



电容器（筒式）规格书

DCG471KY5P070T0LB0

推荐

目前生产

一般用

125
℃

波峰

RoHS

REACH

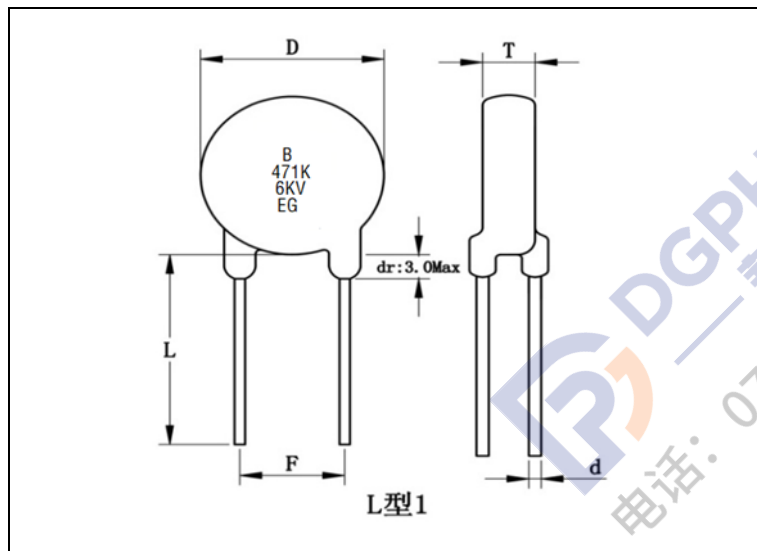
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EG-RD4-021-22-0

初始日期 2021-10-12

更新日期 2023-08-28

外形及标志



外径尺寸 D	9.5mm Max
厚度尺寸 T	6.0mm Max
引线间距 F	10.0±0.8mm
引线直径 d	0.56±0.05mm
涂料滴落 dr	Up to the end of crimp
引线长度 L	18.0Min mm

电气性能

气候类别	25/125/21
标称电容量	470pF
额定电压	6KVDC
标称电容量误差	±10%
耐电压	1.5 UrDC
介质损耗	2.5%Max
绝缘电阻	≥10000MΩ
工作温度范围	-25℃~+125℃

参考信息

包装	散件或编带	最小包装数量
	散件	500PCS
环保法规与指令符合情况	法规或指令	法规或指令所限制有害物质
	欧盟 2005/84/EC	邻苯二甲酸盐(18P)
	GS 认证 PAHS 要求	多环芳香烃(PAHS)

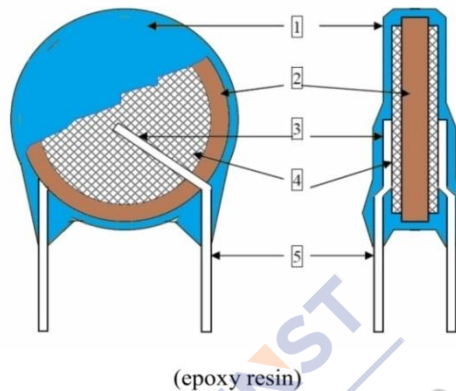
1 Brief introduction of product 产品简介

1.1 EG TYPE 易利嘉产品类别:

Type DCG superhigh voltage disc ceramic capacitors

DCG 型超高压圆片瓷介电容器

1.2 Construction and main materials of products 产品结构和主要材料



No.	Main Construction 主要结构	Materials、Specification 材料、规格	Note 备注
1	Sealed Material 封装材料	Blue Powder Phenolic Resin 蓝色粉末环氧树脂	-/-
2	Ceramic disc 陶瓷片	Ceramic disc 陶瓷	-/-
3	Solder 焊料	Sn96.5-Ag3.0-Cu0.5	-/-
4	Electrodes 电极	Ag 银/Cu 铜	-/-
5	Leads wire 金属引线	CP wire Ø 0.56mm 镀锡铜包钢线	-/-

1.3 Applications 用途

Type DCG superhigh voltage disc ceramic capacitors have rated voltage ,oftnused in filter circuit for high voltage supply and in high voltage circuit fou TV set and monitor.

DCG 型超高压圆片瓷介电容器具有较宽的直流额定电压范围和宽的电容容量范围，适用于高压电源的滤波电路、电视机和显示器的高压电路中。

1.4 Hazardous Substances Compliance: All products pass following compliance or standard: RoHS: REACH; PAHS; HF; and Phthalates-Phthalates Regulation.

产品有害物质法规符合性: 产品符合 RoHS; REACH; PAHS; HF; 邻苯二甲酸盐等法规。

1.5 Electrical Specifications 电气特性

Item 项目	Specification 标准要求
Operating Temperature 使用温度范围	-25°C~+125°C
apacitance(C),Dissipation(tgδ)Testing at 容量、损耗测试条件	1) Standard atmospheric condition 标准大气压*
	2) 25±2°C、1.0Vrms, I类 Class I : 100KHz II类 Class II : 1KHz
Quality Factor(Q)/Dissipation(tgδ) 介质损耗/品质因素	SL、DL: ≤5% Y5P、Y5U、Y5V: ≤2.5% BN: ≤0.5% Y5R: 0.2%
Rated Working Voltage 额定电压	4~15KVDC
Withstand Voltage Between Terminals 端子间耐压	1.5U _R (注:对于额定电压 6~15KV 的电容器,耐电压试验在绝缘油中进行)
Insulation Resistance 绝缘电阻	≥10000MΩ (500VDC)
Temperature Characteristic 温度特性	SL、DL、Y5P、Y5U、Y5V、BN、Y5R



Type DCG Approval Sheet (single) ---DCG 单品承认书

2 EG Part number system for example 易利嘉电容器编码示例

DCG	331	K	Y5P	060	T	0	M	35	0	(X X)
1	2	3	4	5	6	7	8	9	10	11 12

1 Product Categories 产品类别代码:

DCG: Type DCH super high voltage disc ceramic capacitors

DCG: DCG型超高压圆片瓷介电容器

2 Capacitance Code 电容量代码:

The first 2 digits indicate significant figures, and the third digit specifies the number of zero to follow.

前两位数为电容的实际数字,最后一位为倍乘数。

0= $\times 1$ 1= $\times 10$ 2= $\times 100$

3= $\times 1000$ 4= $\times 10000$ 9= $\times 0.1$

This gives the capacitance in picofarad.容量值单位为皮法 (pF)。

102 = 10×10^2 pF = 1,000pF = 1.0nF = 0.001 μ F 105 = 10×10^5 pF = 1,000,000pF = 1000nF = 1 μ F

3 Capacitance Tolerance 电容量允许偏差:

J = $\pm 5\%$ K = $\pm 10\%$ M = $\pm 20\%$

4 Temperature characteristics, temperature coefficient: 温度特性、温度系数:

SL、DL、Y5P、Y5U、Y5V、BN、Y5R

SL、DL: (-1000~+350 ppm/ $^{\circ}$ C)

Y5P、BN: ($\pm 10\%$)

X7R、Y5R: ($\pm 15\%$)

Y5U: (+22%~-56%)

Y5V: (+22%~-82%)

5 Chip Diameter Code: 芯片直径代码:

Display/示数	D=050	D=060	D=070	D=080	D=090	D=100
Size/尺寸 (mm)	4.5~5.4mm	5.5~6.4mm	6.5~7.4mm	7.5~8.4mm	8.5~9.4mm	9.5~10.0mm

6 Rated Voltage 额定电压:

W=4KV T=6KV Z=8KV V=10KV S=12KV X=15KV

7 Lead Space 引线间距:

5=5.0 mm 7=7.5 mm 0=10.0 mm

8 Lead Style (refer to the attached page) 引线形状 (线型图示见附录)

L: long straight lead M: short straight lead J: single bend K: single outside bend W: double bend

L: 直引线长脚 M: 直引线短脚 J: 单内弯 K: 单外弯 W: 双弯

P: Keep bending

P: 直弯

9 Lead Length 引线长度(mm):

Length categorization of packed and bulk lead (refer to the attached page for the taping picture)

包装及散装引线长度分类(编带图示见附录)

T: Taping 编带 Hole space 孔距:12.7mm

S: Taping 编带 Hole space 孔距:15mm

B: Bulk 散装

Pin Length 切脚长 (Bulk and Short Pin 散装短脚品):

35=3.5 \pm 0.5mm 50=5.0 \pm 0.5mm 80=8.0 \pm 1.0mm 10=10.0 \pm 1.0mm

10 RoHS Symbol 环保标识:

0: Environmentally friendly products (in compliance with RoHS, Reach, and do not contain PAH or phthalates).

环保产品 (符合RoHS、Reach、不含多环芳烃、不含邻苯二甲酸盐)

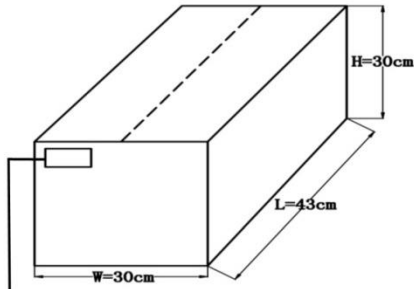
2: RoHS Exemption RoHS 豁免

11~12 Management Code 内部管理码



3 Packing in bulk 包装说明

Outside packing box overlook 外包装箱尺寸

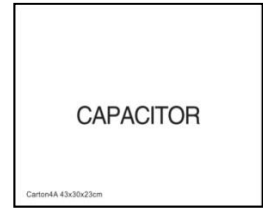


顾客名称	A10 A类	
产品名称	贴片瓷介电容器	
产品代码	DCG331KY5P060TOM350	
顾客编码	F1BAF101A166	
数量	100pcs	
批号	20170607091A	
东莞市易利嘉电子有限公司 Easy-gather Electronic Co., Ltd		

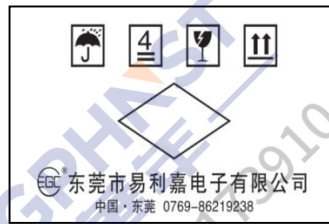
front view 主视图



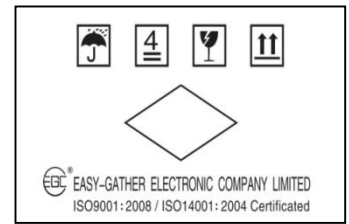
back view 后视图



Left drawing 左视图



Right drawing 右视图



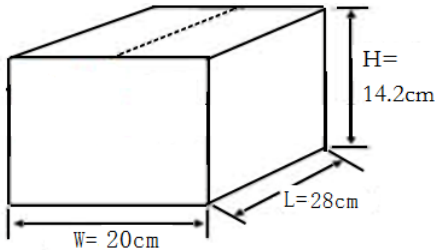
Carton size for bulk packaging 散件包装外箱尺寸: W*L*H=30*43*30cm/30*43*23cm

Carton size for taping packaging 编带包装外箱尺寸: W*L*H=35.5*53*27cm

3.1 Inner packing box 内包装箱尺寸

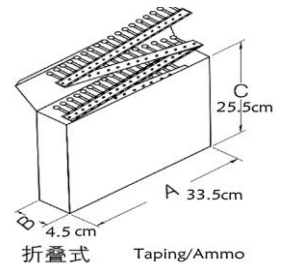
Inner box size for bulk packaging 散件包装内盒尺寸:

W*L*H=20*28*14.2cm/20*28*10cm



Bag package picture Inner box for taping packaging

内袋包装实物图片: 编带包装内盒



3.2 Bag mark photo 内袋标签图示:

1	PART. NO. DCG331KY5P060TOM350	7
2	CUST. P/N 17C-332L02-S80	8
3	CAP. 330pF	9
4	TOL. ±10%	10
5	WV 6KV VDC T.C. Y5P	11
6	QUANTITY, 000 PCS 161227518A	

- 1 PART. NO. 规格代码
- 2 CUST. P/N 客户料号
- 3 RATED CAP. ACITY 标称容量
- 4 RATED VOLTAGE 标称电压
- 5 QUANTITY 包装数量
- 6 LOT NO. 生产批号
- 7 ENVIRONMENT MARK 环保标识
- 8 TOL. ENCE 容量偏差
- 9 Temperature Characteristic 温度特性
- 10 PACKAGE DATE 包装日期
- 11 QC SEAL QC 合格章

4 Regulation in usage 使用规则

Operating and storage environment 使用和储存环境

The insulating coating of capacitors does not form a perfect seal; therefore, do not use or store capacitors in a corrosive atmosphere, especially where chloride gas, sulfide gas, acid, alkali, salt or the likes are present. And avoid exposure to moisture. Before cleaning, bonding, or molding this product, verify that these processes do not affect product quality by testing the performance of a cleaned, bonded or molded product in the intended equipment. Store the capacitors where the temperature and relative humidity do not exceed -10 to 40°C and 15 to 75%.

Being exposed in air for too long may result in attenuation of leads' welding performance.

Please use capacitors within 12 months and the date on packaging label should prevail. If overdue, the capacitors should be confirmed the performance before use.

电容器的绝缘外层不可能完全密封。因此，不要在下列大气环境下使用或者储存电容器：含有腐蚀性气体、特别是放置有含氯气体、含硫气体的地方；放置有酸、碱、盐等物质的地方。也要尽量避免将电容器暴露在潮湿的空气中。在清洗、焊接或者成型产品前要确认这些过程不会影响产品的品质，这种确认可以通过使用特定装备来测试清洗过、焊接过或者成型过的产品。电容器储存温度为-10°C~40°C，相对湿度为 15%~75%。

长时间暴露在空气中会导致产品引线焊接性能衰减。

请在 12 个月内使用电容器(以包装标签日期为准)。如超期，应进行性能确认后再使用。

Vibration and impact 振动和撞击

Do not expose a capacitor or its leads to excessive shock or vibration during use.

使用时，避免电容器及电容器引线受到过多的撞击或者振动。

Soldering 焊接

When soldering this product to a PCB/PWB, do not exceed the solder heat resistance specification of the capacitor. Subjecting this product to excessive heating could melt the internal junction solder and may result in thermal shocks that can crack the ceramic element.

Failure to follow the above cautions may result, worst case in a short circuit and cause fuming or partial dispersion when the product is used.

Welding condition:

(1) Wave-soldering: 260°C ±5°C, 5 seconds at most.

The severe degree of welding do not exceed: 1) 260°C, 8 seconds; 2) 270°C, 3 seconds.)

(2) Solder with the soldering bit: temperature of the tip of soldering iron do not exceed 350°C and time should be less than 5 seconds.

焊接条件:

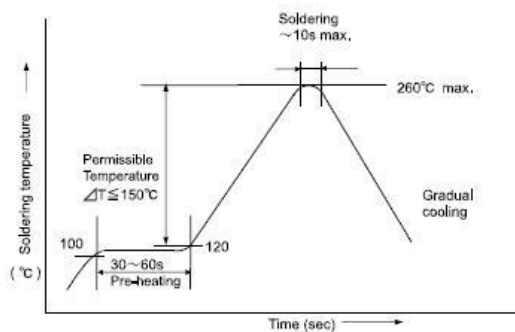
(1) 波峰焊: 260°C ±5°C、焊接时间小于 5S(焊接严酷度不能超过 1) 260°C, 8S; 2) 270°C, 3S)

(2) 使用烙铁焊接: 烙铁尖端温度不超过 350°C, 焊接时间小于 5S。

在把产品焊接到印刷电路板过程中，不要超过电容器规格中有关耐焊接热的规定。如果产品超过耐焊接热可能会熔化用于内部连接的焊料，产生热冲击而导致陶瓷材料破裂。

上述原因导致产品在使用时出现下列最严重的失效现象: 短路引起冒烟或者局部碎裂。

Flow soldering recommended condition



4.1 Sample and environment for test should be confirmed

耐压试验、脉冲试验被试验样品及试验环境应符合:

Temperature 环境温度: 小于 35 °C

Relative humidity 相对湿度: 25~75%

Test sample: The sample is required to store under a maximum relative humidity of 75% for minimum 24 hours.

试验样品: 应在相对湿度不大于 75% 条件下放置 24 小时以上。

5 Characteristics and test conditions 电气特性和测试条件

Test condition: Unless otherwise specified, the standard range of atmospheric Conditions for marking measurements and test is conducted in the following ambient
 测试条件: 除非另有规定, 测试应在下列标准大气条件下进行:

Ambient temperature 环境温度: 15~35 °C Relative humidity 相对湿度: 25~75%.

If there may be any doubt on the results, measurements shall be made within the Following limits.

如对测试结果有任何疑问, 则按以下条件测试: temperature 环境温度: 20±2°C, Relative humidity 相对湿度: 60~70%.

Default frequency of the related alternating current tests: 50Hz

交流电源相关测试默认频率: 50Hz

5.1 Specification and test methods 技术指标及试验方法

No	Item 项目	Test method 试验方法	Specification 技术参数	
1	Appearance 外观	The appearance shall be inspected by naked eyes. 用肉眼检查外观	No marked defect on appearance 外观无显著缺陷	
2	Dimensions 尺寸	The dimensions shall be measured with slide calipers 用游标卡尺测量尺寸	Dimensions of capacitor and taping shall satisfy specified requirement. 电容器的外型尺寸和编带尺寸应满足规定	
3	Marking 标志	The marking shall be checked by 4x magnifying glass. 用4倍放大镜检查标志	Legible marking 标志清晰易辨认	
4	Capacitance and tolerance 容量和误差	The capacitance shall be measured at 25°C with 1±0.2 Vrms. Class I: 100KHz; Class II: 1KHz 电容量测量条件: 25°C, 1±0.2 Vrms I类: 100KHz; II类: 1KHz	Refer to 1.5 参照 1.5	
5	Dissipation factor(D.F) 介质损耗	The dissipation factor shall be measured at 25°C with 1±0.2 Vrms. Class I: 100KHz; Class II: 1KHz 介质损耗测量条件: 25°C, 1±0.2 Vrms. I类: 100KHz; II类: 1KHz	Refer to 1.5 参照 1.5	
6	Insulation resistance 绝缘电阻	绝缘电阻测量条件: 充电 60±5 秒 500±50V	Test A	
			Test B or Test C	
			R (MΩ)	
			10000	
7	Dielectric Strength (Voltage Proof) 耐电压	Between Lead Wires 引线之间	The capacitor should not be damaged when test voltages of table below are applied between the lead wires for 60 sec. 在引线之间施加下表所示试验电压, 施加时间 60s, 电容器不会损坏。	
		Body Insulation 本体绝缘	Type 类型	Test Voltage 试验电压
			DCG	1.5U _R
			First, the terminals of the capacitor should be connected together. Then, as shown in figure below, a metal foil should be closely wrapped around the body of the capacitor to the distance of about 3 to 4mm from each terminal. Then, the capacitor should be inserted into a container filled with metal balls of about 1mm diameter. Finally, DC voltage of table below is applied for 60 sec. between the capacitor lead wires and metal balls. 首先, 电容器引线终端应连接在一起。然后将金属箔紧密缠绕在电容器本体上距各个引出端大约 3 到 4mm 的地方。并将电容器插入充满直径 1mm 金属球的容器内 (如下图所示)。最后, 在电容器引线和金属球之间施加如下表所示的直流电压, 时间 60s.	
			Type 类型	Test Voltage 试验电压
DCG	1.5U _R			
				
		No failure 不允许有失败		



8	Robustness of Termination 引出端强度	<p>The capacitor body shall be held in such a manner so that the axis of the lead is vertical.</p> <p>The tensile force of 5N(for lead of Ø0.56mm)shall be applied to the lead in a direction of its axis and acting in a direction away from the body of the capacitor for 10±1 seconds.</p> <p>使用某种方式固定电容器的本体,并使引线的轴心与本体垂直。为使引线脱离电容器本体,在本体反向引线端沿轴心施加 10N 的拉力(引线直径为 0.56mm),持续 10±1s。</p>	<p>The capacitor shall be no broken and the lead shall be no loosened or cut off.</p> <p>电容器未损坏,并且引线未松动或者断开</p>
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9	Solderability Of leads 引线可焊性	<p>The lead wire of a capacitor should be dipped into molten solder for 2±0.5sec.</p> <p>The depth of immersion is up to about 1.5 to 2.0mm from the root of lead wires.</p> <p>Temp.of solder: Lead Free solder(Sn-3Ag-0.5Cu) 245±5°C H63 Eutectic Solder 235±5°C</p> <p>引线应浸入熔融的焊料里 2±0.5 秒,浸入深度大约为 1.5~2mm(从引线底端算起)</p> <p>焊料温度: 无铅焊料(锡-3 银-0.5 铜) 245±5°C H63 共晶焊料 235±5°C</p>	<p>A new uniform coating of solder shall cover a minimum of 95% of the surface being immersed</p> <p>新的焊料层应均匀覆盖至少 95% 被浸入表面</p>	
10	Resistanceto Soldering heat 耐焊接热	<p>Temperature of solder bath 260±5°C.</p> <p>The immersing depth of lead shall be a position 2-0.5mm from the seating plane,using a thermal screen. The thickness of the screen is 1.5±0.5mm. The immersion time shall be 10±1 seconds.</p> <p>Post-treatment:The capacitor shall be preserved at the standard atmospheric condition for 1 to 2 hours.</p> <p>焊浴温度: 260±5°C。引线浸入深度: 离底座 2-0.5mm。使用隔热板(厚度为 1.5±0.5mm)。浸入时间: 10±1 秒。</p> <p>后处理: 电容器应在标准大气压条件下放置 1-2 小时。</p>	Appearance 外观	No visible damage 没有明显损坏
			Dissipation Factor 介质损耗	As spec 参照规格书
			Capacitance Change 电容量变化 (ΔC/C0)	SL: ≤1% or 1.0 pF Y5P、BN、Y5R: ≤±10% Y5U、Y5V: ≤±20%
			Voltage proof (between leads) 耐电压(引线间)	No failure 不允许有失败
11	Solvent Resistance 耐溶剂性	<p>The capacitor shall be immersed into isopropyl alcohol for 30±5nds.seco</p> <p>电容器应浸入异丙醇中 30±5 秒</p>	Appearance 外观	No visible damage 无明显损坏 Legible marking 标志清晰
12	Damp heat 湿热	<p>The capacitor shall be stored for 21 days (500±8hours) at a temperature of 40°C ±2°C and a relative humidity of 93%.</p> <p>Post-treatment:The capacitor shall be stored for 1 to 2 hours at the standard atmospheric condition.</p> <p>(Temperature:15 to 35°C,Relative humidity:45 to 75%,Atmospheric pressure:86 to 106kPa)</p> <p>在 40°C ±2°C、相对湿度 93%条件下储存电容器 21 天(500±8 小时)。</p> <p>后处理: 在标准大气压下储存电容器 1-2 小时。(温度: 15-35°C, 相对湿度: 45-75%, 大气压力: 86-106 千帕)</p>	Appearance 外观	No visible damage 无明显损坏 Legible marking 标志清晰
			Capacitance Change 电容量变化 (ΔC/C0)	SL: ≤3% or 1 pF Y5P、BN、Y5R: ≤±10% Y5U、Y5V: ≤±20%
			Dissipation Factor 介质损耗	Δtgδ≤200% rated value Δtgδ≤200% 额定值
			I.R.	SL: ≥2500 MΩ Y5P、BN、Y5R、Y5U、Y5V: ≥1000MΩ
			Voltage proof 耐电压	No failure 不允许有失败

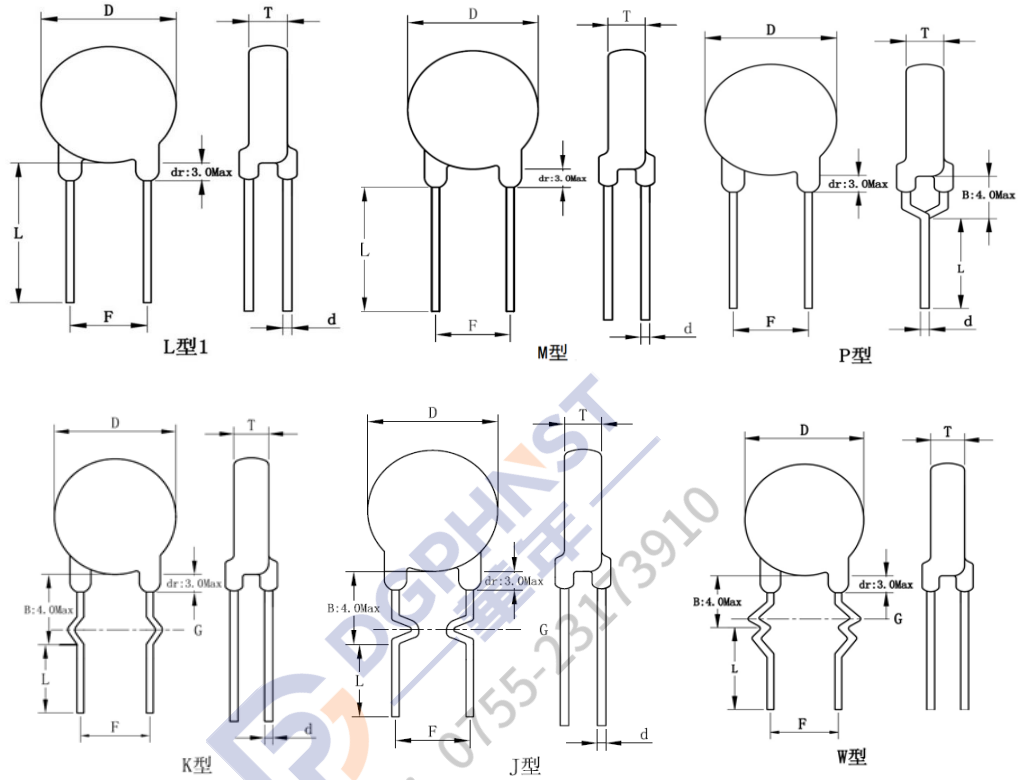


13	Endurance test(life) 耐久性试验 (寿命)	Then the capacitors are placed at a temperature of 125°C for 1000 hours. Throughout the test, the capacitors are subjected 1.5U _R voltages. Post-treatment: the capacitor shall be preserved for 24±2 hours at standard atmospheric condition. 将电容器放置在 125°C 下实验 1000 小时。在整个实验过程中，持续对电容器施加 1.5U _R 电压 后处理：在标准大气压下，电容器恢复 24±2 小时。	Appearance 外观	No visible damage 无明显损坏 Legible marking 标志清晰
			Capacitance Change 电容量变化 (ΔC/C0)	SL: ≤5% or 1pF Y5P、X7R、BN、Y5R: ≤±10% Y5U: ≤±20% Y5V: ≤±30%
			Dissipation Factor 介质损耗	SL: Δtgδ ≤ 150% rated value SL: Δtgδ ≤ 150% 额定值 Y5P、BN、 Y5R、Y5U、Y5V: Δtgδ ≤ 200% rated value Y5P、BN、 Y5R、Y5U、Y5V: Δtgδ ≤ 200% 额定值
			Insulation resistance 绝缘电阻	SL: ≥4000 MΩ Y5P、BN、 Y5R、Y5U、Y5V: ≥2000MΩ
			Voltage proof 耐电压	No failure 不允许有失败



Structure and lead style

产品外型结构、引线式样

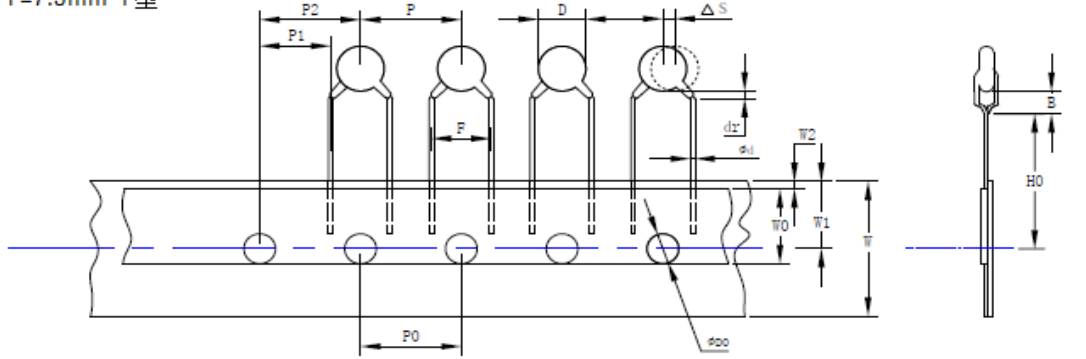


Taping specification

编带产品技术标准

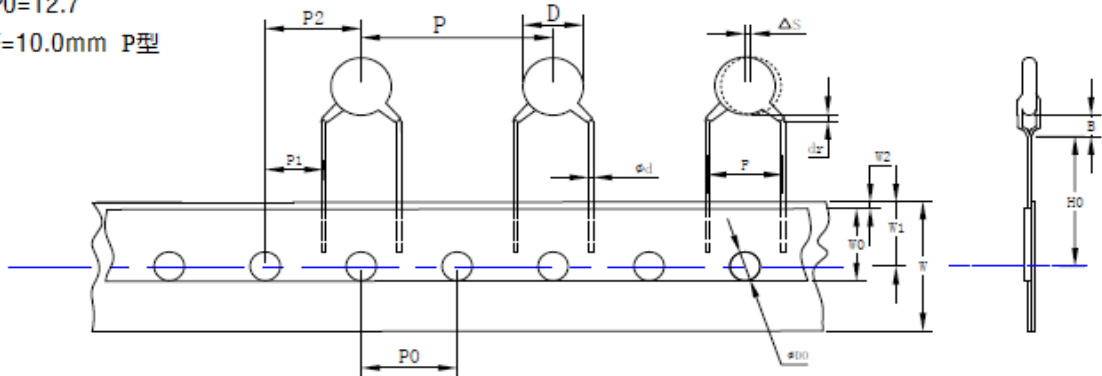
P0=12.7

F=7.5mm P型

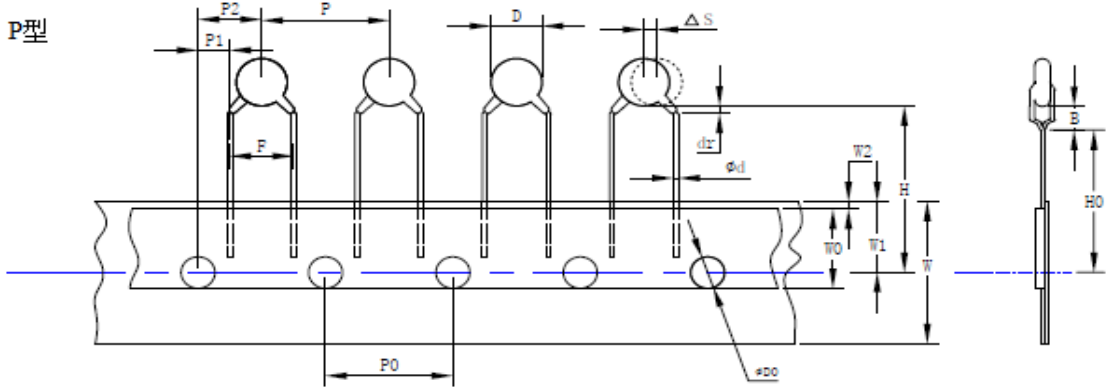


P0=12.7

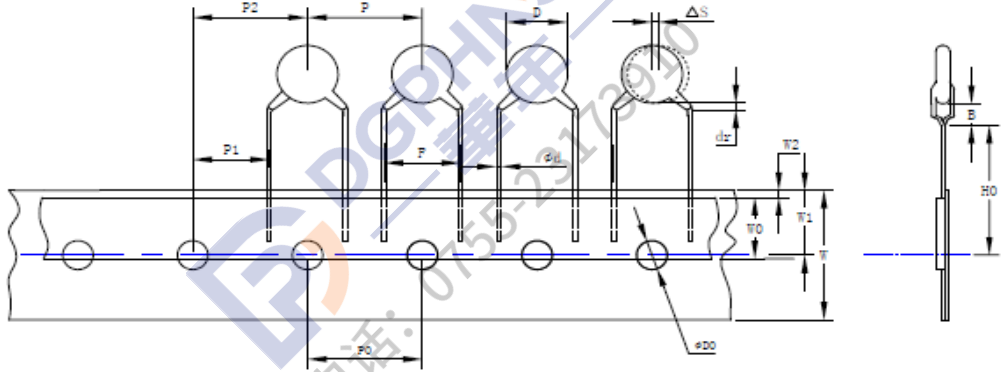
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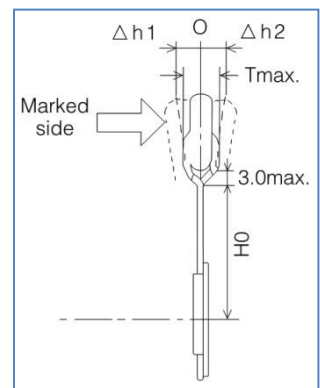
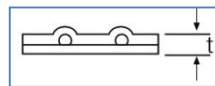
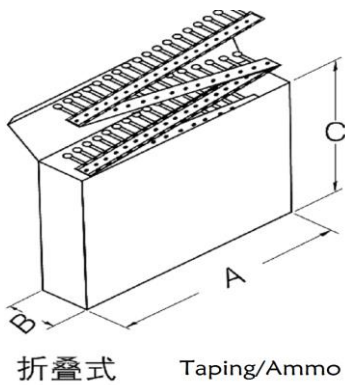
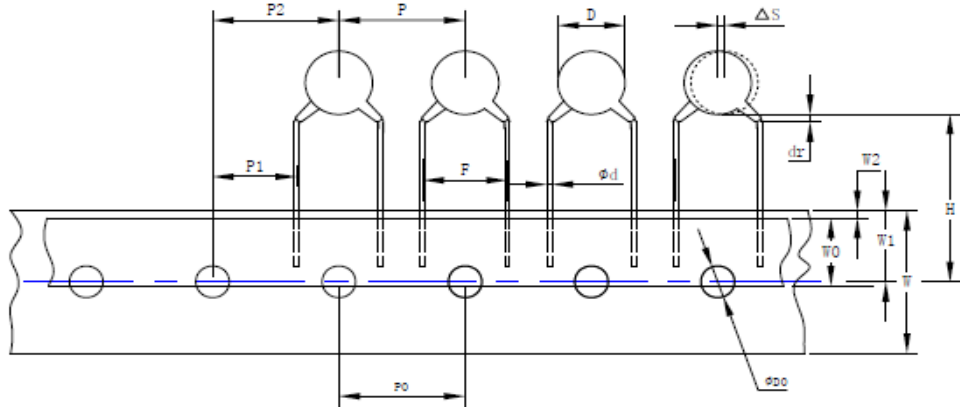
P0=15.0
F=7.5mm P型



P0=15.0mm
F=10.0mm P型



P0=15.0
F=10.0 L形



Type DCG Approval Sheet (single) ---DCG 单品承认书

Taping size sheet 编带尺寸表:(mm)

Type 分类	Symbol 符号	Item 名称	S Taping size requirement S 型编带尺寸要求		T Taping size requirement T 型编带尺寸要求		
Product body 产品本体	F	Lead spacing 引线间距	7.5±1.0	10.0±1.0	5.0±0.5	7.5±1.0	10.0±1.0
	D	Body diameter 本体直径	Refer to spec 见规格表		Refer to spec 见规格表		
	T	Body thickness 产品本体厚度	Refer to spec 见规格表		Refer to spec 见规格表		
	Dr	Coating extension 包封脚长	3.0Max				
	l	Distance of leads inside crimped 引线内弯距离	/	/	2.5/1.5	5.0/4.0	/
	d	Lead diameter 引线直径	0.56±0.05		0.50±0.05	0.50/0.56±0.05	0.56±0.05
Product carrier tape 产品载体	W	Carrier tape width 载带宽度	18.0±0.5				
	t	Total tapethickness 编带总厚度	0.6±0.2				
	WO	Hold down tape width 粘带宽度	8.0±0.5				
	W1	Position of sprocket hole 对输送孔的偏移	9.0±0.5				
	W2	Hold down tape position 粘带边距	1.5±1.5				
	P0	Pitch of sprocket hole 输送孔间距	15.0±0.3		12.7±0.3		
	D0	Diameter of sprocket hole 输送孔直径	4.0±0.3				
Combine product body and product carrier tape 产品本体和载体结合	P	Pitch of component 编带间距	15.0±1.0		12.7±0.3		25.4±1.0
	P1	Length from hole center to lead wire center 对输送孔的偏移	3.75±0.7	10.0±0.7	3.85±0.7	8.95±0.7	7.7±0.7
	P2	Length from hole center to component center 对输送孔的偏移	7.5±1.3	15.0±1.3	6.35±1.3	12.7±1.3	12.7±1.3
	H	Distance between reference 引线弯曲位置高度 (L形引线到产品底部)	20-0+2		20-0+2		
	H0		18.0-0.5+1.5		16.0-0.5+1.5		18.0-0.5+1.5
	ΔS	Deviation along tape 本体倾斜	0±2.0				
	Δh1	Deviation across tape 本体倾斜	2.0Max				
	Δh2	Deviation across tape 本体倾斜	2.0Max				
	B	Distance between the bottom of product body and assembly positioning 产品本体底部与装配定位处距离	Kink 引线:4.0Max				
	ℓ	Protrusion length 突出长度	0.5-1.0		/		

