolytic capacitor- SMD type

特长/用途

1. 85℃、2000小时寿命一般品
85℃, 2000 hours of life of general products
2. 贴片型大额定静电容量电容器
Chip type large rated electrostatic capacity capacitor
3. 适用于表面黏着之高密度PCB设计
Suitable for high density PCB design with surface adhesion
4. 符合ROHS 指令
Comply with ROHS directive



主要技术性能 Specifications

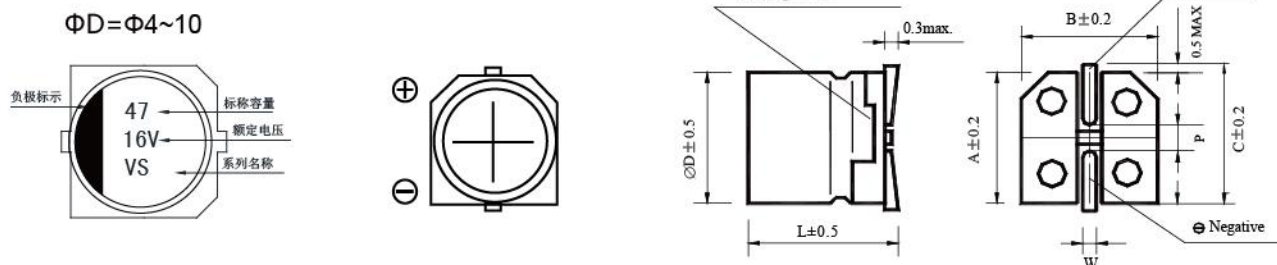
项目 Items	特性 Performance Characteristics								
工作温度 范围 Operating Temperature	-40~85℃								
额定电压范围 Rated Voltage Range	6.3V~100V DC								
标称容量范围 Nominal Capacitance Range	0.10~1500μF								
标称容量允许偏差 Nominal Capacitance	±20% (20℃ , 120Hz)								
漏电流 (20℃) Leakage Current	I≤0.01*CR*VR or 3(μA), 取较大者 (2 分钟) CR : 标称容量 (μF) VR : 额定电压 (V) I≤0.01*CR*VR or 3(μA) Whichever is greater(at 20℃,After 2 minutes) CR: Nominal Capacitance (μF) VR: Rated voltages (V)								
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	6.3	10	16	25	35	50	63	100
	tgδ	0.30	0.26	0.22	0.18	0.16	0.16	0.12	0.12
耐久性 Load Life	+85℃施加额定电压 2000 小时后, 恢复 16H 后测试, 电容器应满足以下要求: After 2000 hours' application of rated voltage at 85℃, the capacitor shall meet the following requirement for 16H:								
	电容量变化率 Capacitance Change	±30%初始值以内 Within ±30% of the initial value							
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 Not more than 300% of the initial specified value							
	漏电流 Leakage Current	≤ 初始规定值 Not more than the initial specified value							
高温贮存 Shelf Life	+85℃贮存 (不施加电压) 1000 小时后, 恢复 16H 后测试, 电容器应满足以下要求: After 1000 hours of storage at +85℃ (without voltage application), the capacitor should meet the following requirements for 16H:								
	电容量变化率 Capacitance Change	±30%初始值以内 Within ±30% of the initial value							
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 Not more than 300% of the initial specified value							
	漏电流 Leakage Current	≤ 2 倍初始规定值 ≤ 200% of initial specified value							
阻抗比 Impedance Ratio (120Hz) 低温特性 Low Temperature Stability	U _R (V)	6.3	10	16	25	35	50	63	100
	Z(-25℃)/Z(+20℃)	5	4	3	2	2	2	2	2
		10	8	6	4	3	3	3	3
耐焊接热 Resistance to Soldering Heat	在 250℃的条件下, 电容器在热板上保持 30 秒, 然后从热板上取出电容器, 让其在室温下恢复, 电容器应满足以下要求: The capacitors shall be kept on the hot plate maintained at 250℃ for 30 seconds. After removing from the hot plate and								
	电容量变化率 Capacitance Change	±10%初始值以内 Within ±10% of the initial value							
	损耗角正切 Dissipation Factor	≤ 初始规定值 Not more than the initial specified value							
	漏电流 Leakage Current	≤ 初始规定值 Not more than the initial specified value							

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外形图及尺寸表 Case Size Table

(其中Φ10铝壳底部有防爆阀)



单位 Unit: mm

尺寸(DXL)	4 × 5.4	5 × 5.4	6.3 × 5.4	6.3 × 7.7	8 × 10.5	10 × 10.5
A (底座宽Base width)	4.3	5.3	6.6	6.6	8.3	10.3
B (底座宽Base width)	4.3	5.3	6.6	6.6	8.3	10.3
C (引脚总长Total pin length)	5.0	6.0	7.2	7.2	9.1	11.1
P (脚距Foot spacing)	1	1.3	2.2	2.2	3.1	4.5
L (成品高度Height of finished product)	5.4	5.4	5.4	7.7	10.5	10.5
W (引脚宽度Pin width)	0.5-0.8				0.8-1.1	

标称电容量、额定电压、额定纹波电流与尺寸对应表

Nominal Capacitance, Rated Voltage, Rated Ripple Current and Case Size Table

Code代码 uF		6.3V		10V		16V		25V		35V		50V		63V		100V	
		0J		1A		1C		1E		1V		1H		1J		2A	
		D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)
0.1	0R1											4×5.4	3.2				
0.47	R47											4×5.4	6.8				
1	1R0											4×5.4	10	4×5.4	10	4×5.4	10
2.2	2R2											4×5.4	15	4×5.4	15	6.3×5.4	20
3.3	3R3											4×5.4	18			6.3×5.4	22
4.7	4R7							4×5.4	16	4×5.4	16	4×5.4	20	5×5.4	20	6.3×5.4	30
								5×5.4	22	6.3×5.4	30	6.3×5.4	22	6.3×5.4	30	6.3×7.7	30
10	100					4×5.4	27	4×5.4	25	4×5.4	25	5×5.4	30	6.3×5.4	35	6.3×7.7	35
						5×5.4	35	5×5.4	35	6.3×5.4	40	6.3×7.7	60				
22	220	4×5.4	30	4×5.4	27	4×5.4	27	5×5.4	43	5×5.4	43	6.3×5.4	50	6.3×7.7	62	8×10.5	90
				5×5.4	38	5×5.4	38	6.3×5.4	38	6.3×5.4	38					10×10.5	120
33	330	4×5.4	30	4×5.4	30	5×5.4	38	5×5.4	38	6.3×5.4	55	6.3×7.7	72	8×10.5	110	8×10.5	92
		5×5.4	32	5×5.4	38	6.3×5.4	50	6.3×5.4	50							10×10.5	122
47	470	4×5.4	35	5×5.4	45	5×5.4	35			6.3×5.4	62	6.3×7.7	85	8×10.5	130		
		5×5.4	45	6.3×5.4	62	6.3×5.4	62	6.3×5.4	62	6.3×7.7	72	8×10.5	130	10×10.5	172	10×10.5	125
100	101	5×5.4	57	5×5.4	55	6.3×5.4	70	6.3×7.7	120	6.3×7.7	120	8×10.5	192	10×10.5	205		
		6.3×5.4	72	6.3×5.4	70	6.3×7.7	120	8×10.5	190	10×10.5	210						
150	151	6.3×5.4	73	6.3×5.4	80	6.3×7.7	120	6.3×7.7	125	8×10.5	210	10×10.5	240				
220	221	6.3×5.4	90	6.3×5.4	90	6.3×7.7	135	8×10.5	260	8×10.5	260	10×10.5	320				
		6.3×7.7	135	6.3×7.7	135	8×10.5	260			10×10.5	330						
330	331	6.3×7.7	135	6.3×7.7	140			8×10.5	280	8×10.5	280						
				8×10.5	275	8×10.5	270	10×10.5	360	10×10.5	360						
470	471	6.3×7.7	155			8×10.5	285	10×10.5	400	10×10.5	410						
		8×10.5	285	8×10.5	285	10×10.5	350										
680	681	8×10.5	295	8×10.5	295	10×10.5	350										
1000	102	8×10.5	295														
		10×10.5	435														
1500	152	10×10.5	485	10×10.5	485												

I~ = Rated ripple current (mA) (85°C, 120Hz) I~ = 额定纹波电流 (mA) (85°C, 120Hz)

额定纹波电流频率修正系数

Frequency correction factor for ripple current

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

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VT 铝电解电容器-贴片型

Aluminum electrolytic capacitor- SMD type

特长/用途

- 105°C、1000~2000小时寿命标准品
105°C, 1000~2000 hours of life standard
- 贴片型大额定静电容量电容器
Chip type large rated electrostatic capacity capacitor
- 适用于表面黏着之高密度PCB设计
Suitable for high density PCB design with surface adhesion
- 符合ROHS 指令
Comply with ROHS directive



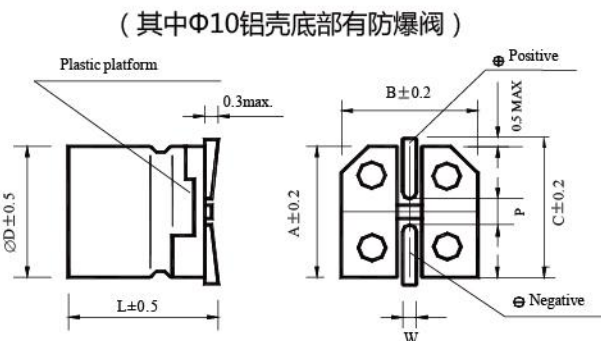
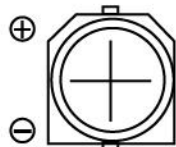
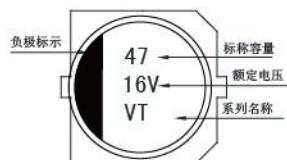
主要技术性能 Specifications

项目 Items	特性 Performance Characteristics									
工作温度 范围 Operating Temperature	-40~105℃									
额定电压范围 Rated Voltage Range	6.3~100V DC									
标称电容量范围 Nominal Capacitance	0.1~1500μF									
标称电容量允许偏差 Nominal Capacitance	±20% (20℃ , 120Hz)									
漏电流 (20℃) Leakage Current	I≤0.01*CR*VR or 3(μA), 取较大者 (2 分钟) CR : 标称电容量 (μF) VR : 额定电压 (V) I≤0.01*CR*VR or 3(μA) Whichever is greater(at 20℃,After 2 minutes) CR: Nominal Capacitance (μF) VR: Rated voltages (V)									
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	6.3	10	16	25	35	50	63	80	100
	tgδ	0.28	0.24	0.20	0.16	0.14	0.14	0.10	0.10	0.10
耐久性 Load Life	+105℃施加额定电压 1000~2000 小时后, 恢复 16H 后测试, 电容器应满足以下要求: After 1000~2000 hours' application of rated voltage at 105℃, the capacitor should meet the following requirements for 16H:									
	电容量变化率 Capacitance Change			±30%初始值以内 Within ±30% of the initial value						
	损耗角正切 Dissipation Factor			≤ 300%初始规定值 Not more than 300% of the initial specified value						
	漏电流 Leakage Current			≤ 初始规定值 Not more than the initial specified value						
高温贮存 Shelf Life	+105℃贮存 (不施加电压) 1000 小时后, 恢复 16H 后测试, 电容器应满足以下要求: After 1000 hours of storage at +105℃ (without voltage application), the capacitor should meet the following requirements for 16H:									
	电容量变化率 Capacitance Change			±30%初始值以内 Within ±30% of the initial value						
	损耗角正切 Dissipation Factor			≤ 300%初始规定值 Not more than 300% of the initial specified value						
	漏电流 Leakage Current			≤ 2 倍初始规定值 ≤ 200% of initial specified value						
低温特性 Low Temperature Stability 阻抗比 Impedance Ratio (120Hz)	U _R (V)	6.3	10	16	25	35	50	63	80	100
	Z(-25℃)/Z(+20℃)	5	3	3	3	2	2	2	2	2
	Z(-40℃)/Z(+20℃)	8	6	4	4	3	3	3	3	3
耐焊接热 Resistance to Soldering Heat	在 250℃的条件下, 电容器在热板上保持 30 秒, 然后从热板上取出电容器, 让其在室温下恢复, 电容器应满足以下要求: The capacitors shall be kept on the hot plate maintained at 250℃ for 30 seconds. After removing from the hot plate and									
	电容量变化率 Capacitance Change			±10%初始值以内 Within ±10% of the initial value						
	损耗角正切 Dissipation Factor			≤ 初始规定值 Not more than the initial specified value						
	漏电流 Leakage Current			≤ 初始规定值 Not more than the initial specified value						

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外形图及尺寸表 Case Size Table

 $\Phi D = \Phi 4 \sim 10$ 

单位 Unit: mm

尺寸(DXL)	4 × 5.4	5 × 5.4	6.3 × 5.4	6.3 × 7.7	8 × 10.5	10 × 10.5
A (底座宽Base width)	4.3	5.3	6.6	6.6	8.3	10.3
B (底座宽Base width)	4.3	5.3	6.6	6.6	8.3	10.3
C (引脚总长Total pin length)	5.0	6.0	7.2	7.2	9.1	11.1
P (脚距Foot spacing)	1.0	1.3	2.2	2.2	3.1	4.5
L (成品高度Height of finished product)	5.4	5.4	5.4	7.7	10.5	10.5
W (引脚宽度Pin width)	0.5-0.8				0.8-1.1	

标称电容量、额定电压、额定纹波电流与尺寸对应表

Nominal Capacitance, Rated Voltage, Rated Ripple Current and Case Size Table

μF	Code 代码	6.3V		10V		16V		25V	
		0J		1A		1C		1E	
		D × Lmm	I (mA)	D × Lmm	I (mA)	D × Lmm	I (mA)	D × Lmm	I (mA)
4.7	4R7							4 × 5.4	13
10	100					4 × 5.4	18	4 × 5.4	18
								5 × 5.4	20
22	220	4 × 5.4	22	4 × 5.4	20	4 × 5.4	20	5 × 5.4	30
					25		25	6.3 × 5.4	36
33	330	4 × 5.4	22	4 × 5.4	22	5 × 5.4	30	5 × 5.4	30
		5 × 5.4	27	5 × 5.4	30	6.3 × 5.4	44	6.3 × 5.4	44
47	470	4 × 5.4	25	5 × 5.4	30	5 × 5.4	30	6.3 × 5.4	48
		5 × 5.4	33	6.3 × 5.4	40	6.3 × 5.4	48		
56	560	5 × 5.4	33	6.3 × 5.4	40	6.3 × 5.4	52	6.3 × 5.4	58
68	680	5 × 5.4	36	6.3 × 5.4	50	6.3 × 5.4	56	6.3 × 5.4	65
		6.3 × 5.4	43						
100	101	5 × 5.4	39	5 × 5.4	39	6.3 × 5.4	60	6.3 × 7.7	95
		6.3 × 5.4	50	6.3 × 5.4	53	6.3 × 7.7	95		
150	151	6.3 × 5.4	55	6.3 × 5.4	62	6.3 × 7.7	100	6.3 × 7.7	100
								8 × 10.5	140
220	221	6.3 × 5.4	67	6.3 × 5.4	62	6.3 × 7.7	105	8 × 10.5	175
		6.3 × 7.7	105	6.3 × 7.7	105	8 × 10.5	150	10 × 10.5	220
330	331	6.3 × 7.7	105	6.3 × 7.7	110	8 × 10.5	195	8 × 10.5	220
		8 × 10.5	210	8 × 10.5	195	10 × 10.5	295	10 × 10.5	240
470	471	6.3 × 7.7	120	8 × 10.5	210	8 × 10.5	230	10 × 10.5	280
		8 × 10.5	210	10 × 10.5	260	10 × 10.5	295		
680	681	8 × 10.5	210	8 × 10.5	210	10 × 10.5	315		
1000	102	8 × 10.5	230	10 × 10.5	300	10 × 10.5	340		
		10 × 10.5	300						
1500	152	10 × 10.5	315	10 × 10.5	315				

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WV Code 代码 μF		35V		50V		63V		80		100V	
		1V		1H		1J		1K		2A	
		D×Lmm	I (mA)	D×Lmm	I (mA)	D×Lmm	I (mA)	D×Lmm	I (mA)	D×Lmm	I (mA)
0.1	0R1			4×5.4	0.7						
0.47	R47			4×5.4	3.5						
1	1R0			4×5.4	7	4×5.4	7			4×5.4	7
2.2	2R2			4×5.4	11	4×5.4	11			6.3×5.4	14
3.3	3R3	4×5.4	13	4×5.4	13	5×5.4	18	6.3×5.4	20	6.3×5.4	20
4.7	4R7	4×5.4	14	4×5.4	17	5×5.4	18	5×5.4	18	5×5.4	18
				5×5.4	18	6.3×5.4	21	6.3×5.4	21	6.3×5.4	21
10	100	4×5.4	14	5×5.4	21	6.3×5.4	34	6.3×5.4	34	6.3×7.7	50
		5×5.4	21	6.3×5.4	27	6.3×7.7	50	6.3×7.7	50	8×10.5	77
22	220	5×5.4	30	6.3×5.4	42	6.3×7.7	70	6.3×7.7	70	8×10.5	120
		6.3×5.4	38	6.3×7.7	55	8×10.5	98	8×10.5	98	10×10.5	180
33	330	6.3×5.4	42	6.3×7.7	65	6.3×7.7	60	8×10.5	112	10×10.5	135
		6.3×7.7	60	8×10.5	112	8×10.5	112				
47	470	6.3×5.4	50	6.3×7.7	70	8×10.5	120	8×10.5	120	10×10.5	140
		6.3×7.7	70	8×10.5	120	10×10.5	150	10×10.5	150		
56	560	6.3×7.7	56	6.3×7.7	70	10×10.5	170	10×10.5	170		
68	680	6.3×7.7	56	8×10.5	120	10×10.5	190	10×10.5	190		
100	101	6.3×7.7	95	8×10.5	140	10×10.5	190	10×10.5	190		
		8×10.5	120	10×10.5	170						
150	151	8×10.5	155	10×10.5	170						
220	221	8×10.5	190	10×10.5	220						
		10×10.5	220								
330	331	10×10.5	245								
470	471	10×10.5	280								

I~ = Rated ripple current (mA) (105°C, 120Hz) I~ = 额定纹波电流 (mA) (105°C, 120Hz)

额定纹波电流频率修正系数 Frequency correction factor for ripple current

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

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VH 铝电解电容器-贴片型

Aluminum electrolytic capacitor- SMD type

特点 Features

- 105°C、2000~3000小时寿命标准品
105°C, 2000~3000 hours of life standard
- 贴片型大额定静电容量电容器
Chip type large rated electrostatic capacity capacitor
- 适用于表面黏着之高密度PCB设计
Suitable for high density PCB design with surface adhesion
- 符合ROHS 指令
Comply with ROHS directive



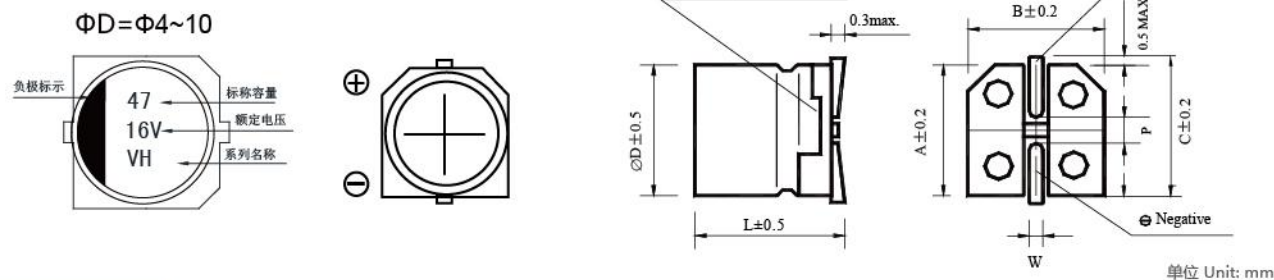
主要技术性能 Specifications

项目 Items	特性 Performance Characteristics									
工作温度 范围 Operating Temperature	-55~+105℃									
额定电压范围 Rated Voltage Range	6.3~100V DC									
标称容量范围 Nominal Capacitance	1~1500μF									
标称容量允许偏差 Nominal Capacitance	±20% (20℃ , 120Hz)									
漏电流 (20℃) Leakage Current	I≤0.01*CR*VR or 3(μA), 取较大者 (2 分钟) CR : 标称容量 (μF) VR : 额定电压 (V) I≤0.01*CR*VR or 3(μA) Whichever is greater(at 20℃,After 2 minutes) CR: Nominal Capacitance (μF) VR: Rated voltages (V)(at 20℃, after 2 minutes)									
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	UR (V)	6.3	10	16	25	35	50	63	80	100
	tgδ	0.26	0.22	0.18	0.14	0.12	0.12	0.10	0.08	0.08
耐久性 Load Life	+105℃施加额定电压 2000-3000H 小时后, 恢复 16H 后测试, 电容器应满足以下要求: After 2000-3000 hours' application of rated voltage at 105℃, the capacitor should meet the following requirements for 16H:									
	电容量变化率 Capacitance Change			±30%初始值以内 Within ±30% of the initial value						
	损耗角正切 Dissipation Factor			≤ 300%初始规定值 Not more than 300% of the initial specified value						
	漏电流 Leakage Current			≤ 初始规定值 Not more than the initial specified value						
高温贮存 Shelf Life	+105℃贮存 (不施加电压) 1000 小时后, 恢复 16H 后测试, 电容器应满足以下要求: After 1000 hours of storage at +105℃ (without voltage application), the capacitor should meet the following requirements for 16H:									
	电容量变化率 Capacitance Change			±30%初始值以内 Within ±30% of the initial value						
	损耗角正切 Dissipation Factor			≤ 300%初始规定值 Not more than 300% of the initial specified value						
	漏电流 Leakage Current			≤ 2 倍初始规定值 ≤ 200% of initial specified value						
低温特性 Low Temperature Stability 阻抗比 Impedance Ratio (120Hz)	UR (V)	6.3	10	16	25	35	50	63	80	100
	Z(-25℃)/Z(+20℃)	4	4	3	2	2	2	2	3	3
	Z(-55℃)/Z(+20℃)	12	8	6	4	3	3	3	3	3
耐焊接热 Resistance to Soldering Heat	在 250℃的条件下, 电容器在热板上保持 30 秒, 然后从热板上取出电容器, 让其在室温下恢复, 电容器应满足以下要求: The capacitors shall be kept on the hot plate maintained at 250℃ for 30 seconds. After removing from the hot plate and									
	电容量变化率 Capacitance Change			±10%初始值以内 Within ±10% of the initial value						
	损耗角正切 Dissipation Factor			≤ 初始规定值 Not more than the initial specified value						
	漏电流 Leakage Current			≤ 初始规定值 Not more than the initial specified value						

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外形图及尺寸表 Case Size Table



尺寸(DXL)	4 × 5.4	5 × 5.4	6.3 × 5.4	6.3 × 7.7	8 × 10.5	10 × 10.5
A (底座宽Base width)	4.3	5.3	6.6	6.6	8.3	10.3
B (底座宽Base width)	4.3	5.3	6.6	6.6	8.3	10.3
C (引脚总长Total pin length)	5.0	6.0	7.2	7.2	9.1	11.1
P (脚距Foot spacing)	1.0	1.3	2.2	2.2	3.1	4.5
L (成品高度Height of finished product)	5.4	5.4	5.4	7.7	10.5	10.5
W (引脚宽度Pin width)	0.5-0.8				0.8-1.1	

标称电容量、额定电压、额定纹波电流与尺寸对应表
Nominal Capacitance, Rated Voltage, Rated Ripple Current and Case Size Table

μF	Code 代码	6.3V		10V		16V		25V	
		0J		1A		1C		1E	
		D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)
4.7	4R7							4×5.4	18
10	100					4×5.4	21	4×5.4	19
								5×5.4	25
22	220			4×5.4	25	4×5.4	25	5×5.4	30
						5×5.4	32	6.3×5.4	41
33	330					5×5.4	33	5×5.4	35
				5×5.4	38	6.3×5.4	49	6.3×5.4	49
47	470	4×5.4	30	5×5.4	35	5×5.4	37	6.3×5.4	53
		5×5.4	38	6.3×5.4	46	6.3×5.4	52		
68	680			6.3×5.4	70	6.3×5.4	70	6.3×5.4	70
100	101	5×5.4	44	5×5.4	44	6.3×5.4	67	6.3×7.7	97
		6.3×5.4	56	6.3×5.4	59	6.3×7.7	97		
150	151	6.3×5.4	60	6.3×5.4	70	6.3×7.7	105	6.3×7.7	105
220	221	6.3×5.4	73	6.3×7.7	114	6.3×7.7	114	8×10.5	187
		6.3×7.7	112			8×10.5	187		
330	331	6.3×7.7	114	6.3×7.7	116	8×10.5	205	8×10.5	232
								10×10.5	252
470	471	6.3×7.7	130	8×10.5	218	8×10.5	244	10×10.5	290
		8×10.5	218			10×10.5	305		
680	681	8×10.5	220	8×10.5	225	10×10.5	326		
1000	102	8×10.5	240	10×10.5	325	10×10.5	350		
1500	152	10×10.5	325						

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μF	Code 代码	35V		50V		63V		80		100V	
		1V		1H		1J		1K		2A	
		D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)
1	1R0			4×5.4	12						
2.2	2R2			4×5.4	16					6.3×5.4	19
3.3	3R3	4×5.4	18	4×5.4	18					6.3×5.4	26
4.7	4R7	4×5.4	19	4×5.4	18	5×5.4	21			6.3×5.4	27
				5×5.4	21	6.3×5.4	26				
10	100	4×5.4	19	5×5.4	22	6.3×5.4	30	6.3×5.4	30	6.3×7.7	45
		5×5.4	26	6.3×5.4	30	6.3×7.7	45	6.3×7.7	45	8×10.5	84
22	220	5×5.4	32	6.3×5.4	47	6.3×7.7	57	6.3×7.7	57	8×10.5	95
		6.3×5.4	44	6.3×7.7	53	8×10.5	105	8×10.5	105	10×10.5	132
33	330	6.3×5.4	50	6.3×7.7	67	8×10.5	120	8×10.5	120	10×10.5	140
47	470	6.3×5.4	60	6.3×7.7	70	8×10.5	130	8×10.5	130	10×10.5	152
		6.3×7.7	80	8×10.5	130	10×10.5	150	10×10.5	150		
68	680	6.3×7.7	84								
100	101	6.3×7.7	97	8×10.5	150	10×10.5	205	10×10.5	150		
		8×10.5	130	10×10.5	182						
150	151	8×10.5	162	10×10.5	182						
220	221	8×10.5	200	10×10.5	235						
		10×10.5	235								
330	331	10×10.5	252								
470	471	10×10.5	290								

↓
I~ = Rated ripple current (mA) (105°C, 120Hz) I~ = 额定纹波电流 (mA) (105°C, 120Hz)

额定纹波电流频率修正系数 Frequency correction factor for ripple current

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

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VD 铝电解电容器-贴片型

Aluminum electrolytic capacitor- SMD type

特点 Features

- 105°C、1000-2000 小时寿命、宽温低阻抗品
105°C, 1000-2000 hours of life, wide temperature and low impedance products
- 贴片型大额定静电容量电容器
Chip type large rated electrostatic capacity capacitor
- 适用于表面黏着之高密度PCB设计
Suitable for high density PCB design with surface adhesion
- 符合ROHS 指令
Comply with ROHS directive



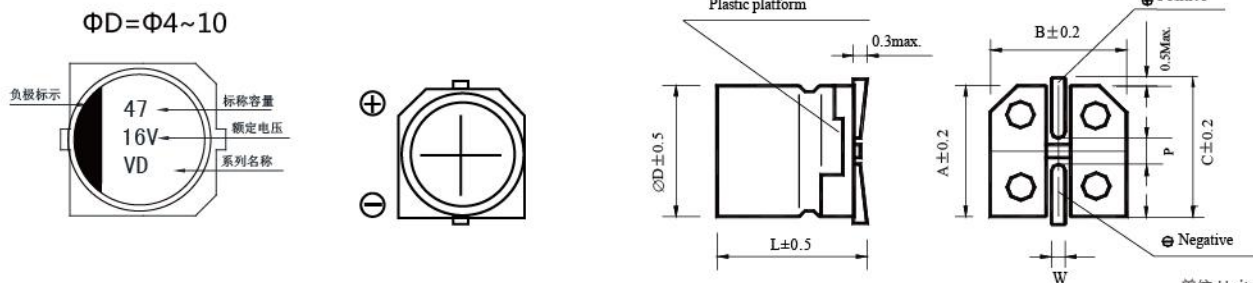
主要技术性能 Specifications

项目 Items	特性 Performance Characteristics									
工作温度 范围 Operating Temperature	-55 ~ +105℃									
额定电压范围 Rated Voltage Range	6.3V~100VDC									
标称容量范围 Nominal Capacitance	1~1500μF									
标称容量允许偏差 Nominal Capacitance	±20% (20℃ , 120Hz)									
漏电流 (20℃) Leakage Current	I≤0.01*CR*VR or 3(μA), 取较大者 (2 分钟) CR : 标称容量 (μF) VR : 额定电压 (V) I≤0.01*CR*VR or 3(μA) Whichever is greater(at 20℃,After 2 minutes) CR: Nominal Capacitance (μF) VR: Rated voltages (V)(at 20℃, after 2 minutes)(at 20℃, after 2 minutes)									
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	6.3	10	16	25	35	50	63	80	100
	tgδ	0.24	0.20	0.16	0.14	0.12	0.12	0.10	0.08	0.08
耐久性 Load Life	+105℃施加额定电压1000-2000小时后, 恢复16H后测试, 电容器应满足以下要求: After1000-2000hours' applicationofratedvoltageat105℃,the capacitor should meet the following requirements for 16H:									
	电容量变化率 Capacitance Change			±30%初始值以内 Within ±30% of the initial value						
	损耗角正切 Dissipation Factor			≤ 300%初始规定值 Not more than 300% of the initial specified value						
	漏电流 Leakage Current			≤ 初始规定值 Not more than the initial specified value						
高温贮存 Shelf Life	+105℃贮存 (不施加电压) 1000 小时后, 恢复 16H 后测试, 电容器应满足以下要求: After 1000 hours of storage at +105℃ (without voltage application), the capacitor should meet the following requirements for 16H:									
	电容量变化率 Capacitance Change			±30%初始值以内 Within ±30% of the initial value						
	损耗角正切 Dissipation Factor			≤ 300%初始规定值 Not more than 300% of the initial specified value						
	漏电流 Leakage Current			≤ 2 倍初始规定值 ≤ 200% of initial specified value						
低温特性 Low Temperature Stability 阻抗比 Impedance Ratio (120Hz)	U _R (V)	6.3	10	16	25	35	50	63	80	100
	Z(-25℃)/Z(+20℃)	4	3	2	2	2	2	2	2	2
	Z(-55℃)/Z(+20℃)	10	6	5	4	3	3	3	3	3
耐焊接热 Resistance to Soldering Heat	在 250℃的条件下, 电容器在热板上保持 30 秒, 然后从热板上取出电容器, 让其在室温下恢复, 电容器应满足以下要求: The capacitors shall be kept on the hot plate maintained at 250℃ for 30 seconds. After removing from the hot plate and									
	电容量变化率 Capacitance Change			±10%初始值以内 Within ±10% of the initial value						
	损耗角正切 Dissipation Factor			≤ 初始规定值 Not more than the initial specified value						
	漏电流 Leakage Current			≤ 初始规定值 Not more than the initial specified value						

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外形图及尺寸表 Case Size Table

(其中 $\Phi 10$ 铝壳底部有防爆阀)

单位 Unit: mm

尺寸(DXL)	4×5.4	5×5.4	6.3×5.4	6.3×7.7	8×10.5	10×10.5
A (底座宽Base width)	4.3	5.3	6.6	6.6	8.3	10.3
B (底座宽Base width)	4.3	5.3	6.6	6.6	8.3	10.3
C (引脚总长Total pin length)	5.0	6.0	7.2	7.2	9.1	11.1
P (脚距Foot spacing)	1.0	1.3	2.2	2.2	3.1	4.5
L (成品高度Height of finished product)	5.4	5.4	5.4	7.7	10.5	10.5
W (引脚宽度Pin width)	0.5-0.8				0.8-1.1	

标称电容量、额定电压、额定纹波电流与尺寸对应表

Nominal Capacitance, Rated Voltage, Rated Ripple Current and Case Size Table

WV uF Code 代码		6.3			10			16		
		0J			1A			1C		
		D×Lmm	ESR(Ω)	I(mA)	D×Lmm	ESR(Ω)	I(mA)	D×Lmm	ESR(Ω)	I(mA)
10	100							4×5.4	3.00	60
15	150							4×5.4	3.00	60
								5×5.4	1.80	110
22	220	4×5.4	3.00	60	4×5.4	3.00	60	4×5.4	3.00	60
					5×5.4	1.80	110	5×5.4	1.80	110
33	330	4×5.4	3.00	60	4×5.4	3.00	60	5×5.4	1.80	110
		5×5.4	1.80	110	5×5.4	1.80	110	6.3×5.4	0.85	180
47	470	4×5.4	3.00	60	4×5.4	3.00	60	5×5.4	1.80	110
		5×5.4	1.80	110	5×5.4	1.80	110	6.3×5.4	0.85	180
68	680	5×5.4	1.80	110	5×5.4	1.80	110	6.3×5.4	0.85	180
		6.3×5.4	0.85	180	6.3×5.4	0.85	180	6.3×7.7	0.60	230
100	101	5×5.4	1.80	110	5×5.4	1.80	110	6.3×5.4	0.85	180
		6.3×5.4	0.85	180	6.3×5.4	0.85	180	6.3×7.7	0.60	230
150	151	6.3×5.4	1.00	140	6.3×5.4	0.85	180	6.3×7.7	0.60	230
		6.3×7.7	0.60	230	6.3×7.7	0.60	230	8×10.5	0.30	450
220	221	6.3×5.4	0.85	180	6.3×5.4	0.85	180	6.3×7.7	0.60	230
		6.3×7.7	0.60	230	6.3×7.7	0.60	230	8×10.5	0.40	450
330	331	6.3×7.7	0.60	230	6.3×7.7	0.60	230	8×10.5	0.40	450
		8×10.5	0.40	450	8×10.5	0.30	450	10×10.5	0.20	550
470	471	6.3×7.7	0.60	230	6.3×7.7	0.60	230	8×10.5	0.40	450
		8×10.5	0.40	450	8×10.5	0.40	450	10×10.5	0.20	700
680	681	8×10.5	0.40	450	10×10.5	0.20	700	10×10.5	0.20	700
1000	102	8×10.5	0.40	450	10×10.5	0.20	700	10×10.5	0.20	700
		10×10.5	0.20	700						
1500	152	10×10.5	0.20	700						

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uF	WV Code 代码	25			35			50		
		1E			1V			1H		
		DxLmm	ESR(Ω)	I(mA)	DxLmm	ESR(Ω)	I(mA)	DxLmm	ESR(Ω)	I(mA)
1	1R0							4×5.4	5.00	30
2.2	2R2							4×5.4	5.00	30
3.3	3R3							4×5.4	5.00	30
4.7	4R7	4×5.4	3.00	65	4×5.4	3.00	65	4×5.4	5.00	30
6.8	6R8	4×5.4	3.00	65	5×5.4	1.80	110	5×5.4	3.00	65
10	100	4×5.4	3.00	65	4×5.4	3.00	65	5×5.4	3.00	65
		5×5.4	1.80	110	5×5.4	1.80	110	6.3×5.4	2.00	70
22	220	5×5.4	1.80	110	5×5.4	1.80	110	6.3×5.4	2.00	70
		6.3×5.4	1.00	180	6.3×5.4	1.00	110	6.3×7.7	1.00	120
33	330	5×5.4	1.80	110	6.3×5.4	0.85	180	6.3×7.7	1.00	120
		6.3×5.4	1.00	180	6.3×7.7	0.55	230			
47	470	6.3×5.4	1.00	180	6.3×5.4	0.85	180	6.3×7.7	1.00	120
		6.3×7.7	0.60	230	6.3×7.7	0.60	230	8×10.5	0.60	300
68	680	6.3×5.4	0.85	180	6.3×7.7	0.60	230	8×10.5	0.60	300
		6.3×7.7	0.60	230						
100	101	6.3×7.7	0.60	230	6.3×7.7	0.60	230	8×10.5	0.60	350
					8×10.5	0.40	450	10×10.5	0.30	500
150	151	8×10.5	0.40	450	8×10.5	0.40	450	10×10.5	0.30	500
220	221	8×10.5	0.40	450	8×10.5	0.40	450	10×10.5	0.30	500
					10×10.5	0.20	700			
330	331	8×10.5	0.40	450						
		10×10.5	0.20	700	10×10.5	0.20	700			
470	471	10×10.5	0.20	700	10×10.5	0.20	700			

uF	WV Code 代码	63			80			100		
		1J			1K			2A		
		DxLmm	ESR(Ω)	I(mA)	DxLmm	ESR(Ω)	I(mA)	DxLmm	ESR(Ω)	I(mA)
10	100	6.3×5.4	1.80	75	6.3×7.7	2.40	60	6.3×7.7	2.40	60
22	220	6.3×7.7	1.20	120	8×10.5	1.30	130	8×10.5	1.30	130
33	330	8×10.5	0.75	230	10×10.5	0.70	200	10×10.5	0.70	200
47	470	8×10.5	0.65	250	10×10.5	0.70	200			
100	101	10×10.5	0.35	400						

• Case size $\varnothing D \times L$ (mm), ripple current (mA rms) at 105° C 100KHz, Impedance (Ω) at 25° C 100KHz

• 尺寸 $\varnothing D \times L$ (mm), 纹波电流 (mA rms) 于 105° C 100KHz; 阻抗值 (Ω) 于 25° C 100KHz

额定纹波电流频率修正系数 Frequency correction factor for ripple current

Frequency 频率	50Hz	120Hz	1KHz	10KHz	100KHz
Coefficient 系数	0.35	0.50	0.85	0.95	1.00

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VB 铝电解电容器-贴片型

Aluminum electrolytic capacitor- SMD type

特点 Features

- 105°C、1000-2000 小时寿命、宽温极低阻抗品
105°C, 1000-2000 hours of life, wide temperature very low impedance products
- 贴片型大额定静电容量电容器
Chip type large rated electrostatic capacity capacitor
- 适用于表面黏着之高密度PCB设计
Suitable for high density PCB design with surface adhesion
- 符合ROHS 指令
Comply with ROHS directive



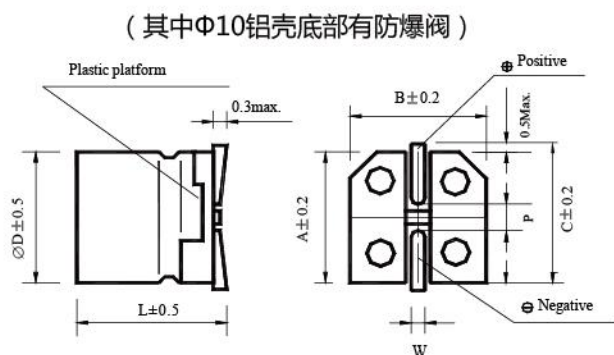
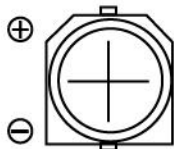
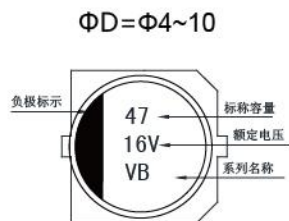
主要技术性能 Specifications

项目 Items	特性 Performance Characteristics									
工作温度 范围 Operating Temperature	-55~+105℃									
额定电压范围 Rated Voltage Range	6.3~100V DC									
标称电容量范围 Nominal Capacitance	4.7~1500μF									
标称电容量允许偏差 Nominal Capacitance	±20% (20℃ , 120Hz)									
漏电流 (20℃) Leakage Current	I≤0.01*CR*VR or 3(μA), 取较大者 (2 分钟) CR : 标称电容量 (μF) VR : 额定电压 (V) I≤0.01*CR*VR or 3(μA) Whichever is greater(at 20℃,After 2 minutes) CR: Nominal Capacitance (μF) VR: Rated voltages (V)(at 20℃, after 2 minutes)(at 20℃, after 2 minutes)									
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	6.3	10	16	25	35	50	63	80	100
	tgδ	0.24	0.20	0.14	0.16	0.14	0.12	0.12	0.07	0.08
耐久性 Load Life	+105℃施加额定电压 2000 小时后, 恢复 16H 后测试, 电容器应满足以下要求: After 1000- 2000 hours' application of rated voltage at 105℃, the capacitor should meet the following requirements for 16H:									
	电容量变化率 Capacitance Change		±30%初始值以内 Within ±30% of the initial value							
	损耗角正切 Dissipation Factor		≤ 300%初始规定值 Not more than 300% of the initial specified value							
	漏电流 Leakage Current		≤ 初始规定值 Not more than the initial specified value							
高温贮存 Shelf Life	+105℃贮存 (不施加电压) 1000 小时后, 恢复 16H 后测试, 电容器应满足以下要求: After 1000 hours of storage at +105℃ (without voltage application), the capacitor should meet the following requirements for 16H:									
	电容量变化率 Capacitance Change		±30%初始值以内 Within ±30% of the initial value							
	损耗角正切 Dissipation Factor		≤ 300%初始规定值 Not more than 300% of the initial specified value							
	漏电流 Leakage Current		≤ 2 倍初始规定值 ≤ 200% of initial specified value							
低温特性 Low Temperature Stability 阻抗比 Impedance Ratio (120Hz)	U _R (V)	6.3	10	16	25	35	50	63	80	100
	Z(-25℃)/Z(+20℃)	4	3	2	2	2	2	2	2	2
	Z(-55℃)/Z(+20℃)	8	5	4	3	3	3	3	3	3
耐焊接热 Resistance to Soldering Heat	在 250℃的条件下, 电容器在热板上保持 30 秒, 然后从热板上取出电容器, 让其在室温下恢复, 电容器应满足以下要求: The capacitors shall be kept on the hot plate maintained at 250℃ for 30 seconds. After removing from the hot plate and									
	电容量变化率 Capacitance Change		±10%初始值以内 Within ±10% of the initial value							
	损耗角正切 Dissipation Factor		≤ 初始规定值 Not more than the initial specified value							
	漏电流 Leakage Current		≤ 初始规定值 Not more than the initial specified value							

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外形图及尺寸表 Case Size Table



单位 Unit: mm

尺寸(DXL)	4×5.4	5×5.4	6.3×5.4	6.3×7.7	8×10.5	10×10.5
A (底座宽Base width)	4.3	5.3	6.6	6.6	8.3	10.3
B (底座宽Base width)	4.3	5.3	6.6	6.6	8.3	10.3
C (引脚总长Total pin length)	5.0	6.0	7.2	7.2	9.1	11.1
P (脚距Foot spacing)	1	1.3	2.2	2.2	3.1	4.5
L (成品高度Height of finished product)	5.4/5.8	5.4/5.8	5.4/5.8	7.7	10.5	10.5
W (引脚宽度Pin width)	0.5-0.8				0.8-1.1	

标称电容量、额定电压、额定纹波电流与尺寸对应表
Nominal Capacitance, Rated Voltage, Rated Ripple Current and Case Size Table

uF	Code 代码	6.3			10			16		
		0J			1A			1C		
		D×Lmm	ESR(Ω)	I(mA)	D×Lmm	ESR(Ω)	I(mA)	D×Lmm	ESR(Ω)	I(mA)
10	100							4×5.4	1.80	80
22	220	4×5.4	1.80	80	4×5.4	1.80	80	4×5.4	1.80	80
					5×5.4	0.76	150	5×5.4	0.76	150
47	470	4×5.4	1.50	90	5×5.4	0.76	150	5×5.4	0.76	150
		5×5.4	0.76	150	6.3×5.4	0.44	230	6.3×5.4	0.44	230
100	101	5×5.4	0.76	150	5×5.4	0.76	150	6.3×5.4	0.44	230
		6.3×5.4	0.44	230	6.3×5.4	0.44	230	6.3×7.7	0.34	280
220	221	6.3×5.4	0.44	230	6.3×7.7	0.34	280	6.3×7.7	0.34	280
		6.3×7.7	0.34	280	8×10.5	0.17	600	8×10.5	0.17	600
330	331	6.3×7.7	0.34	280	6.3×7.7	0.25	400	8×10.5	0.17	600
								10×10.5	0.10	850
470	471	6.3×7.7	0.25	400	6.3×7.7	0.25	400	8×10.5	0.17	600
680	681	8×10.5	0.17	600	10×10.5	0.10	850	10×10.5	0.10	850
1000	102	8×10.5	0.17	600	10×10.5	0.10	850	10×10.5	0.10	850
1500	152	10×10.5	0.10	850						

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uF	WV Code代码	25			35			50		
		1E			1V			1H		
		D×Lmm	ESR(Ω)	I(mA)	D×Lmm	ESR(Ω)	I(mA)	D×Lmm	ESR(Ω)	I(mA)
4.7	4R7				4×5.4	2.50	70	4×5.4	5.00	30
10	100	4×5.4	1.80	80	5×5.4	0.76	150	5×5.4	1.60	80
								6.3×5.4	1.30	160
22	220	5×5.4	0.76	150	5×5.4	0.76	150	6.3×5.4	1.00	150
					6.3×5.4	0.44	230			
47	470	6.3×5.4	0.44	230	6.3×5.4	0.44	230	6.3×7.7	0.75	180
					6.3×7.7	0.34	280			
100	101	6.3×7.7	0.34	280	6.3×7.7	0.34	280	8×10.5	0.36	300
					8×10.5	0.17	600	10×10.5	0.18	550
220	221	8×10.5	0.17	600	8×10.5	0.17	600	10×10.5	0.18	670
					10×10.5	0.10	850			
330	331	8×10.5	0.17	600	10×10.5	0.10	850			
		10×10.5	0.10	850						
470	471	10×10.5	0.10	850	10×10.5	0.10	850			

uF	WV Code代码	63			80			100		
		1J			1K			2A		
		D×Lmm	ESR(Ω)	I(mA)	D×Lmm	ESR(Ω)	I(mA)	D×Lmm	ESR(Ω)	I(mA)
4.7	4R7	5×5.4	3	50						
10	100	6.3×5.4	1.80	75	6.3×7.7	2.40	60	6.3×7.7	2.40	60
22	220	6.3×7.7	1.20	120	8×10.5	1.30	130	8×10.5	1.30	130
47	470	8×10.5	0.65	250	10×10.5	0.70	200	10×10.5	0.70	200
100	101	10×10.5	0.35	400						

·Case size $\varnothing D \times L$ (mm), ripple current (mA rms) at 105°C 100KHz, Impedance (Ω) at 25°C 100KHz
·尺寸 $\varnothing D \times L$ (mm), I纹波电流(mA rms)于105°C 100KHz;阻抗值(Ω)于 25°C 100KHz

额定纹波电流频率修正系数 Frequency correction factor for ripple current

Frequency 频率	50Hz	120Hz	1KHz	10KHz	≥100KHz
Coefficient 系数	0.35	0.50	0.85	0.95	1.00

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VK 铝电解电容器-贴片型

Aluminum electrolytic capacitor- SMD type

特点 Features

- 105°C、2000 小时寿命、低漏电品
105°C, 2000 hours of life, low leakage products
- 贴片型大额定静电容量电容器
Chip type large rated electrostatic capacity capacitor
- 适用于表面黏着之高密度PCB设计
Suitable for high density PCB design with surface adhesion
- 符合ROHS 指令
Comply with ROHS directive



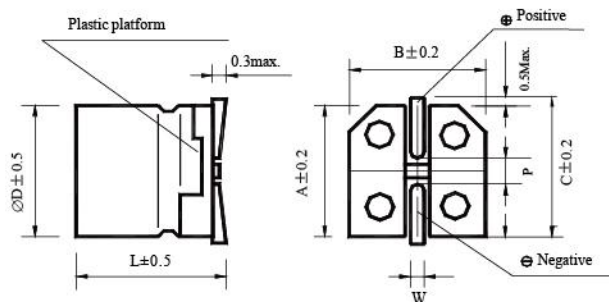
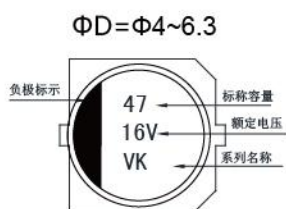
主要技术性能 Specifications

项目 Items	特性 Performance Characteristics						
工作温度 范围 Operating Temperature	-55~+105℃						
额定电压范围 Rated Voltage Range	6.3V~50VDC						
标称电容量范围 Nominal Capacitance	1~220μF						
标称电容量允许偏差 Nominal Capacitance	±20% (20℃ , 120Hz)						
漏电流 (20℃) Leakage Current	I≤0.002*CR*VR or 0.4(μA), 取较大者 (2 分钟) CR : 标称电容量 (μF) VR : 额定电压 (V) I≤0.002*CR*VR or 0.4(μA) Whichever is greater(at 20℃,After 2 minutes) CR: Nominal Capacitance (μF) VR: Rated voltages (V)						
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	6.3	10	16	25	35	50
	tgδ	0.30	0.24	0.20	0.18	0.16	0.14
耐久性 Load Life	+105℃施加额定电压 2000 小时, 恢复 16H 后测试, 电容器应满足以下要求: After 2000 hours' application of rated voltage at 105℃ and then resumed 16 hours, the capacitor should meet the following requirements for 16H:						
	电容量变化率 Capacitance Change	±30%初始值以内 Within ±30% of the initial value					
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 ≤ 300% of the initial specified value					
	漏电流 Leakage Current	≤ 初始规定值 ≤ Not more than the initial specified value					
高温贮存 Shelf Life	+105℃贮存 (不施加电压) 1000 小时, 恢复 16H 后测试, 电容器应满足以下要求: After 1000 hours of storage at +105℃ (without voltage application), the capacitor should meet the following requirements for 16H:						
	电容量变化率 Capacitance Change	±30%初始值以内 Within ±30% of the initial value					
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 ≤ 300% of the initial specified value					
	漏电流 Leakage Current	≤ 2 倍初始规定值 ≤ 200% of initial specified value					
低温特性 Low Temperature Stability 阻抗比 Impedance Ratio (120Hz)	U _R (V)	6.3	10	16	25	35	50
	Z(-25℃)/Z(+20℃)	4	3	2	2	2	2
	Z(-55℃)/Z(+20℃)	10	8	6	4	3	3
耐焊接热 Resistance to Soldering Heat	在 250℃的条件下, 电容器在热板上保持 30 秒, 然后从热板上取出电容器, 让其在室温下恢复, 电容器应满足以下要求: The capacitors shall be kept on the hot plate maintained at 250℃ for 30 seconds. After removing from the hot plate and						
	电容量变化率 Capacitance Change	±10%初始值以内 Within ±10% of the initial value					
	损耗角正切 Dissipation Factor	≤ 初始规定值 Not more than the initial specified value					
	漏电流 Leakage Current	≤ 初始规定值 Not more than the initial specified value					

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外形图及尺寸表 Case Size Table



单位 Unit: mm

尺寸(DXL)	4×5.4	5×5.4	6.3×5.4	6.3×7.7
A (底座宽Base width)	4.3	5.3	6.6	6.6
B (底座宽Base width)	4.3	5.3	6.6	6.6
C (引脚总长Total pin length)	5.0	6.0	7.2	7.2
P (脚距Foot spacing)	1.0	1.3	2.2	2.2
L (成品高度Height of finished product)	5.4	5.4	5.4	7.7
W (引脚宽度Pin width)	0.5-0.8			

标称电容量、额定电压、额定纹波电流与尺寸对应表

Nominal Capacitance, Rated Voltage, Rated Ripple Current and Case Size Table

WV Code 代码 μF		6.3		10		16		25		35		50	
		0J		1A		1C		1E		1V		1H	
		D×Lmm	I (mA)	D×Lmm	I (mA)	D×Lmm	I (mA)	D×Lmm	I (mA)	D×Lmm	I (mA)	D×Lmm	I (mA)
1	1R0											4×5.4	10
2.2	2R2											4×5.4	15
3.3	3R3											4×5.4	20
4.7	4R7							4×5.4	20	4×5.4	20	5×5.4	28
10	100					4×5.4	28	5×5.4	25	5×5.4	30	6.3×5.4	45
22	220	4×5.4	32	5×5.4	21	5×5.4	40	6.3×5.4	40	6.3×5.4	55		
33	330	5×5.4	40	5×5.4	38	6.3×5.4	58	6.3×5.4	45	6.3×7.7	108		
47	470	5×5.4	50	6.3×5.4	45	6.3×5.4	70	6.3×7.7	55	6.3×7.7	110		
100	101	6.3×5.4	78	6.3×5.4	60	6.3×7.7	98	6.3×7.7	120				
220	221	6.3×7.7	90	6.3×7.7	78								

I~ = Rated ripple current (mA) (105°C, 120Hz) I~ = 额定纹波电流 (mA) (105°C, 120Hz)

额定纹波电流频率修正系数

Frequency correction factor for ripple current

Frequency 频率	50Hz	120Hz	300Hz	1KHz	≥100Hz
Coefficient 系数	0.70	1.00	1.17	1.36	1.50

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VL 铝电解电容器-贴片型

Aluminum electrolytic capacitor- SMD type

特点 Features

- 105℃、3000~5000 小时长寿命品
105℃, 3000~5000 hours long life products
- 贴片型大额定静电容量电容器
Chip type large rated electrostatic capacity capacitor
- 适用于表面黏着之高密度PCB设计
Suitable for high density PCB design with surface adhesion
- 符合ROHS 指令
Comply with ROHS directive



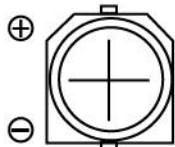
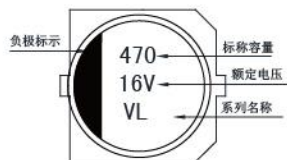
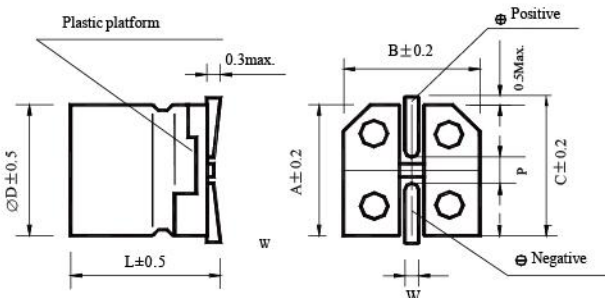
主要技术性能 Specifications

项目 Items	特性 Performance Characteristics									
工作温度 范围 Operating Temperature	-40~+105℃									
额定电压范围 Rated Voltage Range	6.3V~100VDC									
标称容量范围 Nominal Capacitance	4.7~1500μF									
标称容量允许偏差 Nominal Capacitance	±20% (20℃, 120Hz)									
漏电流 (20℃) Leakage Current	I≤0.01*CR*VR or 3(μA), 取较大者 (2 分钟) CR: 标称容量 (μF) VR: 额定电压 (V) I≤0.01*CR*VR or 3(μA) Whichever is greater(at 20℃, after 2 minutes) CR: Nominal Capacitance (μF) VR: Rated voltages (V)									
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	6.3	10	16	25	35	50	63	80	100
	tgδ	0.30	0.24	0.20	0.16	0.14	0.14	0.12	0.12	0.10
耐久性 Load Life	+105℃施加额定电压 5000 小时后 (ΦD=4, 5 和 6.3 为 3000 小时) , 恢复 16H 后测试, 电容器应满足以下要求: After 5000 hours (3000 hours for ΦD = 4, 5 and 6.3) , application of rated voltage at 105℃, Resume testing after 16 hours, the capacitor should meet the following:									
	电容量变化率 Capacitance Change	±30%初始值以内 Within ±30% of the initial value								
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 Not more than 300% of the initial specified value								
	漏电流 Leakage Current	≤ 初始规定值 Not more than the initial specified value								
高温贮存 Shelf Life	+105℃贮存 (不施加电压) 1000 小时, 恢复 16 小时后测试, 电容器应满足以下要求: After 1000 hours of storage at +105℃ (without voltage application), Resume testing after 16 hours, the capacitor should meet the following requirements for 16H:									
	电容量变化率 Capacitance Change	±30%初始值以内 Within ±30% of the initial value								
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 Not more than 300% of the initial specified value								
	漏电流 Leakage Current	≤ 2 倍初始规定值 ≤ 200% of initial specified value								
低温特性 Low Temperature Stability 阻抗比 Impedance Ratio (120Hz)	U _R (V)	6.3	10	16	25	35	50	63	80	100
	Z(-25℃)/Z(+20℃)	4	3	2	2	2	2	2	2	2
	Z(-40℃)/Z(+20℃)	10	7	5	3	3	3	3	3	3
耐焊接热 Resistance to Soldering Heat	在 250℃的条件下, 电容器在热板上保持 30 秒, 然后从热板上取出电容器, 让其在室温下恢复, 电容器应满足以下要求: The capacitors shall be kept on the hot plate maintained at 250℃ for 30 seconds. After removing from the hot plate and									
	电容量变化率 Capacitance Change	±10%初始值以内 Within ±10% of the initial value								
	损耗角正切 Dissipation Factor	≤ 初始规定值 Not more than the initial specified value								
	漏电流 Leakage Current	≤ 初始规定值 Not more than the initial specified value								

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外形图及尺寸表 Case Size Table

 $\Phi D = \Phi 4 \sim 10$ (其中 $\Phi 10$ 铝壳底部有防爆阀)

单位 Unit: mm

尺寸(DXL)	4×5.4	5×5.4	6.3×5.4	6.3×7.7	8×10.5	10×10.5
A (底座宽Base width)	4.3	5.3	6.6	6.6	8.3	10.3
B (底座宽Base width)	4.3	5.3	6.6	6.6	8.3	10.3
C (引脚总长Total pin length)	5.0	6.0	7.2	7.2	9.1	11.1
P (脚距Foot spacing)	1	1.3	2.2	2.2	3.1	4.5
L (成品高度Height of finished product)	5.4	5.4	5.4	7.7	10.5	10.5
W (引脚宽度Pin width)	0.5-0.8				0.8-1.1	

标称电容量、额定电压、额定纹波电流与尺寸对应表

Nominal Capacitance, Rated Voltage, Rated Ripple Current and Case Size Table

WV Code代码 μF		6.3		10		16		25		35	
		0J		1A		1C		1E		1V	
		D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)
4.7	4R7							4×5.4	13	4×5.4	13
10	100					4×5.4	18	5×5.4	20	5×5.4	20
22	220			5×5.4	25	5×5.4	25	6.3×5.4	40	6.3×5.4	40
33	330			5×5.4	30	6.3×5.4	45	6.3×5.4	45	6.3×7.7	60
47	470	5×5.4	40	6.3×5.4	45	6.3×5.4	55	6.3×5.4	55	6.3×7.7	65
								6.3×7.7	65		
100	101	6.3×5.4	60	6.3×5.4	55	6.3×5.4	60	6.3×7.7	100	8×10.5	130
						6.3×7.7	90	8×10.5	130		
220	221	6.3×5.4	70	6.3×7.7	90	6.3×7.7	90	8×10.5	145	8×10.5	145
		6.3×7.7	105			8×10.5	250	10×10.5	230	10×10.5	230
330	331	6.3×7.7	105	8×10.5	170	8×10.5	260	10×10.5	250	10×10.5	250
		8×10.5	245								
470	471	6.3×7.7	105	8×10.5	170	8×10.5	265	10×10.5	310		
		8×10.5	170	10×10.5	345	10×10.5	310				
1000	102	10×10.5	310	10×10.5	310						
1500	152	10×10.5	400								

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μF	Code 代码	50		63		80		100	
		1H		1J		1K		2A	
		D*Lmm	I (mA)	D*Lmm	I (mA)	D*Lmm	I (mA)	D*Lmm	I (mA)
4.7	4R7	5×5.4	20	5×5.4	20	6.3×5.4	22	6.3*7.7	50
10	100	6.3×5.4	30	6.3×5.4	35	6.3*7.7	50	6.3*7.7	50
22	220	6.3×7.7	52	6.3*7.7	52	8*10.5	90	10*10.5	100
33	330	6.3×7.7	55	8*10.5	85			10*10.5	100
47	470	8×10.5	95	8*10.5	95			10*10.5	100
100	101	10×10.5	100	10*10.5	100				

↓
I~ = Rated ripple current (mA) (105°C, 120Hz) I~ = 额定纹波电流 (mA) (105°C, 120Hz)

额定纹波电流频率修正系数 Frequency correction factor for ripple current

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

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VM 铝电解电容器-贴片型

Aluminum electrolytic capacitor- SMD type

特点 Features

1. 125°C、1000~2000 小时耐高温品
125°C, 1000~2000 hours of high temperature resistant products
2. 贴片型大额定静容量电容器
Chip type large rated electrostatic capacity capacitor
3. 适用于表面黏着之高密度PCB设计
Suitable for high density PCB design with surface adhesion
4. 符合ROHS 指令
Comply with ROHS directive



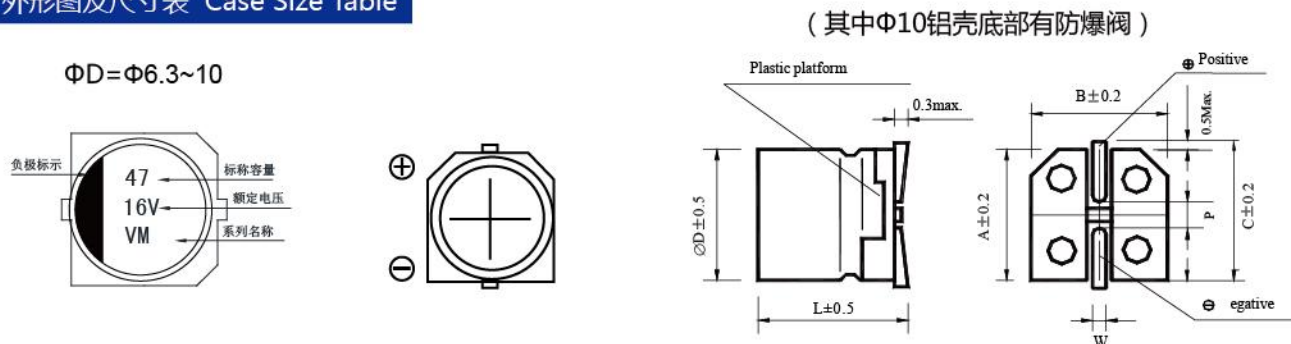
主要技术性能 Specifications

项目 Items	特性 Performance Characteristics						
工作温度 范围 Operating Temperature	-40~+125℃						
额定电压范围 Rated Voltage Range	6.3V~50VDC						
标称电容量范围 Nominal Capacitance	10~470μF						
标称电容量允许偏差 Nominal Capacitance	±20% (20℃ , 120Hz)						
漏电流 (20℃) Leakage Current	I≤0.01*CR*VR or 3(μA), 取较大者 (2 分钟) CR : 标称电容量 (μF) UR : 额定电压 (V) I≤0.01*CR*VR or 3(μA) Whichever is greater (at 20℃, after 2 minutes) CR: Nominal Capacitance (μF) UR: Rated voltages (V)						
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	6.3	10	16	25	35	50
	tgδ	0.30	0.24	0.20	0.18	0.16	0.14
耐久性 Load Life	+125℃施加额定电压 2000 小时(6.3*7.7 1000 小时), 恢复 16 小时后测试, 电容器应满足以下要求: After applying the rated voltage at +125℃ for 2000 hours (6.3*7.7 1000 hours), Resume testing after 16 hours, the capacitor should meet the following requirements:						
	电容量变化率 Capacitance Change	±30%初始值以内 Within ±30% of the initial value					
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 ≤ 300% of the initial specified value					
	漏电流 Leakage Current	≤ 初始规定值 ≤ initial specified value					
高温贮存 Shelf Life	+105℃贮存 (不施加电压) 1000 小时, 恢复 16 小时后测试, 电容器应满足以下要求: After 1000 hours of storage at +105℃ (without voltage application), Resume testing after 16 hours, the capacitor should meet the following requirements:						
	电容量变化率 Capacitance Change	±30%初始值以内 Within ±30% of the initial value					
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 ≤ 300% of the initial specified value					
	漏电流 Leakage Current	≤ 2 倍初始规定值 ≤ 200% of initial specified value					
低温特性 Low Temperature Stability 阻抗比 Impedance Ratio (120Hz)	U _R (V)	6.3	10	16	25	35	50
	Z(-25℃)/Z(+20℃)	6	6	5	4	3	3
	Z(-40℃)/Z(+20℃)	10	8	6	4	3	3
耐焊接热 Resistance to Soldering Heat	在 250℃的条件下, 电容器在热板上保持 30 秒, 然后从热板上取出电容器, 让其在室温下恢复, 电容器应满足以下要求: The capacitors shall be kept on the hot plate maintained at 250℃ for 30 seconds. After removing from the hot plate and						
	电容量变化率 Capacitance Change	±10%初始值以内 Within ±10% of the initial value					
	损耗角正切 Dissipation Factor	≤ 初始规定值 Not more than the initial specified value					
	漏电流 Leakage Current	≤ 初始规定值 Not more than the initial specified value					

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外形图及尺寸表 Case Size Table



尺寸 (DXL)	6.3×7.7	8×10.5	10×10.5
A (底座宽Base width)	6.6	8.3	10.3
B (底座宽Base width)	6.6	8.3	10.3
C (引脚总长Total pin length)	7.2	9.1	11.1
P (脚距Foot spacing)	2.2	3.1	4.5
L (成品高度Height of finished product)	7.7	10.5	10.5
W (引脚宽度Pin width)	0.5-0.8	0.8-1.1	

标称电容量、额定电压、额定纹波电流与尺寸对应表

Nominal Capacitance, Rated Voltage, Rated Ripple Current and Case Size Table

μF	Code代码	WV 6.3		10		16		25		35		50	
		0J		1A		1C		1E		1V		1H	
		D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)
10	100											6.3×7.7	35
22	220											6.3×7.7	65
33	330									6.3×7.7	60	8×10.5	80
47	470			6.3×7.7	55	6.3×7.7	55	6.3×7.7	60	8×10.5	85	10×10.5	95
100	101	6.3×7.7	65	6.3×7.7	65	6.3×7.7	65	8×10.5	90	10×10.5	105	10×10.5	105
220	221	8×10.5	95	8×10.5	95	8×10.5	95	10×10.5	130				
330	331	8×10.5	115	10×10.5	120	10×10.5	135	10×10.5	135				
470	471	10×10.5	135	10×10.5	130	10×10.5	140						

I~ = Rated ripple current (mA) (105°C, 120Hz) I~ = 额定纹波电流 (mA) (105°C, 120Hz)

额定纹波电流频率修正系数

Frequency correction factor for ripple current

Frequency 频率	50Hz	120Hz	300Hz	1KHz	≥100Hz
Coefficient 系数	0.70	1.00	1.17	1.36	1.50

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VN 铝电解电容器-贴片型

Aluminum electrolytic capacitor- SMD type

特点 Features

1. 85°C、2000 小时双极性品
85°C, 2000 hours bipolar product
2. 贴片型大额定静电容量电容器
Chip type large rated electrostatic capacity capacitor
3. 适用于表面黏着之高密度PCB设计
Suitable for high density PCB design with surface adhesion
4. 符合ROHS 指令
Comply with ROHS directive



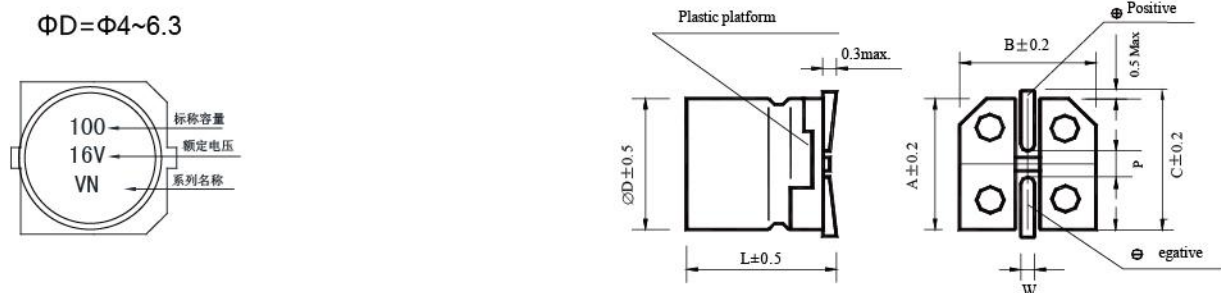
主要技术性能 Specifications

项目 Items	特性 Performance Characteristics						
工作温度 范围 Operating Temperature	-40~+85℃						
额定电压范围 Rated Voltage Range	6.3~50VDC						
标称容量范围 Nominal Capacitance	1~220μF						
标称容量允许偏差 Nominal Capacitance	±20% (20℃ , 120Hz)						
漏电流 (20℃) Leakage Current	I≤0.05*CR*VR or 10(μA) , 取较大者 (2 分钟) CR : 标称容量 (μF) VR : 额定电压 (V) I≤0.05*CR*VR or 10(μA) Whichever is greater(at 20℃, after 2 minutes) CR: Nominal Capacitance (μF) VR: Rated voltages (V)						
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	6.3	10	16	25	35	50
	tgδ	0.30	0.26	0.22	0.20	0.20	0.18
耐久性 Load Life	+85℃施加额定电压 2000 小时后, 每 250 小时换向一次, 电容器应满足以下要求: After 2000 hours' application of rated voltage at 105℃, with the polarity inverted every 250 hours, the capacitor shall meet the following requirement:						
	电容量变化率 Capacitance Change	±30%初始值以内 Within ±30% of the initial value					
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 Not more than 300% of the initial specified value					
	漏电流 Leakage Current	≤ 初始规定值 Not more than the initial specified value					
高温贮存 Shelf Life	+85℃贮存 (不施加电压) 1000 小时, 恢复 16 小时后测试, 电容器应满足以下要求: After 1000 hours of storage at +105℃ (without voltage application), Resume testing after 16 hours, the capacitor should meet the following requirements:						
	电容量变化率 Capacitance Change	±30%初始值以内 Within ±30% of the initial value					
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 Not more than 300% of the initial specified value					
	漏电流 Leakage Current	≤ 2 倍初始规定值 ≤ 200% of initial specified value					
低温特性 Low Temperature Stability 阻抗比 Impedance Ratio (120Hz)	U _R (V)	6.3	10	16	25	35	50
	Z(-25℃)/Z(+20℃)	4	3	2	2	2	2
	Z(-40℃)/Z(+20℃)	8	6	4	4	3	3
耐焊接热 Resistance to Soldering Heat	在 250℃的条件下, 电容器在热板上保持 30 秒, 然后从热板上取出电容器, 让其在室温下恢复, 电容器应满足以下要求: The capacitors shall be kept on the hot plate maintained at 250℃ for 30 seconds. After removing from the hot plate and						
	电容量变化率 Capacitance Change	±10%初始值以内 Within ±10% of the initial value					
	损耗角正切 Dissipation Factor	≤ 初始规定值 Not more than the initial specified value					
	漏电流 Leakage Current	≤ 初始规定值 Not more than the initial specified value					

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外形图及尺寸表 Case Size Table



单位 Unit: mm

尺寸(DXL)	4×5.4	5×5.4	6.3×5.4	6.3×7.7
A (底座宽Base width)	4.3	5.3	6.6	6.6
B (底座宽Base width)	4.3	5.3	6.6	6.6
C (引脚总长Total pin length)	5.0	6.0	7.2	7.2
P (脚距Foot spacing)	1.0	1.3	2.2	2.2
L (成品高度Height of finished product)	5.4	5.4	5.4	7.7
W (引脚宽度Pin width)	0.5-0.8			

标称容量、额定电压、额定纹波电流与尺寸对应表

Nominal Capacitance, Rated Voltage, Rated Ripple Current and Case Size Table

WV		6.3		10		16		25		35		50	
Code代码		0J		1A		1C		1E		1V		1H	
μF		D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)	D×Lmm	I(mA)
1.0	1R0											4×5.4	8.4
2.2	2R2									4×5.4	8.4	5×5.4	13
3.3	3R3							5×5.4	12	5×5.4	16	5×5.4	17
4.7	4R7					4×5.4	12	5×5.4	16	5×5.4	18	6.3×5.4	20
10	100			4×5.4	17	5×5.4	23	6.3×5.4	27	6.3×5.4	29	6.3×7.7	36
22	220	5×5.4	28	6.3×5.4	33	6.3×5.4	37	6.3×7.7	50	6.3×7.7	54		
33	330	6.3×5.4	37	6.3×5.4	41	6.3×5.4	49	6.3×7.7	61				
47	470	6.3×5.4	45	6.3×7.7	61	6.3×7.7	75						
100	101	6.3×7.7	82	6.3×7.7	85	6.3×7.7	76						
220	221	6.3×7.7	108										

I~ = Rated ripple current (mA) (105°C, 120Hz) I~ = 额定纹波电流 (mA) (105°C, 120Hz)

额定纹波电流频率修正系数

Frequency correction factor for ripple current

Frequency 频率	50Hz	120Hz	300Hz	1KHz	≥100Hz
Coefficient 系数	0.70	1.00	1.17	1.36	1.50

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VP 铝电解电容器-贴片型

Aluminum electrolytic capacitor- SMD type

特点 Features

- 105°C、1000 小时小型化一般品
105°C, 1000 hours of miniaturized general products
- 贴片型大额定静容量电容器
Chip type large rated electrostatic capacity capacitor
- 适用于表面黏着之高密度PCB设计
Suitable for high density PCB design with surface adhesion
- 符合ROHS 指令
Comply with ROHS directive



主要技术性能 Specifications

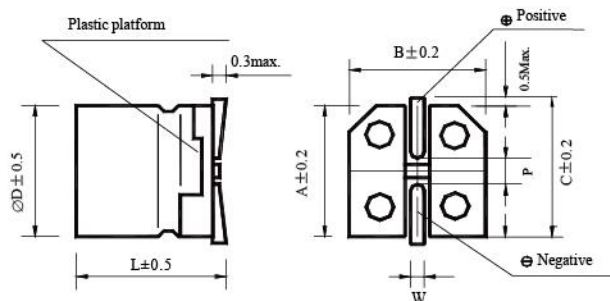
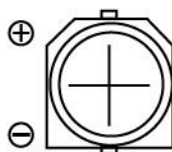
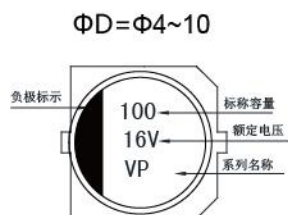
项目 Items	特性 Performance Characteristics							
工作温度 范围 Operating Temperature	-40~+105℃							
额定电压范围 Rated Voltage Range	6.3V~100VDC							
标称电容量范围 Nominal Capacitance	10~2200μF							
标称电容量允许偏差 Nominal Capacitance	±20% (20℃ , 120Hz)							
漏电流 (20℃) Leakage Current	I≤0.01*CR*VR or 3(μA), 取较大者 (2 分钟) CR : 标称电容量 (μF) VR : 额定电压 (V) I≤0.01*CR*VR or 10(μA) Whichever is greater(at 20℃, after 2 minutes) CR: Nominal Capacitance (μF) VR: Rated voltages (V)							
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	6.3	10	16	25	35	50	100
	tgδ	0.32	0.26	0.22	0.18	0.16	0.16	0.12
耐久性 Load Life	+105℃施加额定电压 1000 小时, 恢复 16 小时后测试, 电容器应满足以下要求: After 1000 hours' application of rated voltage at 105℃ Resume testing after 16 hours, the capacitor should meet the following requirements:							
	电容量变化率 Capacitance Change	±30%初始值以内 Within ±30% of the initial value						
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 Not more than 300% of the initial specified value						
	漏电流 Leakage Current	≤ 初始规定值 Not more than the initial specified value						
高温贮存 Shelf Life	+105℃贮存 (不施加电压) 1000 小时, 恢复 16 小时后测试, 电容器应满足以下要求: After 1000 hours of storage at +105℃ (without voltage application), Resume testing after 16 hours, the capacitor should meet the following requirements:							
	电容量变化率 Capacitance Change	±30%初始值以内 Within ±30% of the initial value						
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 Not more than 300% of the initial specified value						
	漏电流 Leakage Current	≤ 2 倍初始规定值 ≤ 200% of initial specified value						
低温特性 Low Temperature Stability 阻抗比 Impedance Ratio (120Hz)	U _R (V)	6.3	10	16	25	35	50	100
	Z(-25℃)/Z(+20℃)	6	6	5	5	4	4	4
	Z(-40℃)/Z(+20℃)	10	8	8	6	6	6	6
耐焊接热 Resistance to Soldering Heat	在 250℃的条件下, 电容器在热板上保持 30 秒, 然后从热板上取出电容器, 让其在室温下恢复, 电容器应满足以下要求: The capacitors shall be kept on the hot plate maintained at 250℃ for 30 seconds. After removing from the hot plate and							
	电容量变化率 Capacitance Change	±10%初始值以内 Within ±10% of the initial value						
	损耗角正切 Dissipation Factor	≤ 初始规定值 Not more than the initial specified value						
	漏电流 Leakage Current	≤ 初始规定值 Not more than the initial specified value						

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外形图及尺寸表 Case Size Table

(其中Φ10铝壳底部有防爆阀)



单位 Unit: mm

尺寸(DXL)	4 × 5.4	5 × 5.4	6.3 × 5.4	6.3 × 7.7	8 × 10.5	10 × 10.5
A (底座宽Base width)	4.3	5.3	6.6	6.6	8.3	10.3
B (底座宽Base width)	4.3	5.3	6.6	6.6	8.3	10.3
C (引脚总长Total pin length)	5.0	6.0	7.2	7.2	9.1	11.1
P (脚距Foot spacing)	1	1.3	2.2	2.2	3.1	4.5
L (成品高度Height of finished product)	5.4	5.4	5.4	7.7	10.5	10.5
W (引脚宽度Pin width)	0.5-0.8				0.8-1.1	

标称电容量、额定电压、额定纹波电流与尺寸对应表

Nominal Capacitance, Rated Voltage, Rated Ripple Current and Case Size Table

WV		6.3		10		16		25		35		50		100	
Code代码		0J		1A		1C		1E		1V		1H		2A	
μF		D×Lmm	I (mA)	D×Lmm	I (mA)	D×Lmm	I (mA)	D×Lmm	I (mA)	D×Lmm	mA	D×Lmm	mA	D×Lmm	I (mA)
10	100													6.3×5.4	32
22	220													6.3×7.7	65
33	330									5×5.4	35				
47	470							5×5.4	35			6.3×5.4	55	8×10.5	130
100	101	4×5.4	30			5×5.4	70	6.3×5.4	68	6.3×5.4	72	6.3×7.7	75		
150	151			5×5.4	50					6.3×7.7	98				
220	221	5×5.4	40			6.3×5.4	90	6.3×7.7	110			8×10.5	155		
330	331	6.3×5.4	70	6.3×5.4	75	6.3×7.7	110			8×10.5	200	10×10.5	235		
470	471	6.3×5.4	75			6.3×7.7	120	8×10.5	252						
680	681	6.3×7.7	82			8×10.5	252	10×10.5	335						
1000	102			8×10.5	230										
1500	152			10×10.5	330										
2200	222			10×10.5	335										

I~ = Rated ripple current (mA) (105°C, 120Hz) I~ = 额定纹波电流 (mA) (105°C, 120Hz)

额定纹波电流频率修正系数

Frequency correction factor for ripple current

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

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铝电解电容器-贴片型

Aluminum electrolytic capacitor- SMD type

特点 Features

- 105°C、1000 小时、小型化低阻抗品
105°C, 1000 hours, miniaturized low impedance products
- 贴片型大额定静电容量电容器
Chip type large rated electrostatic capacity capacitor
- 适用于表面黏着之高密度PCB设计
Suitable for high density PCB design with surface adhesion
- 符合ROHS 指令
Comply with ROHS directive



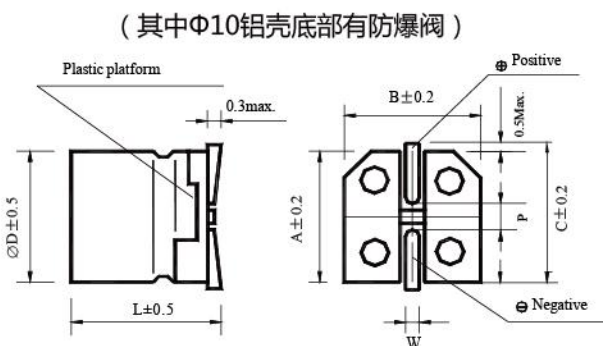
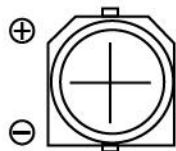
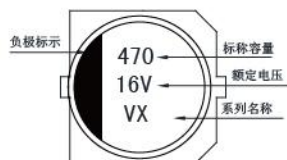
主要技术性能 Specifications

项目 Items	特性 Performance Characteristics						
工作温度 范围 Operating Temperature	-55~+105℃						
额定电压范围 Rated Voltage Range	6.3V~50VDC						
标称电容量范围 Nominal Capacitance	1~2200μF						
标称电容量允许偏差 Nominal Capacitance	±20% (20℃ , 120Hz)						
漏电流 (20℃) Leakage Current	I≤0.01*CR*VR or 3(μA), 取较大者 (2 分钟) CR : 标称电容量 (μF) VR : 额定电压 (V) I≤0.01*CR*VR or 3(μA) Whichever is greater(at 20℃, after 2 minutes) CR: Nominal Capacitance (μF) VR: Rated voltages (V)						
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	6.3	10	16	25	35	50
	tgδ	0.26	0.19	0.16	0.14	0.12	0.10
耐久性 Load Life	+105℃施加额定电压 1000 小时, 恢复 16 小时后测试, 电容器应满足以下要求: After 1000 hours' application of rated voltage at 105℃, Resume testing after 16 hours, the capacitor should meet the following requirements:						
	电容量变化率 Capacitance Change	±30%初始值以内 Within ±30% of the initial value					
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 Not more than 300% of the initial specified value					
	漏电流 Leakage Current	≤ 初始规定值 Not more than the initial specified value					
高温贮存 Shelf Life	+105℃贮存 (不施加电压) 1000 小时, 恢复 16 小时后测试, 电容器应满足以下要求: After 1000 hours of storage at +105℃ (without voltage application), Resume testing after 16 hours, the capacitor should meet the following requirements:						
	电容量变化率 Capacitance Change	±30%初始值以内 Within ±30% of the initial value					
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 Not more than 300% of the initial specified value					
	漏电流 Leakage Current	≤ 2 倍初始规定值 ≤ 200% of initial specified value					
低温特性 Low Temperature Stability 阻抗比 Impedance Ratio (120Hz)	U _R (V)	6.3	10	16	25	35	50
	Z(-25℃)/Z(+20℃)	4	3	2	2	2	2
	Z(-55℃)/Z(+20℃)	8	5	4	3	3	3
耐焊接热 Resistance to Soldering Heat	在 250℃的条件下, 电容器在热板上保持 30 秒, 然后从热板上取出电容器, 让其在室温下恢复, 电容器应满足以下要求: The capacitors shall be kept on the hot plate maintained at 250℃ for 30 seconds. After removing from the hot plate and						
	电容量变化率 Capacitance Change	±10%初始值以内 Within ±10% of the initial value					
	损耗角正切 Dissipation Factor	≤ 初始规定值 Not more than the initial specified value					
	漏电流 Leakage Current	≤ 初始规定值 Not more than the initial specified value					

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外形图及尺寸表 Case Size Table

 $\Phi D = \Phi 4 \sim 10$ 

单位 Unit: mm

尺寸(DXL)	4×5.4	5×5.4	6.3×5.4	6.3×7.7	8×10.5	10×10.5
A (底座宽Base width)	4.3	5.3	6.6	6.6	8.3	10.3
B (底座宽Base width)	4.3	5.3	6.6	6.6	8.3	10.3
C (引脚总长Total pin length)	5.0	6.0	7.2	7.2	9.1	11.1
P (脚距Foot spacing)	1	1.3	2.2	2.2	3.1	4.5
L (成品高度Height of finished product)	5.4	5.4	5.4	7.7	10.5	10.5
W (引脚宽度Pin width)	0.5-0.8				0.8-1.1	

标称电容量、额定电压、额定纹波电流与尺寸对应表

Nominal Capacitance, Rated Voltage, Rated Ripple Current and Case Size Table

WV Code 代码		6.3			10			16		
		0J			1A			1C		
		D×Lmm	ESR(Ω)	I(mA)	D×Lmm	ESR(Ω)	I(mA)	D×Lmm	ESR(Ω)	I(mA)
47	470							4×5.8	1.25	160
68	680				4×5.8	1.25	160	5×5.8	0.76	240
100	101	4×5.8	1.25	160				5×5.8	0.76	240
150	151				5×5.8	0.76	240	6.3×5.8	0.36	300
220	221	5×5.8	0.76	240	6.3×5.8	0.36	300	6.3×5.8	0.36	300
330	331	6.3×5.8	0.36	300	6.3×5.8	0.36	300	6.3×7.7	0.26	600
470	471	6.3×5.8	0.36	300	6.3×7.7	0.26	600	6.3×7.7	0.26	600
680	681	6.3×7.7	0.26	600				8×10.5	0.16	850
1000	102				8×10.5	0.16	850	10×10.5	0.08	1190
1500	152	8×10.5	0.16	850	10×10.5	0.08	1190			
2200	222	10×10.5	0.08	1190						

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uF	Code 代码	25			35			50		
		1E			1V			1H		
		D×Lmm	ESR(Ω)	I(mA)	D×Lmm	ESR(Ω)	I(mA)	D×Lmm	ESR(Ω)	I(mA)
10	100							4×5.8	2.6	85
								5×5.8	1.20	165
22	220	4×5.8	1.25	160	4×5.8	1.25	160	5×5.8	1.20	165
33	330	4×5.8	1.25	160	5×5.8	0.76	240	6.3×5.8	0.74	195
47	470	5×5.8	0.76	240	5×5.8	0.75	240	6.3×5.8	0.74	195
68	680	5×5.8	0.76	240	6.3×5.8	0.36	300			
100	101	6.3×5.8	0.36	300	6.3×5.8	0.36	300	6.3×7.7	0.40	350
150	151				6.3×7.7	0.26	600			
220	221	6.3×7.7	0.26	600				8×10.5	0.25	670
330	331				8×10.5	0.16	850	10×10.5	0.20	880
470	471	8×10.5	0.16	850	10×10.5	0.08	1190			

- Case size $\varnothing D \times L$ (mm), ripple current (mA rms) at 105° C 100KHz; Impedance (Ω) at 25° C 100KHz
- 尺寸 $\varnothing D \times L$ (mm), 纹波电流 (mA rms) 于 105° C 100KHz; 阻抗值(Ω) 于 25° C 100KHz

额定纹波电流频率修正系数 Frequency correction factor for ripple current

Frequency 频率	50Hz	120Hz	1KHz	10KHz	≥100KHz
Coefficient 系数	0.40	0.50	0.85	0.95	1.00

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VZ 铝电解电容器-贴片型

Aluminum electrolytic capacitor- SMD type

特点 Features

- 105℃、小型化、低阻抗、长寿命品, 3000~5000小时长寿命品
105℃, Compact, low-impedance, long-life products, 3000~5000 hours long life products
- 贴片型大额定静电容量电容器
Chip type large rated electrostatic capacity capacitor
- 适用于表面黏着之高密度PCB设计
Suitable for high density PCB design with surface adhesion
- 符合ROHS 指令
Comply with ROHS directive



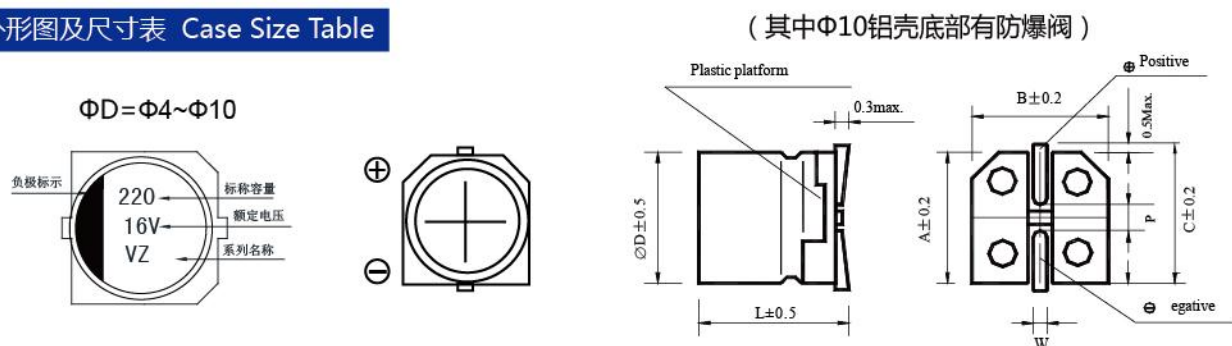
主要技术性能 Specifications

项目 Items	特性 Performance Characteristics									
工作温度 范围 Operating Temperature	-55~+105℃									
额定电压范围 Rated Voltage Range	6.3V~100VDC									
标称容量范围 Nominal Capacitance	1~220μF									
标称容量允许偏差 Nominal Capacitance	±20% (20℃ , 120Hz)									
漏电流 (20℃) Leakage Current	I≤0.01xCRxVR or 3(μA), 取较大者 (2 分钟) CR : 标称容量 (μF) UR : 额定电压 (V) I≤xCRxVR or 3(μA) Whichever is greater(at 20℃,After 2 minutes) C: Nominal Capacitance (μF) V: Rated voltages (V)									
损耗角正切 (tgδ) Dissipation Factor (Max) 20℃, 120Hz	U _R (V)	6.3	10	16	25	35	50	63	80	100
	tgδ	0.26	0.19	0.16	0.14	0.12	0.12	0.10	0.10	0.10
耐久性 Load Life	+105℃施加额定电压 3000-5000 小时 (其中尺寸 ≤6.3*7.7 尺寸 3000 小时寿命 ; 8*10.5/10*10.5 尺寸 5000 小时寿命) , 恢复 16 小时后测试 电容器应满足以下要求 : +105℃ applied rated voltage 3000-5000 hours (size ≤6.3*7.7 Size 3000 hours life; 8*10.5/10*10.5 size 5000 hours life), Resume testing after 16 hours , the capacitor should meet the following requirements:									
	电容量变化率 Capacitance Change			±30%初始值以内 Within ±30% of the initial value						
	损耗角正切 Dissipation Factor			≤ 300%初始规定值 Not more than 300% of the initial specified value						
	漏电流 Leakage Current			≤ 初始规定值 Not more than the initial specified value						
高温贮存 Shelf Life	+105℃贮存 (不施加电压) 1000 小时 , 恢复 16 小时后测试 , 电容器应满足以下要求 : After 1000 hours of storage at +105℃ (without voltage application), the capacitor should meet the following requirements:									
	电容量变化率 Capacitance Change			±30%初始值以内 Within ±30% of the initial value						
	损耗角正切 Dissipation Factor			≤ 300%初始规定值 Not more than 300% of the initial specified value						
	漏电流 Leakage Current			≤ 2 倍初始规定值 ≤ 200% of initial specified value						
低温特性 Low Temperature Stability 阻抗比 Impedance Ratio (120Hz)	U _R (V)	6.3	10	16	25	35	50	63	80	100
	Z(-25℃)/Z(+20℃)	4	3	2	2	2	2	2	2	2
	Z(-55℃)/Z(+20℃)	8	5	4	3	3	3	3	3	3
耐焊接热 Resistance to Soldering Heat	在 250℃的条件下 , 电容器在热板上保持 30 秒 , 然后从热板上取出电容器 , 让其在室温下恢复 , 电容器应满足以下要求 : The capacitors shall be kept on the hot plate maintained at 250℃ for 30 seconds. After removing from the hot plate and									
	电容量变化率 Capacitance Change			±10%初始值以内 Within ±10% of the initial value						
	损耗角正切 Dissipation Factor			≤ 初始规定值 Not more than the initial specified value						
	漏电流 Leakage Current			≤ 初始规定值 Not more than the initial specified value						

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外形图及尺寸表 Case Size Table



单位 Unit: mm

尺寸(DXL)	4×5.4	5×5.4	6.3×5.4	6.3×7.7	8×10.5	10×10.5
A (底座宽Base width)	4.3	5.3	6.6	6.6	8.3	10.3
B (底座宽Base width)	4.3	5.3	6.6	6.6	8.3	10.3
C (引脚总长Total pin length)	5.0	6.0	7.2	7.2	9.1	11.1
P (脚距Foot spacing)	1	1.3	2.2	2.2	3.1	4.5
L (成品高度Height of finished product)	5.4	5.4	5.4	7.7	10.5	10.5
W (引脚宽度Pin width)	0.5-0.8				0.8-1.1	

标称电容量、额定电压、额定纹波电流与尺寸对应表

Nominal Capacitance, Rated Voltage, Rated Ripple Current and Case Size Table

Code代码 uF		6.3			10			16		
		0J			1A			1C		
		D×Lmm	ESR(Ω)	I (mA)	D×Lmm	ESR(Ω)	I (mA)	D×Lmm	ESR(Ω)	I (mA)
47	470	5×5.8	0.70	160	5×5.8	0.70	160	6.3×5.8	0.44	230
100	101	5×5.8	0.70	160	6.3×5.8	0.44	230	6.3×5.8	0.44	230
150	151	6.3×5.8	0.44	230	6.3×5.8	0.44	230	6.3×7.7	0.36	280
220	221	6.3×5.8	0.44	230	6.3×7.7	0.36	280	6.3×7.7	0.36	280
330	331	6.3×5.8	0.36	280	8×10.5	0.17	600	8×10.5	0.17	600
470	471	6.3×7.7	0.36	280						
					8×10.5	0.17	600	10×10.5	0.09	870
680	681	8×10.5	0.17	600	10×10.5	0.09	870			
1000	102	10×10.5	0.09	870	10×10.5	0.09	870			
1500	152	10×10.5	0.09	870						

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uF	Code代码	25			35			50		
		1E			1V			1H		
		D×Lmm	ESR(Ω)	I (mA)	D×Lmm	ESR(Ω)	I (mA)	D×Lmm	ESR(Ω)	I (mA)
1	1R0							4×5.8	2.9	60
2.2	2R2							4×5.8	2.9	60
4.7	4R7							5×5.8	1.55	85
10	100	5×5.8	0.80	150	5×5.8	0.80	150	6.3×5.8	0.88	165
22	220	5×5.8	0.80	150	6.3×5.8	0.44	230	6.3×5.8	0.88	165
33	330	6.3×5.8	0.44	230	6.3×5.8	0.44	230	6.3×7.7	0.68	185
47	470	6.3×5.8	0.44	230	6.3×7.7	0.36	280	8×10.5	0.24	360
100	101	6.3×7.7	0.36	280	8×10.5	0.17	450	10×10.5	0.18	560
220	221	8×10.5	0.17	450						
330	331	10×10.5	0.17	450	10×10.5	0.09	850			
470	471	10×10.5	0.09	670						

uF	Code代码	63			80			100		
		1J			1K			2A		
		D×Lmm	ESR(Ω)	I (mA)	D×Lmm	ESR(Ω)	I (mA)	D×Lmm	ESR(Ω)	I (mA)
4.7	4R7	5×5.8	2.9	60						
10	100	6.3×5.8	1.5	80	6.3×7.7	1.4	60			
22	220	6.3×7.7	1.2	120	8×10.5	1.30	130	8×10.5	1.30	130
33	330	8×10.5	0.65	250	10×10.5	0.70	200	10×10.5	0.70	200
47	470	8×10.5	0.65	250	10×10.5	0.70	200	10×10.5	0.70	200
100	101	10×10.5	0.35	400						

- Case size $\varnothing D \times L$ (mm), ripple current (mA rms) at 105° C 100KHz, Impedance (Ω) at 25° C 100KHz
- 尺寸 $\varnothing D \times L$ (mm), 纹波电流 (mA rms) 于 105° C 100KHz, 阻抗值 (Ω) 于 25° C 100KHz

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