WEIDY®纬迪

PROFESSIONAL CAPACITOR MANUFACTURER

■ 压敏电阻器

VARISTOES

■ 陶瓷电容器

CERAMIC CAPACITORS

深圳市纬迪实业发展有限公司

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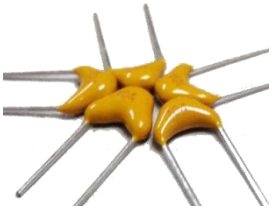

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压敏电阻器
Zinc oxide varistors (IEC 61051-1, UL 1449)

通常我们讲的压敏电阻器，是指氧化锌型压敏电阻器或金属氧化物压敏电阻器。其是一种在一定温度下其电导值随电压的增加而急速增大的元件，该组件具有双向并对称的V-I特性，拥有良好的浪涌吸收能力和非线性的电气特性。

压敏电阻器以氧化锌为主体并添加多种金属氧化物，经过压合和烧结。其主要用途就是保护设备免受瞬时过电压（浪涌）的破坏，当压敏电阻器遭受瞬时过电压时，压敏电阻器会从稳定状态（近似开路）转向限压状态（高导电状态）。

Usually we talk about varistor, is zinc oxide varistor, or metal oxide varistor. Its component for whose conductance at a given temperature increases rapidly with voltage, and this component has a bi-directional and symmetrical V - I characteristic with good surge absorption capability and non-linear electrical characteristics.

The varistor is made of zinc oxide as a main body and a variety of metal oxides are added, after pressing and sintering. The main purpose of the varistor is to protect the device from transient overvoltage (surge) damage, when the varistor is subjected to transient overvoltages; the varistor will shift from a steady state (approximately open) to a regulated state (high conductivity).

特点

- 通过UL/cUL、VDE、CQC全球安全认证
- 标称尺寸规格有05D、07D、10D、14D、20D、25D、32D、34S
- 提供12D、15S、20S、22S、25L等特殊规格供挑选
- 压敏电压范围从18V到1800V
- 可提供通用型、高温型、高能型供选择
- 高温型产品操作温度可达125°C
- 小型紧凑，耐电涌电流量大
- 能响应瞬时浪涌的卓越灵敏度
- 限制电压低，保护效果可靠
- 无续流
- 已应对RoHS指令，无卤
- 可适用于自动化生产线

FEATURES

- Worldwide safety agency certificate: UL/cUL, VDE, CQC
- Nominal dimensions specs: 05D, 07D, 10D, 14D, 20D, 25D, 32D, 34S
- Provide 12D, 15S, 20S, 22S, 25L and other special specifications for selection.
- Varistor voltage range: 18V to 1800V
- General type, high temperature type, high energy type are optional
- Operating temperature range guaranteed up to 125 degrees for high temperature type
- Very large surge withstanding capability with a compact size
- Fast response to steep impulse voltage
- Low clamping voltage for better surge protection
- No follow-on current
- RoHS compliant, halogen-free
- Cost-saving automatic insertion available

用途

- 消费电子产品：电视机、音频输出设备、安全插座、机顶盒等
- 工业产品：马达、半导体元件、继电器、电磁开关、电源线路、三相整流线路、自动控制线路等
- 通信设备：电话机、传真机、交换机等
- 计算机：计算机、显示器、打印机、扫描仪、电源、电源适配器等
- 汽车电子产品

APPLICATIONS

- Consumer electronics products: television, audio output device, Safetry plug, STB etc.
- Industrial products: motor, semiconductor component, relay, electromagnetic switch, power circuit, Three-phase rectifier circuit, automatic control circuit etc.
- Communication equipment: Telephone, facsimile, exchanger etc.
- Computer: computer, displayer, printer, scanister, power supply, adapter etc.
- Automotive electronics products

适用范围

SCOPE OF APPLICATIONS

规格 Specs	规格 Specs	规格 Specs	规格 Specs	规格 Specs	主要用途 Recommended Applications
05D180K 05D220K 05D270K 05D330K 05D390K 05D470K 05D560K 05D680K	07D180K 07D220K 07D270K 07D330K 07D390K 07D470K 07D560K 07D680K	10D180K 10D220K 10D270K 10D330K 10D390K 10D470K 10D560K 10D680K	14D180K 14D220K 14D270K 14D330K 14D390K 14D470K 14D560K 14D680K	20D180K 20D220K 20D270K 20D330K 20D390K 20D470K 20D560K 20D680K	用于低压电路，如用于保护半导体器件、汽车电子产品、DC48V 以下的继电器与电磁阀、静电放电设备、行动电话等 For the low voltage circuit, Such as for the protection of semiconductor devices, automotive electronics, DC48V following relays and solenoid valves, electrostatic discharge equipment, mobile phones, etc.
05D820K 05D101K 05D121K 05D151K	07D820K 07D101K 07D121K 07D151K	10D820K 10D101K 10D121K 10D151K	14D820K 14D101K 14D121K 14D151K	20D820K 20D101K 20D121K 20D151K	用于电话，直流 48V 通信电路电线 Telephone, Communication Line (DC 48 V)
05D181K 05D201K 05D221K	07D181K 07D201K 07D221K	10D181K 10D201K 10D221K	14D181K 14D201K 14D221K	20D181K 20D201K 20D221K	用于交流 100V 线与线间（如日本） AC 100 V Line-Line Applications (Japan etc.)
05D241K 05D271K 05D301K	07D241K 07D271K 07D301K	10D241K 10D271K 10D301K	14D241K 14D271K 14D301K	20D241K 20D271K 20D301K	用于交流 100～120V 线与线间（如日本、美国、加拿大等） AC 100 V to 120 V, Line-Line Applications (Japan, US, Canada etc.)
05D331K 05D361K 05D391K	07D331K 07D361K 07D391K	10D331K 10D361K 10D391K	14D331K 14D361K 14D391K	20D331K 20D361K 20D391K	用于交流 100～120V 线与线间 用于电话（应对 250V 绝缘阻抗测试） AC 100 V to 120 V, Line-Line Applications Telephone Line Applications (For DC 250 V Insulation Resistance Test)
05D431K 05D471K	07D431K 07D471K	10D431K 10D471K	14D431K 14D471K	20D431K 20D471K	用于交流 200～220V 线与线间、线与大地间 AC 200 V to 220 V, Line-Line and Line-Ground Applications
05D561K	07D561K 07D621K 07D681K	10D561K 10D621K 10D681K	14D561K 14D621K 14D681K	20D561K 20D621K 20D681K	用于交流 240V 线与线间、线与大地间（如英国、澳洲、中东等） AC 240 V, Line-Line and Line-Ground Applications (UK, Australia, Middle east etc.)
		10D751K 10D781K 10D821K	14D751K 14D781K 14D821K	20D751K 20D781K 20D821K	用于交流 380V 线与线间、线与大地间 AC 380 V, Line-Line and Line-Ground Applications
		10D911K	14D911K	20D911K	用于交流 415V 线与线间、线与大地间 AC 415 V, Line-Line and Line-Ground Applications
		10D102K 10D112K	14D102K 14D112K	20D102K 20D112K	用于交流 480V 线与线间、线与大地间 AC 480 V, Line-Line and Line-Ground Applications
			14D182K	20D182K	用于线与大地间（应对 1200V 耐压测试） Line-Ground Applications (For AC 1200 V Withstanding Test)

安规认证 SAFETY APPROVAL

认证机构 Certificate Authority	认证标准 Approval standard	证书编号 Certificate No.	认证范围 Certification range		
			规格 Specs	压敏电压 Varistor voltage	最大连续交流电压 Maximum continuous operating voltage a.c.
CQC	GB/T 10193-1997 GB/T 10194-1997	CQC17001165569 CQC17001165568 CQC17001165570 CQC17001165571	07D 10D 14D 20D	820K - 911K 820K - 182K 820K - 222K 820K - 182K	50Vac – 495Vac 50Vac – 1100Vac 50Vac – 10500Vac 50Vac – 1000Vac
VDE	DIN EN 61051-1:2009 IEC 61051-1:2007 IEC 61051-2:1991/AMDI:2009 IEC 61051-2:1991 IEC 61051-2-2:1991	40045960	07D 10D 14D 20D	820K - 911K 820K - 182K 820K - 222K 820K - 182K	50Vac – 550Vac 50Vac – 1100Vac 50Vac – 1340Vac 50Vac – 1100Vac
UL	UL 1449	E490998	07D 10D 14D 20D	820K - 911K 820K - 182K 820K - 112K 820K - 182K	50Vac – 550Vac 50Vac – 1000Vac 50Vac – 680Vac 50Vac – 1000Vac

规格表 SPECIFICATION LIST

■ 低压压敏电阻器(<82V)
Low voltage varistors (<82V)

			瓷片规格 Ceramic chip spec	05D	07D	10D	14D	20D
			额定功率, W Rated power, W	0.01	0.02	0.05	0.10	0.20
			标称脉冲电流(8/20μs), A Nominal pulse current (8/20μs), A	1	2.5	5	10	20
通用型 General type 高温型 Hi-temp. type			1次最大脉冲电流(8/20μs), A 1 time max. pulse current (8/20μs), A	100	250	500	1 000	2 000
			2次最大脉冲电流(8/20μs), A 2 times max. pulse current (8/20μs), A	50	125	250	500	1 000
高能型 Hi-energy type			1次最大脉冲电流(8/20μs), A 1 time max. pulse current (8/20μs), A	250	500	1 000	2 000	3 000
			2次最大脉冲电流(8/20μs), A 2 times max. pulse current (8/20μs), A	100	250	500	1 000	2 000
压敏电压 Varistor voltage	最大连续工作电压 Max continuous operating voltage	最大限制电压 Max clamping voltage						
18 V	11 Vac / 14 Vdc	36 V		○	○	○	○	○
22 V	14 Vac / 18 Vdc	43 V		○	○	○	○	○
27 V	17 Vac / 22 Vdc	53 V		○	○	○	○	○
33 V	20 Vac / 21 Vdc	65 V		○	○	○	○	○
39 V	25 Vac / 31 Vdc	77 V		○	○	○	○	○
47 V	30 Vac / 38 Vdc	93 V		○	○	○	○	○
56 V	35 Vac / 45 Vdc	110 V		○	○	○	○	○
68 V	40 Vac / 56 Vdc	135 V		○	○	○	○	○

规格表 SPECIFICATION LIST

■ 高压压敏电阻器(≥82V)

High voltage varistors (≥82V)

			瓷片规格 Ceramic chip spec	05D	07D	10D	14D	20D	25D	32D	34S
			额定功率, W Rated power, W	0.10	0.25	0.40	0.60	1.00	1.10	1.20	1.40
			标称脉冲电流(8/20μs), A Nominal pulse current (8/20μs), A	5	10	25	50	100	150	200	300
通用型 General type 高温型 Hi-temp. type			1次最大脉冲电流(8/20μs), A 1 time max. pulse current (8/20μs), A	400	1200	2500	4500	6500	15000		
			2次最大脉冲电流(8/20μs), A 2 times max. pulse current (8/20μs), A	200	600	1250	2500	4500	10000		
高能型 Hi-energy type			1次最大脉冲电流(8/20μs), A 1 time max. pulse current (8/20μs), A	800	1750	3500	6000	10000	20000	25000	40000
			2次最大脉冲电流(8/20μs), A 2 times max. pulse current (8/20μs), A	400	1200	2500	4500	6500	15000	20000	30000
压敏电压 Varistor voltage	最大连续工作电压 Max continuous operating voltage	最大限制电压 Max clamping voltage									
82 V	50 Vac / 65 Vdc	135 V		○	○	○	○	○			
100 V	60 Vac / 85 Vdc	165 V		○	○	○	○	○			
120 V	75 Vac / 100 Vdc	200 V		○	○	○	○	○			
150 V	95 Vac / 125 Vdc	250 V		○	○	○	○	○			
180 V	115 Vac / 150 Vdc	300 V		○	○	○	○	○			
200 V	130 Vac / 170 Vdc	340 V		○	○	○	○	○	○	○	○
220 V	140 Vac / 180 Vdc	360 V		○	○	○	○	○	○	○	○
240 V	150 Vac / 200 Vdc	395 V		○	○	○	○	○	○	○	○
270 V	175 Vac / 225 Vdc	455 V		○	○	○	○	○	○	○	○
300 V	195 Vac / 250 Vdc	505 V		○	○	○	○	○	○	○	○
330 V	210 Vac / 275 Vdc	545 V		○	○	○	○	○	○	○	○
360 V	230 Vac / 300 Vdc	595 V		○	○	○	○	○	○	○	○
390 V	250 Vac / 320 Vdc	650 V		○	○	○	○	○	○	○	○
430 V	275 Vac / 350 Vdc	710 V		○	○	○	○	○	○	○	○
470 V	300 Vac / 385 Vdc	775 V		○	○	○	○	○	○	○	○
510 V	320 Vac / 410 Vdc	845 V		○	○	○	○	○	○	○	○
560 V	350 Vac / 450 Vdc	915 V		○	○	○	○	○	○	○	○
620 V	385 Vac / 505 Vdc	1025 V		○	○	○	○	○	○	○	○
680 V	420 Vac / 560 Vdc	1120 V		○	○	○	○	○	○	○	○
750 V	460 Vac / 615 Vdc	1240 V		○	○	○	○	○	○	○	○
780 V	485 Vac / 640 Vdc	1290 V			○	○	○	○	○	○	○
820 V	510 Vac / 670 Vdc	1355 V			○	○	○	○	○	○	○
910 V	550 Vac / 745 Vdc	1500 V				○	○	○	○	○	○
950 V	575 Vac / 765 Vdc	1570 V				○	○	○	○	○	○
1000 V	625 Vac / 825 Vdc	1650 V				○	○	○	○	○	○
1100 V	680 Vac / 895 Vdc	1815 V				○	○	○	○	○	○
1200 V	750 Vac / 1060 Vdc	2000 V				○	○	○	○	○	○
1400 V	880 Vac / 1140 Vdc	2310 V				○	○	○			
1600 V	910 Vac / 1280 Vdc	2640 V				○	○	○			
1800 V	1000 Vac / 1465 Vdc	2970 V				○	○	○			

特点

- ☑ 本产品符合IEC 60384-14标准要求，通过UL、VDE、ENEC和CQC安规认证
- ☑ 操作温度高达125°C
- ☑ 介质耐压强度高，Y1类高达4000Vac、Y2类高达2500Vac
- ☑ 产品规格齐全，容量从10pF至0.01uF
- ☑ 采用UL94 V-0级环氧树脂包封
- ☑ 可适用于自动化生产线
- ☑ 符合RoHS标准，无卤

FEATURES

- ☑ Worldwide safety agency certificate: UL, VDE, ENEC, CQC; Complies with IEC 60384-14 standard
- ☑ Operating temperature range guaranteed up to 125 degrees
- ☑ Dielectric strength: AC2500 for Y2, AC4000V for Y1.
- ☑ Complete range of capacitance values, 10pF to 0.01uF
- ☑ Coated with flame-retardant epoxy resin (conforming to UL94V-0 standard)
- ☑ Cost-saving automatic insertion available
- ☑ Comply with RoHS, Halogen-free available

用途

- ☑ 用作交流线路滤波器以及开关电源和交流转接器初级一次级耦合的X/Y等级电容器。
- ☑ 无变压器DAA调制解调器的D-A绝缘和降噪。

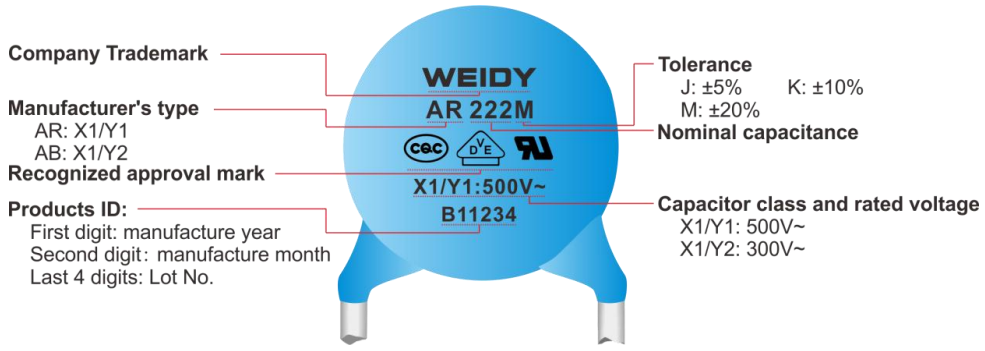
APPLICATIONS

- ☑ Ideal for use as X/Y capacitors for AC line filter and primary-secondary coupling on switching power supplies and AC adapters
- ☑ Ideal for use on D-A isolation and noise absorption for DAA modems without transformers

认证标准与证书 APPROVAL STANDARD AND CERTIFICATE NO.

认证标志 Recognized approval mark	认证标准 Standards	额定电压 Rated voltage	认证证书号 Certificate number
	UL 60384-14	Y1:500V~ Y2:300V~	E334332
	DIN EN 60384-14(VDE 0565-1-1):2014-04 EN 60384-14:2013-08 IEC 60384-14(ed. 4)		Y1: 40046156 Y2: 40046155
	IEC 60384-14:2013		Y1: CQC17001165588 Y2: CQC17001165567

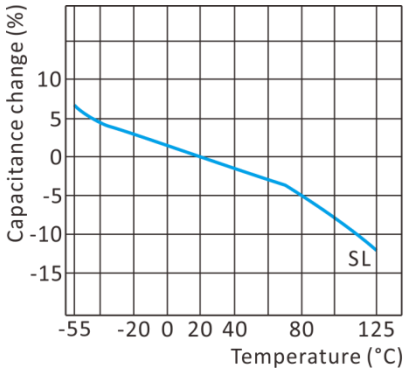
标示 MARKING

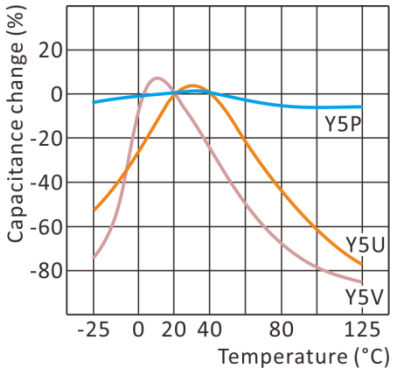


特性 SPECIFICATIONS

		Y1	Y2
类别 Subclass			
工作温度范围 Operating temperature range		-25 °C ～ +125 °C	-25 °C ～ +125 °C
电容量 Capacitance	范围 Range	10pF ～ 4 700pF	10pF ～ 10 000pF
	误差 Tolerance	J (±5%), K (±10%), M (±20%)	J (±5%), K (±10%), M (±20%)
	测量条件 Test conditions	电容量在允许误差范围内，在 25°C 环境下使用 1kHz 1.0Vrms（小于 100pF 使用 1MHz 或 100kHz）的条件进行测量。 Capacitance within the specified tolerance, it's measured at 25°C with 1kHz (less than 100pF, 1MHz or 100kHz) and AC 1.0V (r.m.s.).	
损耗角正切 Tangent of loss angle (tanδ)		0.025 max 测量条件同"电容量" Measured condition see "Capacitance"	
额定电压 Rated Voltage		500Vac	300Vac
耐电压 Dielectric strength		4000Vac 测量 1 分钟，无异常 The capacitor should not be damaged when 4000Vac for 1 minute.	2500Vac 测量 1 分钟，无异常 The capacitor should not be damaged when 2500Vac for 1 minute.
绝缘电阻 Insulation resistance		10 000 MΩ min 使用 500Vdc 测量 1 分钟 Apply 500Vdc for 1 minute	
温度特性 Temperature characteristic		SL, Y5P, Y5U, Y5V	
气候类别 Climatic category		25/125/21	
阻燃等级 Passive flammability category		B	

■ 温度特性典型曲线图 ■ TEMPERATURE CHARACTERISTIC CURVES





■ Y电容的分类 ■ CLASSIFICATION OF CLASS Y CAPACITORS

类别 Subclass	跨接的绝缘类型 Type of insulation bridged	额定电压 Range of rated voltages	试验电压 Voltage proof		耐久性试验前施加的峰值脉冲电压 Peak impulse voltage U_p applied before endurance test
			试验 A Test A	试验 B 或 C Test B or C	
Y1	双重绝缘或增强绝缘 Double insulation or reinforced insulation	≤500Vac	4kVac	4kVac	U_P = 8.0 kV
Y2	基本绝缘或辅助绝缘 Basic insulation or supplementary insulation	≥150Vac ≤500Vac	U_R + 1.2kVac with a minimum of 1.5Vac	U_R + 1.5kVac with a minimum of 2kVac	When $C_R \leq$ 1.0 μF, U_P = 5 kV When $C_R >$ 1.0 μF, $U_P = \frac{5}{\sqrt{C_R}}$ kV
Y4	基本绝缘或辅助绝缘 Basic insulation or supplementary insulation	<150Vac	900Vac	900Vac	U_P = 2.5 kV

注 Remarks:
1. 本表数据来源 IEC 60384-14-2013 表 2 与表 10。
This table data sources IEC 60384-14-2013 Table 2 and Table 10
2. 双重绝缘、增强绝缘、基本绝缘与辅助绝缘的定义见 IEC 61140
For definitions of basic, supplementary, double and reinforced insulation, see IEC 61140

规格表 SPECIFICATION LIST

类别 Class	Y1				Y2			
温度特性 T. C.	SL	Y5P	Y5U	Y5V	SL	Y5P	Y5U	Y5V
误差 Tolerance (%) / 容量 Cap. (pF)	±5% (J)	±10% (K)	±20% (M)	±20% (M)	±5% (J)	±10% (K)	±20% (M)	±20% (M)
10	E				E			
11	E				E			
12	E				E			
13	E				F			
15	F				F			
16	F				F			
18	F				G			
20	F				G			
22	F				G			
24	G				G			
27	H				I			
30	H				E			
33	E				E			
36	E				E			
39	E				F			
43	E				F			
47	F				G			
51	F				G			
56	G				H			
62	G				H			
68	H				I			
75	I				I			
82	I				J			
91	J				K			
100	J	E			K	E		
120		E				E		
150		E				E		
180		E				E		
220		E				E		
270		E				F		
330		E				G		
390		E				G		
470		F	E			H	E	
560		G	E			I	E	
680		H	E			J	G	
820		J	E			K	G	
1 000		J	F	E		L	H	E
1 500			H	F			J	G
2 200			J	G			L	J
3 300			L	H			N	K
4 700			N	K			P	M
5 600				K				
6 800				M				
10 000				O				
15 000								
22 000								
T, mm max.	4.5	4.5	5.0	5.0	5.0	5.5	5.5	5.5
F, ±0.8mm	5.0 7.5	5.0 7.5	7.5 10.0	7.5 10.0	7.5 10.0	10.0	10.0	10.0
D, ±0.05mm	0.55	0.55	0.60	0.60	0.55	0.60	0.60	0.60
L, mm min.	脚长可以根据客户需求订制（没有要求时，脚长不小于 20mm） Lead length by customer requirements (No requirement: 20mm min.)							
包封 Coating	环氧树脂，Epoxy resin							

代码 Code	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
D, mm max.	6.5	7.0	7.5	8.0	8.5	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	18.0

温度补偿型陶瓷电容器
Temperature compensation type ceramic capacitors

WEIDY®

特点

- 符合 GB/T 5966(IEC 60384-8, IDT)标准
- 温度系数呈线性
- 电容量稳定性高
- 在大范围频率应用上损耗低
- 符合 RoHS 2.0 的要求，无卤

Features

- Comply with GB/T 5966 (IEC 60384-8) standards
- Linear temperature coefficient of capacitance
- High stability of capacitance
- Low loss at wide range of frequency
- RoHS 2.0 complied, halogen-free

应用

- 谐振电路
- 高 Q 值需求电路
- 电容量高稳定性电路

Applications

- Resonant circuit
- High Q value requirement
- high stability capacitance characteristics

普通特性

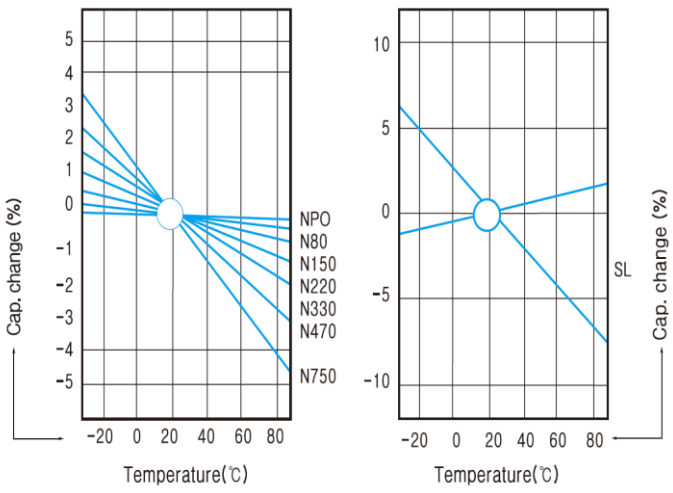
General specifications

操作温度范围 Operating temperature range	-25℃ to +125℃
电容量 (C_R) Capacitance (C_R)	Range: 0.5pF to 1 000pF Tolerance: C(±0.25pF), D(±0.50pF), J(±5%), K(±10%) 在 25±1℃ 下使用 1MHz (100kHz) 1.0Vrms 进行测量，在允许偏差范围内。 Measured at 1MHz (100kHz), 1.0Vrms and 25℃±1℃, within the specified tolerance.
Q 值 Q Value	≥30pF: Q≥1 000 <30pF: Q≥400+20C_R 测量条件同"电容量(C_R)" Measured condition see "Capacitance (CR)"
额定电压(U_R)，DC Rated Voltage (U_R), DC	50V to 6 300V 在两导线间施加下列电压，时间 1s 到 5s（充/放电流小于 50mA）: The capacitor should not be damaged when the following voltage is applied between the lead wires for 1 to 5 sec (Charge / Discharge current ≤50mA). <630V，2.5U_R ≥630V，1.5U_R+500V
绝缘电阻 Insulation Resistance	>10 000MΩ 在两导线间施加额定电压(额定电压大于 500V 时，使用 500V)进行测量，时间不超过 1 分钟（如果绝缘电阻达到要求值时，试验可以在更短的时间内结束）。 The insulation resistance should be measured with a DC voltage not exceeding the rated voltage (above 500V rated voltage tested by 500V) at normal temperature and humidity and less than 1 min. of charging (The test may be terminated in a shorter time, if the required value of insulation resistance is reached).
温度系数 Temperature coefficient	NPO, N80, N150, N220, N330, N470, N750, SL etc.

■ 温度系数表
Temperature coefficient Chart

T.C.	10^{-6}/K	EIA Code	IEC Code
NPO	0±60	C0H	CH
N80	-75±30	U1G	UG
N150	-150±60	P2H	PH
N220	-220±60	R2H	RH
N330	-330±60	S2H	SH
N470	-470±60	T2H	TH
N750	-750±120	U2J	UJ
SL	+350~-1000	---	SL

■ 温度系数曲线
Temperature coefficient curve



温度补偿型陶瓷电容器
Temperature compensation type ceramic capacitors

WEIDY®

电容量与尺寸规格表
Capacitance and Dimension Chart

额定电压，VDC Rated Voltage, VDC		50 / 100						500			1000			2000 / 3000			4000		6300	
温度系数 Temperature coefficient		NP0	N150	N220	N470	N750	SL	NP0	N750	SL	NP0	N750	SL	NP0	N750	SL	NP0	SL	NP0	SL
容量(pF) Cap.(pF)	误差 Tol.																			
0.5		B						C			C			D			D			
1.0	±0.25pF	B						C			C			D	C		D		D	D
⋮	±0.5pF	B						C			C			D	C		D	D	D	D
9.1		B						C			C			D	C		D	D		
10		B						C			C			D	C		D	D	D	D
11	±5%	B						C			C			D	C		D	D	D	D
12	±10%	B	B					C			C			D	C		D	D	D	D
13		B	B					C			C			D	C		D	D	D	D
15		B	B	C				C			C	C		D	D		D	D	E	D
16	±5%	B	B	C				C			C	C		D	D		E	D	E	D
18	±10%	B	B	C		B		C	C		C	C		D	D		F	D	E	D
20		B	B	C	C	B		C	C		C	C		D	D		F	D	E	D
22		B	B	C	C	B		C	C		C	C		D	D		F	D	G	D
24	±5%	B	B	C	C	B		C	C		C	C		E	F		H	D	G	D
27	±10%	B	B	C	C	B		C	C		C	C		E	F		J	D	G	D
30		B	B	C	C	B		C	C		D	C		G	G	D	J	D	H	D
33		B	B	C	C	B		C	C		D	C		G	G	D	K	D	J	D
36	±5%	B	B	C	C	B		D	C		D	D		G	G	D	L	D	L	D
39	±10%	B	B	C	C	B		D	C		D	D		G	G	D	L	D	L	D
43		B	B	D	C	B		D	D	C	D	D		G	H	D	M	D	L	H
47		C	C	E	C	B		D	D	C	D	E	C	G	J	D	M	E	M	H
51	±5%	C	C	E	C	B		D	E	C	G	E	C	H	J	D	N	E	O	G
56	±10%	C	C	E	C	B		D	E	C	G	E	C	H	J	D	N	F	O	G
62		D	D	E	E	C	B	E	E	C	G	E	C	H	J	F	N	F	P	G
68		D	D	G	E	C	B	G	E	C	G	E	C	H	J	F	O	G	P	G
75	±5%	D	D	G	F	C	B	G	G	C	G	G	C	J	L	H	O	G	P	I
82	±10%	D	D	G	G	C	B	G	G	C	G	G	C	J	L	H	P	H	Q	I
91		E	E	J	G	E	B	H	G	C	H	G	D	L	L	H	P	I	R	K
100		E	E	J	G	E	B	H	G	C	H	G	D	L	L	H	P	I	R	K
110	±5%	G	G	J	H	F	B	K	I	D	I	I	F			J		K		K
120	±10%	G	G	J	J	F	B	K	I	D	I	I	F			J		K		K
130		G	G	J	J	F	B	K	I	D	I	I	F			J		K		L
150		H	H	L	J	F	C	K	I	D	I	K	F			J		K		L
160	±5%	J	J	L	J	I	C		K	F	K	K	F			K		L		L
180	±10%	J	J	L	L	I	C		K	F	K	K	G			K		L		N
200		J	J	N	L	I	C		L	F	K	K	G			K		N		O
220		K	L	N	N	K	D		M	G	L	L	G			K		O		P
240	±5%	K	L		N	K	D			H	L	L	H			K		O		Q
270	±10%	K	L		N	K	E			H	L	L	H			K		O		Q
300		L	M			K	G			J			J			K				
330		L	M			K	G			J			J			P				
360	±5%	N					G			J			J			P				
390	±10%	N					G			J			J			P				
430							G			K			K			P				
470							I			K			K			P				
510	±5%						I			L			L							
560	±10%						I			L			L							
620							K			O			O							
680							K			P										
750	±5%						K													
820	±10%						K													
910							K													
1000	±10%						N													
1200	±20%						N													
T, mm max.		3.0						3.5			4.0			4.5			5.0		6.0	
F, ±0.8mm		2.5 / 5.0						5.0			5.0 / 7.5			7.5 / 10.0			7.5 / 10.0		10.0	
D, ±0.05mm		0.40						0.45			0.50			0.50			0.55		0.60	
L, mm min.		脚长可以根据客户需求订制（没有要求时，酚醛包封脚长不小于 16mm；环氧树脂包封脚长不小于 20mm） Lead length by customer requirements (No requirement: 16mm min. by Phenolic resin coating; 20mm min. by Epoxy resin coating).																		
包封 Coating		酚醛树脂 Phenolic resin						酚醛或环氧树脂 Phenolic resin Epoxy resin			环氧树脂 Epoxy resin			环氧树脂 Epoxy resin			环氧树脂 Epoxy resin		环氧树脂 Epoxy resin	

代码 **Code**	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
D, mm max.	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	18.0

特点

- 符合 GB/T 5968(IEC 60384-9, IDT)的要求
- 非线性温度特性
- 尺寸小容量大
- 符合 RoHS 2.0 的要求，无卤

Features

- Comply with GB/T 5968 (IEC 60384-9) standards
- Nonlinear temperature coefficient of capacitance
- Large capacitance in small sizes
- RoHS 2.0 complied, halogen-free

应用

- 旁路和耦合电路
- 对电容量稳定性和损耗要求不高的电路

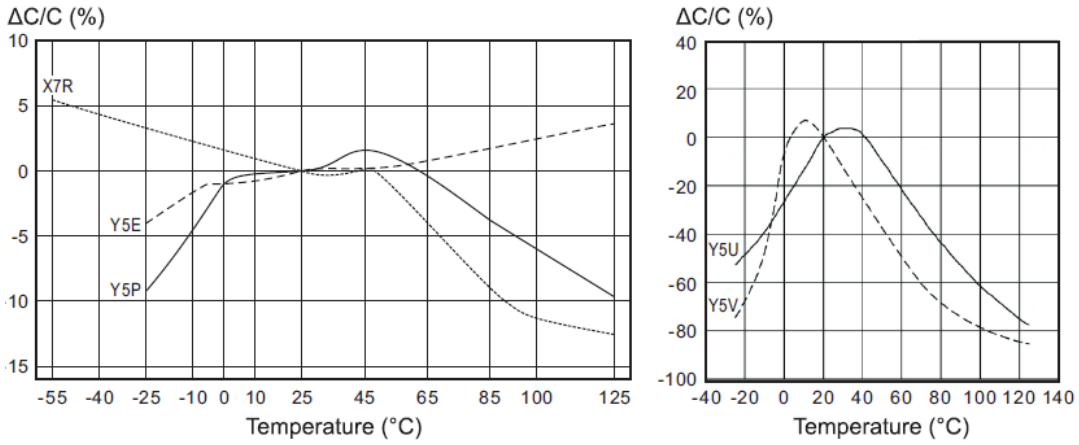
Applications

- By-pass and coupling
- Frequency discriminating circuits where Q and stability of capacitance characteristic are not major importance

特性 / Specifications

操作温度范围 Operating temperature range	-25°C to +85°C (X7R: -55°C to +125°C)
电容量 (C_R) Capacitance (C_R)	Range: 100pF to 0.1uF Tolerance: K(±10%), M(±20%), Z(+80/-20%) 在 25±1°C 下使用 1kHz 1.0Vrms 进行测量，在允许偏差范围内 Measured at 1kHz, 1.0Vrms and 25°C±1°C, within the specified tolerance
损耗角正切(tanδ) Tangent of loss angle (tanδ)	≤0.035 测量条件同"电容量(C_R)" Measured condition see "Capacitance (CR)"
额定电压(U_R)，DC Rated Voltage (U_R), DC	50V to 6 300V 在两导线间施加下列电压，时间 1s 到 5s（充/放电流小于 50mA） The capacitor should not be damaged when the following voltage is applied between the lead wires for 1 to 5 sec (Charge / Discharge current ≤50mA) <630V，2.5U_R ≥630V，1.5U_R+500V
绝缘电阻 Insulation Resistance	>6 000MΩ 在两导线间施加额定电压(额定电压大于 500V 时，使用 500V)进行测量，时间不超过 1 分钟（如果绝缘电阻达到要求值时，试验可以在更短的时间内结束） The insulation resistance should be measured with a DC voltage not exceeding the rated voltage (above 500V rated voltage tested by 500V) at normal temperature and humidity and less than 1 min. of charging (The test may be terminated in a shorter time, if the required value of insulation resistance is reached).
温度特性 Temperature characteristic	Y5P, Y5U, Y5V, X7R etc.

- 温度特性曲线
  Temperature characteristic Chart



电容量与尺寸规格表
Capacitance and Dimension Chart

额定电压，VDC Rated Voltage, VDC	50 / 100				500				1000				2000 / 3000				4000				6000			
温度特性 T. C. 容量 Cap. (pF)	Y5P	X7R	Y5U	Y5V	Y5P	X7R	Y5U	Y5V	Y5P	X7R	Y5U	Y5V	Y5P	X7R	Y5U	Y5V	Y5P	X7R	Y5U	Y5V	Y5P	X7R	Y5U	Y5V
100									C				D	D			D	D			D	D		
120									C				D	D			D	D			D	D		
150					C				C				D	D			D	D			D	D		
180					C				C				D	D			D	D			D	D		
220	B	B			C	C			C				D	D			D	D			D	D		
270	B	B			C	C			C				D	D			D	D			D	D		
330	B	B			C	C			C				D	D			D	D			D	D		
390	B	B			C	C			C				D	D			D	D			F	F		
470	B	B			C	C			C	D			D	D			E	E			F	F	D	
560	B	B			C	C			C	D			F	F			F	G			G	G	D	
680	B	B			C	C			C	D			G	G			G	H			H	H	E	
820	B	B			C	C			C	D			G	G			H	H			I	I	F	
1 000	B	B			C	C	C		D	D	C	C	G	G	D	D	I	I	E	E	K	K	F	D
1 200	B	B			E	D	C		F	F	D	C	I	I	E	D	K	K	F	E	L	L	H	F
1 500	B	B			G	E	C		F	J	D	C	J	J	F	D	L	L	G	F	M	M	H	G
1 800	C	C			G	F	C		J	J	D	C	J	J	H	D	M	M	H	F	N	N	K	G
2 200	C	C	B		G	H	C	C	I	J	D	C	K	K	H	D	N	N	I	G	K	K	L	I
2 700	E	E	B		I	H	E	C	L	K	F	D	K	K	I	D			K	G	L	L	N	J
3 300	E	E	B		I	K	E	C	L	K	F	D	L	L	J	G			L	H	N	N	O	K
3 900	F	F	B		I	K	E	C	N	K	G	D	O	O	K	G			L	I	O	O		L
4 700	G	G	B	B	K	K	G	E	N	L	G	I	O	O	K	J			O	J	P	P		N
5 600	H	H	C	B	L	L	H	E	O	L	H	I	Q		L	K			P	K	Q	Q		N
6 800	J	J	D	B	M	M	H	G	O	S	K	K	S		N	K			Q	K	R	R		O
8 200	L	L	E	C	N	N	K	I	S	S	N	K	S		O	L			R	L	S	S		S
10 000	L	L	E	G	N	N	K	I	S	S	N	Q	S		O	O			S	N	S	S		S
15 000				J			N	N			Q	Q				S				O				
22 000							O	O												P				
33 000							R	P				Q												
47 000							S	S				S												
68 000								S																
100 000																								
150 000																								
误差（%） Tolerance (%)	±10 ±20		±20 +80/-20		±10 ±20		±20 +80/-20		±10 ±20		±20 +80/-20		±10 ±20		±20 +80/-20		±10 ±20		±20 +80/-20		±10 ±20		±20 +80/-20	
T, mm max.	3.0				3.5				4.0				4.5				5.0				6.0			
F, ±0.8mm	2.5 / 5.0				5.0				5.0 / 7.5				7.5 / 10.0				7.5 / 10.0				10.0			
D, ±0.05mm	0.40				0.45				0.50				0.50				0.55				0.60			
L, mm min.	脚长可以根据客户需求订制（没有要求时，酚醛包封脚长不小于 16mm；环氧树脂包封脚长不小于 20mm） Lead length by customer requirements (No requirement: 16mm min. by Phenolic resin coating; 20mm min. by Epoxy resin coating).																							
包封 Coating	酚醛树脂 Phenolic resin				酚醛或环氧树脂 Phenolic resin Epoxy resin				环氧树脂 Epoxy resin				环氧树脂 Epoxy resin				环氧树脂 Epoxy resin				环氧树脂 Epoxy resin			

代码 **Code**	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**	**S**	**T**
D, mm max.	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	18.0	20.0	22.0	25.0

应用

- 晶体管化
- 低压旁路、耦合电路
- 可使用在对容量稳定性、绝缘电阻与损耗要求不高的电路

Applications

- Transistorized
- Low voltage electronic circuits for by-pass, coupling
- Frequency determination, in which dielectric losses, Hi-IR and capacitance stability are not major importance

特性 Specifications

操作温度范围 Operating temperature range	-25℃ to +85℃
电容量 (C_R) Capacitance (C_R)	Range: 0.0047uF to 0.47uF Tolerance: K(±10%), M(±20%), Z(+80/-20%) 在 25±1℃ 下使用 1kHz 0.1Vrms 进行测量，在允许偏差范围内。 Measured at 1kHz, 0.1Vrms and 25℃±1℃, within the specified tolerance.
损耗角正切(tanδ) Tangent of loss angle (tanδ)	≤0.050 测量条件同"电容量(C_R)" Measured condition see "Capacitance (CR)"
额定电压(U_R)，DC Rated Voltage (U_R), DC	10V, 12V, 16V, 25V, 50V, 100V 在两导线间施加 1.5 倍额定电压，时间 1s 到 5s（充/放电流小于 50mA）。 The capacitor should not be damaged when 1.5 times rated voltage is applied between the lead wires for 1 to 5 sec (Charge / Discharge current ≤50mA).
绝缘电阻 Insulation Resistance	>1 000MΩ or 25ΩF（取较小值，whichever is smaller） 在两导线间施加额定电压进行测量，时间不超过 1 分钟（如果绝缘电阻达到要求值时，试验可以在更短的时间内结束）。 The insulation resistance should be measured with a DC voltage not exceeding the rated voltage at normal temperature and humidity and less than 1 min. of charging (The test may be terminated in a shorter time, if the required value of insulation resistance is reached).
温度特性 Temperature characteristic	Y5P, Y5U, Y5V etc.

电容量与尺寸规格表
Capacitance and Dimension Chart

温度特性 T. C.	Y5P			Y5U			Y5V			
额定电压，VDC Rated voltage, VDC 容量 Cap. (uF)	10，12，16	25	50	10，12，16	25	50	10，12，16	25	50	100
0.0047	B	B	B							
0.0056	C	C	C							
0.0068	C	C	C							
0.0082	C	C	C							
0.0100	C	C	C	B	B	B		B	B	
0.0120	C	C	C	B	B	C		B	B	
0.0150	C	C	C	B	B	C		B	B	
0.0180	E	E	E	B	C	C		B	B	
0.0220	E	E	E	B	C	C	B	B	B	C
0.0270	E	E	G	B	C	C	B	B	C	C
0.0330	G	G	G	C	C	C	B	B	C	C
0.0390	G	G	I	C	C	E	B	C	C	C
0.0470	G	G	I	C	E	E	B	C	C	C
0.0560	I	I	I	E	E	E	C	C	D	E
0.0680	I	I	J	E	E	G	C	C	D	E
0.0820	J	J	J	E	G	G	C	C	D	E
0.10	L	L	O	E	G	I	C	D	F	I
0.22				J	J	L	J	J	L	M
0.33							M	M		
0.47							M			
误差 Tolerance (%)	±10, ±20			±20			±20, +80/-20			
T, mm max.	3.5									
F, ±0.8mm	2.5 / 5.0									
D, ±0.05mm	0.40									
L, mm min.	脚长可以根据客户需求订制（没有要求时，脚长不小于 16mm） Lead length by customer requirements (No requirement: 16mm min.)									
包封 Coating	酚醛树脂，Phenolic resin									

代码 **Code**	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**	**S**	**T**
D, mm max.	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	18.0	20.0	22.0	25.0

低损耗型陶瓷电容器
Low loss type ceramic capacitors

WEIDY®

概述

- 损耗小发热低
- 介质耐压强度高
- 有铅，但符合 ROHS 标准豁免条款
- 广泛使用于平板电视、监控电路、节能灯、电子整流器及其它高压高频电路

Introduction

- Low loss, less heat
- High dielectric voltage withstanding strength
- Have a lead, but comply with ROHS standard exemption clause
- Widely used in FPTV, monitoring circuit, CFL, electronic ballast and other high voltage, high frequency circuit

特性 Specifications

操作温度范围 Operating temperature range	-25℃ to +85℃
电容量 (C_R) Capacitance (C_R)	Range: 100pF to 0.01uF Tolerance: K(±10%), M(±20%) 在 25±1℃ 下使用 1kHz 1.0Vrms 进行测量，在允许偏差范围内。 Measured at 1kHz, 1.0Vrms and 25℃±1℃, within the specified tolerance.
损耗角正切(tanδ) Tangent of loss angle (tanδ)	Y5P (Bn), ≤0.005; Y5R, ≤0.002 测量条件同"电容量(C_R)" Measured condition see "Capacitance (CR)"
额定电压(U_R)，DC Rated Voltage (U_R), DC	500V ~ 6000V 在两导线间施加 1.5 倍额定电压再加 500V，时间 1s 到 5s（充/放电流小于 50mA）。 The capacitor should not be damaged when 1.5 times rated voltage plus 500V is applied between the lead wires for 1 to 5 sec (Charge / Discharge current ≤50mA).
绝缘电阻 Insulation Resistance	>10 000MΩ 在两导线间施加 500Vdc 进行测量，时间不超过 1 分钟（如果绝缘电阻达到要求值时，试验可以在更短的时间内结束）。 The insulation resistance should be measured with a DC500V at normal temperature and humidity and less than 1 min. of charging (The test may be terminated in a shorter time, if the required value of insulation resistance is reached).
温度特性 Temperature characteristic	Y5P (Bn), Y5R

电容量与尺寸规格表
Capacitance and Dimension Chart

温度特性 T. C.	Y5P (Bn)				Y5R		
额定电压，VDC Rated Voltage, VDC 容量 Cap. (pF)	1kV	2kV 3kV	4kV	6kV	500V	1kV	2kV 3kV
100				G			
120				G			
150		E	E	G			
180		E	E	G		E	E
220	E	E	G	G		E	E
270	E	E	G	G		E	E
330	E	E	G	G		E	E
390	E	E	G	I	D	E	F
470	E	E	I	J	D	E	G
560	E	E	I	K	D	G	H
680	E	G	J	K	E	G	I
820	E	H	K	L	F	I	J
1000	F	H	L	M	F	I	L
1500	H	J	M		H	J	M
2200	J	L	O		J	M	N
3300	K	O	P		L	N	P
4700	N	P			M	P	T
6800	P	R					
10000	R	T					
22000							
误差 Tolerance (%)	±10				±10		
T, mm max.	4.0	4.5	5.0	6.0	3.5	4.0	4.5
F, ±0.8mm	5.0	5.0/7.5	7.5/10	10	5.0	5.0	5.0/7.5
D, ±0.05mm	0.45	0.50	0.55	0.60	0.45	0.45	0.50
L, mm min.	脚长可以根据客户需求订制（没有要求时，脚长不小于 20mm） Lead length by customer requirements (No requirement: 20mm min.)						
包封 Coating	环氧树脂 Epoxy resin						

代码 Code	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
D, mm max.	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	18.0	20.0	22.0	25.0

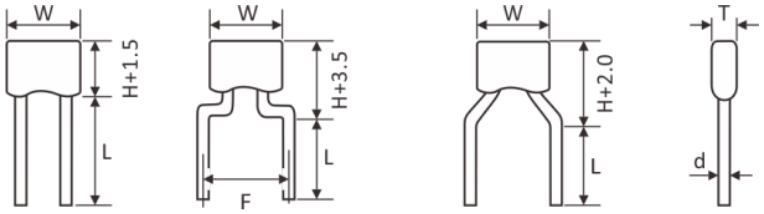
在订购该类产品时，应先与我公司业务充分沟通，将您的需求告诉我们。
When ordering the product, should communicate with my company business, first will tell us your demand.

独石电容器
Radial type leads multilayer ceramic capacitors

独石电容器具有体积小、容量大、耐湿性能优秀的特点，被广泛应用于计算机、数据处理通信和工业控制仪表设备等。

Radial type leads multilayer ceramic capacitors have feathure of small size, large capacitance, and excellent Humidity resistance, its wide application in computer, data processing telecommunication, and industrial control instrumentation equipment.

特性 Characteristic		COG	X7R	Y5V
操作温度范围 Operature temperature range		-55℃ - +125℃	-55℃ - +125℃	-25℃ - +85℃
电容量(C_R) Capacitance(C_R)	范围 Range	1pF to 0.01uF	100pF to 10uF	1000pF to 22uF
	测量条件 Test conditions	电容量在允许偏差范围内，在 25℃ 下使用下于条件进行测量： Capacitance within the specified tolerance, it's measured at 25℃ and below conditions: ≤1000pF: 1MHz, 1.0Vrms >1000pF: 1kHz, 1.0Vrms	电容量在允许偏差范围内，在 25℃ 下使用下于条件进行测量： Capacitance within the specified tolerance, it's measured at 25℃ and below conditions: ≤10uF, 1kHz 1.0Vrms >10uF, 120Hz 1.0Vrms	
损耗角正切(tanδ) Tangent of loss angle (tanδ)		≥30pF: Q≥1 000 <30pF: Q≥400+20C_R	0.035 max	≥50V: 0.075 max <50V: 0.010 max
额定电压(U_R) Rated Voltage(U_R)		50Vdc - 500Vdc	25Vdc - 500Vdc	25Vdc - 100Vdc
耐电压 Test voltage		在两导线间施加 2.5 倍额定电压（额定电压大于 100V 时，使用 1.5 倍额定电压再加 100V）测量无异常，时间 1s 到 5s（充/放电流小于 50mA）： The capacitor should not be damaged when 2.5 times rated voltage (U_R>100V, 1.5 times rated voltage plus 100V) is applied between the lead wires for 1 to 5 sec (Charge / Discharge current ≤50mA).		
绝缘电阻 Insulation Resistance	标准 Specifications	>10 000MΩ	≤0.01uF, 10 000MΩ min >0.01uF, 100MΩuF min	≤0.025uF, 4 000MΩ min >0.025uF, 100MΩuF min
	测量条件 Test conditions	在两导线间施加额定电压进行测量，时间不超过 1 分钟。 The insulation resistance should be measured with a DC voltage not exceeding the rated voltage at normal temperature and humidity and less than 1 minute of charging.		



1. 直脚 Straight Lead　2. 平肩脚 Straight Shoulder Lead　3. 斜肩脚 Slope Shoulder Lead

特性 Characteristic	COG				X7R					Y5V		
额定电压 Rated voltage	50V	100V	250V	500V	25V	50V	100V	250V	500V	25V	50V	100V
容量范围 Capacitance range	010–103	010–472	010–472	010–222	221–106	221–225	101–105	101–224	101–473	102–226	102–106	102–104
W, mm max	4.5 / 6.0											
H, mm max	4.5 / 5.5											
T, mm max	3.8											
F, ±0.8mm	2.5 / 3.5 / 5.0											
L, mm max	20.0 (可以定制, Can be customized)											
d, ±0.05mm	0.50											