

■轴向引线色环电容器

Axial Lead Color Code Capacitor

◆特征

Feature

- * 体积小，容量大，适合自动安装的卷（编）带包装；

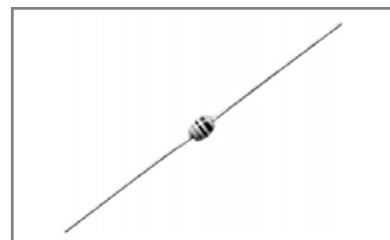
Miniature size, large capacitance, tape and reel packaging suitable for auto-placement.

- * 环氧树脂封装，从而具有优良的防潮性能、机械强度及耐热性；

Epoxy resin coating creates excellent performance in humidity resistance, mechanical strength and heat resistance.

- * 工业生产标准尺寸及多种脚型产品。

Standard size, various lead configuration.



◆应用

Application

- * 一般用途品

General purpose goods

◆型号表示法

Part Number

ACC	03	B	104	K	500	P	52
A	B	C	D	E	F	G	H

A:

产品类别 Product Type	
代号 Code	类别 Type
ACC	轴向引线色环电容器 Axial Lead Color Code Capacitor

B:

本体尺寸代码 Nominal Body Size Code	
03	Φ 1.9×3.0
08 (空白) 常规	Φ 2.2×3.2

C:

温度特性 Temperature Characteristics					
CH	0±60ppm/℃	(-25~+85℃)	CG/C0G	0±30ppm/℃	(-55~+125℃)
RH	-220±60ppm/℃	(-25~+85℃)	B/X7R	±15%	(-55~+125℃)
UJ	-750±120ppm/℃	(-25~+85℃)	F(Y)/Y5V	-80%~+30%	(-25~+85℃)
SL	-1000±140ppm/℃	(-25~+85℃)			

D:

标称容量 Nominal Capacitance
前两位数字为有效数字，后一位数字表示零的个数 First two digits are significant and the third digit is number of zeros . 例如： For example: 104=100000pF, 5R6=5.6pF

E:

容量公差 Tolerance							
C	D	J	K	M	N	S	Z
±0.25pF	±0.5pF	±5.0%	±10%	±20%	±30%	+50%~-20%	+80%~-20%
C,D for C<10PF NP0:C,D,J,K,M, X7R:K,M,N,S,Z							

F:

额定电压 Rated Voltage
前两位数字为有效数字，后一位数字表示零的个数 First two digits are significant and the third digit is number of zeros . 例如： For example: 500=50V,250=25V

G:

包装方式 Packaging Style		
编带 Tape	P	盒带包装 Ammo
	T	卷带包装 Reel

H

引脚形式（单位：mm） Lead Configuration	
26	编带内距 Tape width:26mm
52	编带内距 Tape width:52mm

◆尺寸、工作电压、容量关系表

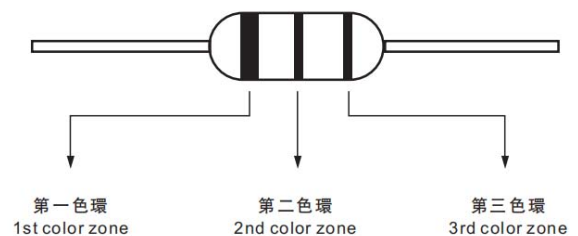
Size code, capacitance and voltage

温度特性 Temp. char	工作电压(V) Voltage		标称容量范围 Available Capacitance Range		容量公差 Capacitance Tolerance
尺寸规格 Size Code	08 型	03 型	08 型	03 型	
CG(N)	25	25	0R5~102	0R5~102	C: $\pm 0.25\text{pF}$ D: $\pm 0.5\text{pF}$ J: $\pm 5\%$ K: $\pm 10\%$ M: $\pm 20\%$
	50	50	0R5~102	0R5~102	
CH	50	50	0R5~102	1R5~102	
RH	50	50	1R0~180	1R0~180	
UJ	50	50	2R2~300	2R2~300	
SL	50	50	1R0~680	1R0~680	K: $\pm 10\%$ M: $\pm 20\%$ N: $\pm 30\%$
X7R(B)	25	25	101~334	101~104	
	50	50	101~224	101~333	
Y5V(Y/F)	25	25	103~125	103~224	M: $\pm 20\%$ N: $\pm 30\%$ Z: $-20\% \sim +80\%$
	50	50	103~105	103~224	

◆色环标记代码

Marking of Color Code

	标称容量 Nominal Capacitance		
	第一色环 1st color zone	第二色环 2nd color zone	第三色环 3rd color zone
	第一数字 1st digit	第二数字 2nd digit	第三数字 3rd digit
黑 Black	0	0	$\times 10^0$
棕 Brown	1	1	$\times 10^1$
红 Red	2	2	$\times 10^2$
橙 Orange	3	3	$\times 10^3$
黄 Yellow	4	4	$\times 10^4$
绿 Green	5	5	$\times 10^5$
蓝 Blue	6	6	
紫 Purple	7	7	
灰 Gray	8	8	
白 White	9	9	
金 Gold	—	—	$\times 10^{-1}$
银 Silver	—	—	$\times 10^{-2}$



*例如：标称容量为 104 时，色环为棕（1）+黑（0）+黄（4）；

E.G. If nominal capacitance is 104, respectively, brown + black + yellow should be marked;

*第一条色环线应稍粗，宽度约为其它两条的 1.5 倍。

The width of the first line should be about 1.5 times than others.

◆外形尺寸

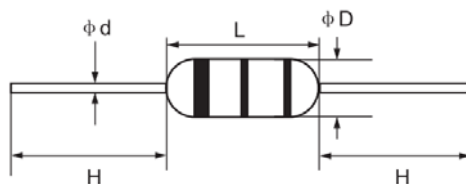
External Dimensions

* 单品

Bulk Products

单位 Unit: mm

尺寸规格 Size Code	L	Φ D	Φ d	H
08 型	≤3.2	≤2.2	0.40±0.05	≥10/20
03 型	≤3.0	≤1.9	0.40±0.05	≥10/20

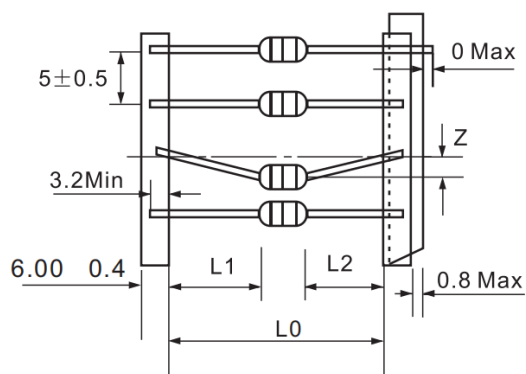


* 编带尺寸

Taping dimensions

单位 Unit: mm

编带方式 Tape Style	L	Z	L1-L2
编带内距: 26 Tape Width:	26±1.5	0.8max	1.0max
编带内距: 52 Tape Width:	52(+2.0~-1.0)	1.2max	



◆可靠性测试方法
Reliability Test Method

项目 Item	技术要求 Technical Specification			测试方法和备注 Test Method and Remarks		
容量 Capacitance (C)	I 类 Class I	应符合指定的误差级别 within the specified tolerance.		标称容量 Capacitance	测试频率 Measuring Frequency	测试电压 Measuring Voltage
				C≤1000pF	1MHZ±10%	1.0±0.2V
				C>1000 pF	1KHZ±10%	
	II 类 Class II	应符合指定的误差级别 within the specified tolerance.		标称容量 Capacitance	测试频率 Measuring Frequency	测试电压 Measuring Voltage
				C≤10uF	1KHZ±10%	1.0±0.2V
损耗角正切 Dissipation Factor (DF)	I 类 Class I	C≥50pF DF≤0.15% C<50pF DF≤1.5[(150/C)+7] X10 ⁻⁴		标称容量 Capacitance	测试频率 Measuring Frequency	测试电压 Measuring Voltage
				≤1000pF	1MHZ±10%	1.0±0.2V
				>1000 pF	1KHZ±10%	
	II 类 Class II	B	DF ≤3.5%	标称容量 Capacitance	测试频率 Measuring Frequency	测试电压 Measuring Voltage
				C≤10uF	1KHZ±10%	1.0±0.2V
绝缘电阻 Insulation Resistance	I 类 Class I	C≤10nF IR≥10000MΩ C>10nF R. C≥100 ΩF		测试电压: 额定电压 Measuring Voltage: Rated Voltage 测试时间: 60±5 秒 Duration: 60±5s 测试湿度: ≤75% Test Humidity: ≤75%		
	II 类 Class II	C≤25nF IR≥4000MΩ C>25nF R.C≥100 ΩF		测试温度: 25℃±3℃ Test Temprature: 25℃±3℃ 测试充放电电流: ≤50mA Test Current: ≤50mA		
耐溶剂性 Solvent Resistance	外观无可见损伤或异常, 标记清晰。 No defects or abnormalities in appearance and legible marking.			溶剂温度: 23±5℃ Solvent temperature:23±5℃ 将样品浸在溶剂中 1 分钟, 用脱脂棉在样品有标志部位刷 10 次, 重复 3 次。 put the sample into solvent 1 Min, and then take it out and brush sample' s notation area 10 times with pledget , repeat 3 times.th pledget , repeat 3 times.		

项目 Item	技术要求 Technical Specification	测试方法和备注 Test Method and Remarks
耐电压 Withstandi-ng Voltage	不应有介质被击穿或损伤 No breakdown or damage.	<p>测试电压 Measuring Voltage :</p> <p>I 类:300%额定电压 Class I :300% Rated voltage</p> <p>II类:250%额定电压 ClassII:250% Rated voltage</p> <p>持续时间: 5±1 秒 Duration: 5±1s</p> <p>充/放电电流不应超过 50mA The charge/ discharge current is less than 50mA.</p> <p>端子与外装间 Between terminals and body:</p> <p>施加电压: 2.5UR 持续时间: 1~5s Voltage: 2.5 times rated voltage Duration: 1~5s</p> <p>金属制小球法 Small metallic ball method</p> <p>将电容器本体插入盛满直径为 1mm 的金属小球的容器中, 但保留距端头处 2mm 的本体不插入。试验电压施加在短路回路端子和金属小球之间。</p> <p>Small metallic balls with 1mm diameters shall be put in a vessel and the test capacitor shall be submerged except 2mm from the top of its component body and the terminals. The test voltage shall be applied between the short-circuited terminals and the metallic balls.</p>
可焊性 Solder ability	上锡率应大于 95% Lead wire shall be at least 95% covered with a new solder coating.	<p>将电容器引线浸入含有 25%松香的酒精溶液中 5-10 秒, 然后浸入温度为: 245±5°C的金属焊锡 (Sn-3Ag-0.5Cu) 中 2.5(+0.5,-0.5)秒, 注意: 电容器本体底面距离锡面约 1.5~2mm。</p> <p>The lead wire of capacitor is dipping into a 25% rosin solution of ethanol for 5s-10s and then into molten solder(Sn-3Ag-0.5Cu) of 245±5°C for 2.5(+0.5,-0.5)s. In both cases the depth of dipping is up to about 1.5~2mm from the terminal body.</p>
耐焊接热 Resistance to Soldering Heat	<p>ΔC/C:</p> <p>C0G: ≤ ± 2.5%</p> <p>或 ±.25pF</p> <p>X7R: ≤ ±12.5%</p> <p>外观无可见损伤</p> <p>No significant abnormality in appearance.</p>	<p>锡温: 260 ±5°C Solder temperature: 260 ±5°C</p> <p>时间: 10 ±1 s Duration: 10 ±1 s</p> <p>浸入条件: 将电容器插入厚度为 1.6mm, 孔径为 1.0mm 的 PC 板。</p> <p>Immersed conditions: Inserted into the PC board (with t=1.6mm, hole=1.0mm diameter)</p> <p>对于 I 类介质, 试验后, 应在标准条件下恢复 24±2 小时后才测试。</p> <p>Recovery: For class I, 24±2 hours of recovery under the standard condition after test.</p> <p>对于 II 类介质, 在试验前应先进行如下预处理: 150(-10,+0) °C, 1 小时, 接着在标准条件下恢复 48 ±4 小时。</p> <p>Preconditioning (Class II) : 1 hour of preconditioning at 150(-10,+0) °C, followed by 48 ±4 hours of recovery under the standard condition.</p> <p>恢复: 对于 II 类介质试验后, 应在标准条件下恢复 48 ±4 小时后才测试。</p> <p>Recovery (Class II) : 48 ±4 hours of recovery under the standard condition after test.</p>

项目 Item	技术要求 Technical Specification		测试方法和备注 Test Method and Remarks
高温负荷 High Temperature Loading Test	$\Delta C/C$ C0G: $\leq \pm 3\%$ 或 $\pm .3pF$ X7R: $\leq \pm 12.5\%$ Y(F): $\leq \pm 30\%$		电压: 1.5 倍额定电压 时间: 1000 小时 温度: C0G/X7R 125℃,Y5V 85℃ 充电电流: 不应超过 50mA 放置条件: 室温 放置时间: 24 小时 (C0G), 或 48 小时 (X7R/Y5V) , Applied Voltage: 2Rated Voltage Duration: 1000h Temperature: 125℃ Charge/ Discharge Current: 50mA max. Recovery Conditions: Room Temperature Recovery Time: 24h (C0G), or 48h (X7R/Y5V)
	DF COG: $Cr \geq 30pF \leq 0.5\%$ $Cr < 30pF \leq 1/ (400+20Cr)$ X7R: $\leq 5.0\%$ Y(F): $\leq 12.5\%$ (CR $\leq 0.1uF$) $\leq 15.0\%$ ($1uF > CR > 0.1uF$) $\leq 17.5\%$ (CR $\geq 1uF$)		
	IR 绝缘电阻 Insulation Resistance: $\geq 500M \Omega$ or $25 \Omega .F$ 取较小值 Whichever is smaller		
	外观无可见损伤 Appearance no visible damage		
端头强度 Terminal Strength	抗拉强度 Tensile Strength	无引线断裂或松动等可见不良。 No abnormality such as cut lead or looseness.	固定电容器本体, 沿引线方向逐步施加拉力直至 10N, 然后保持 10 \pm 1 秒。 Fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N, and then keeping the force for 10 \pm 1 sec.
	弯折强度 Bending Strength		对电容器引出端施加一 2.5N 的力, 使引线弯曲 90 度, 持续 5 秒, 然后使引线回到原始位置, 接着反方向操作一次为一个循环, 共重复 2 次。 Each lead wire shall be subjected to a force of 2.5N and then be bent a angle of 90 degree then returned to initial position. This operation is done over a period of 5 sec. Then second bend in the opposite direction shall be made, repeat 2 times.

*以上所示“标准条件”解释如下: 温度: 5~35℃, 相对湿度: 45~85%, 气压: 86~106kPa

* Note on standard condition: " standard condition " referred to herein should be defined as follows:

5 to 35℃ of temperature, 45 to 75% of relative humidity, and 86 to 106kPa of atmospheric pressure.

* 若测试结果有争议时, 仲裁试验用标准大气条件为: 温度: $25 \pm 1^\circ C$, 相对湿度: 48%~52%, 气压: 86~106kPa

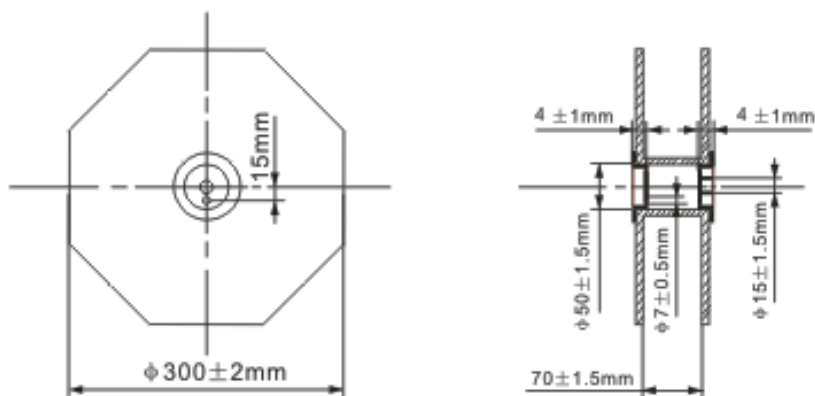
* When there are questions concerning measurement results: In order to provide correlation data, the test should be conducted under a condition of 25 degrees plus/minus 1 centigrade of temperature, 48% through 52% of relative humidity and 86 to 106 kPa of atmospheric pressure.

◆ 包装

Packaging

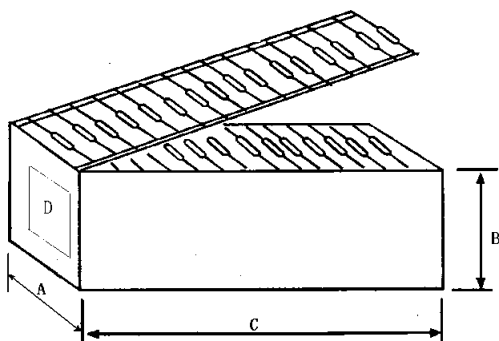
* 卷带包装

Tape and Reel Packaging



* 盒带包装

Ammo Packaging



尺寸规格 Size Code	编带方式 Tape Style	A ±5 mm	B ±5 mm	C ±5 mm	D
常规 (08)	P52	80	80	265	贴标签 Lable
	P26	60	70	265	
03	P52	76	70	260	
	P26	60	70	260	

* 包装数量

Packaging Quantity

尺寸规格 Size Code	盒带包装 Ammo	卷带包装 Tape and Reel
常规 (08)	5000pcs	5000pcs
03	5000pcs	5000pcs