

## ■ 引线陶瓷电容器 LEADS CERAMIC CAPACITOR (RADIAL、AXIAL)

### ● 特性FEATURE:

\* 体积小,容量大,适合自动安装的卷带包装。

Miniature size, wide capacitance, tape and reel packaging available for auto-placement.

\* 环氧树脂封装,从而具有优良的抗潮性能,在焊接及清洗时不损坏电容表面。

Coating by epoxy resin, creates the excellent humidity resistance and prevents body from damaging during soldering and washing.

\* 工业生产标准尺寸及多种脚型产品。

Industry standard size and various lead spacing available.

温度特性 T.C	NPO/COG	X7R(B)	Y5V(Y/F)	Z5U(E)
介质种类 DIELECTRIC TYPE	类电介质 STABLE CLASS DIELECTRIC	类电介质 STABLE CLASS DIELECTRIC		
电气性能 ELECTRICAL PROPERTIES	电气性能最稳定,基本上不随温度、电压和时间的改变而改变。 WITH NEGLIGIBLE DEPENDENCE OF ELECTRICAL PRO- PERTIES ON TEMPERATURE、 VOLTAGE、 FREQUENCY AND TIME	电气性能较稳定,在温度、电压与时间改变时性能的变化不显著,能造出比NPO介质容量更大的电容器。 WITH PREDICTABLE CHANGE OF PROPERTIES WITH TEMPERATURE、 VOLTAGE、FREQUENCY AND TIME, THIS DIELECTRIC IS FERRO— ELECTRIC AND OFFERS HIGHER CAPACITANCE RANGES THAN CLASS	具有较高的介电常数,常用于生产比较大、标称容量较高的大容量电容器产品,但其容量稳定性较X7R差,容量损耗对温度、电压等条件较敏感。 WITH HIGH TWIST DIELECTRIC CON- STANT AND GREATER VARIATION OF PROPERTIES WITH TEMPERATURE AND TEST CONDITIONS, VERY HIGH CAPACITANCE PER UNIT VOLUME	
应用 APPLICATION	适用于对稳定性要求高的电路,如温度补偿电路、高频振荡电路等。 USE IN CIRCUITS REQUIRING STABLE PERFORMANCE	适用于隔直、耦合、旁路与对容量稳定性要求不太高的鉴频电路。 USE AS BLOCKING、 COUPLING、BY—PASSING DISCRIMINATING ELEMENT	适用于要求容量较大的电路,如储能、记忆电路等。 SUITED FOR BY—PASSING AND COUPLING APPLICATION SUCH AS STORE POWER AND MEMORY CIRCUIT	
容量范围 CAPACITANCE RANGE	1pF — 10nF	100pF — 5μF	1nF — 14.7μF	
温度系数 OPERATING TEMPERATURE	0±30PPm/ -55 ~+125	±15% -55 ~+125	+30% -80% -25 +85	+22% -56% -10 +85

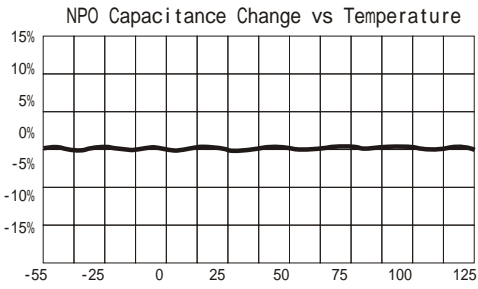


## 容量变化及温度特性、电压、频率曲线图

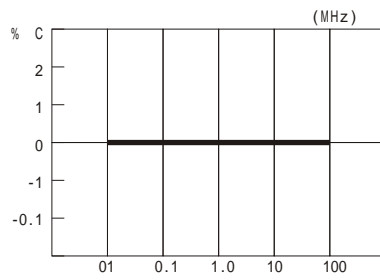
CAPACITANCE CHANGE VS TEMPERATURE CHARACTERISTIC; VOLTAGE; FREQUENCY PROFILES

### • NPO

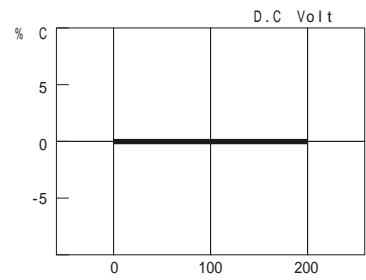
(1) 容量变化及温度特性



(2) 频率(Frequency)

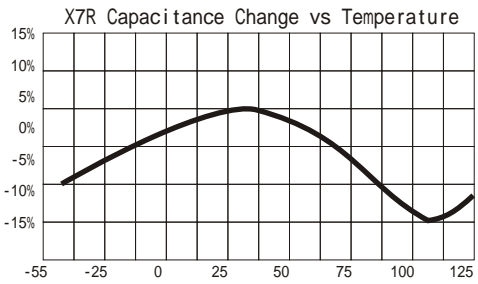


(3) 直流电压(DC voltage)

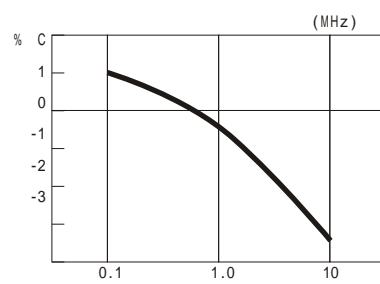


### • X7R

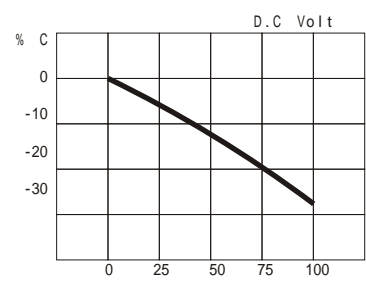
(1) 容量变化及温度特性



(2) 频率(Frequency)

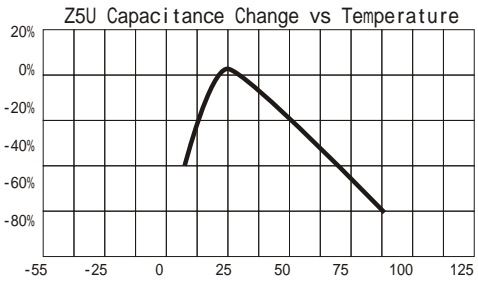


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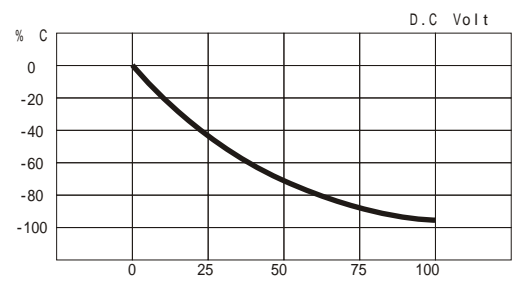


### • Z5U

(1) 容量变化及温度特性



(2) 直流电压(DC voltage)



## ■ 引线陶瓷电容器 LEADS MLCC(RADIAL、AXIAL)

### ● 电性能标准 ELECTRICAL PROPERTIES STANDARD

检验专案 ITEM	检验标准 TEST STANDARD			
	NPO/CG/CH/RH UJ/SL	X7R(B)	Z5U(E)	Y5V(Y/F)
电容量(C) Capacitance	在相应的误差范围内 In the tolerance	在相应的误差范围内 In the tolerance	在相应的误差范围内 In the tolerance	在相应的误差范围内 In the tolerance
损耗角正切(DF) Dissipation Factor	0.15%	3.5%	5%	< 7.5% (220nF以下)
				< 10% (220 ~ 470nF)
				< 15% (470 ~ 1000nF)
绝缘电阻(IR) Insulation Resistance	10nF, IR 10000M C > 10nF R · C 100S	25nF, IR 4000M C > 25nF R · C 100S	25nF, IR 4000M C > 25nF R · C 100S	25nF, IR 4000M C > 25nF R · C 100S
耐电压 Withstanding Voltage	2.5倍额定电压 2.5 rated voltage	2.5倍额定电压 2.5 rated voltage	2.5倍额定电压 2.5 rated voltage	2.5倍额定电压 2.5 rated voltage
测试条件 Test Condition				
测试频率 Test Frequency	1MHz (C > 1000PF 1KHz)	1KHz	1KHz	1KHz
容量损耗测试电压 Test Voltage of Cap.&D.F	1 ± 0.2V	1 ± 0.2V	0.3 ± 0.2V	0.3 ± 0.2V
绝缘电阻测试电压 Test Voltage of IR	额定电压 rated voltage	额定电压 rated voltage	额定电压 rated voltage	额定电压 rated voltage
环境温度 Temperature	18 ~ 25	18 ~ 25	18 ~ 25	18 ~ 25
环境湿度 Humidity	< 75%	< 75%	< 75%	< 75%



• 品质检验项目及可靠性试验

QUALITY ITEM & RELIABILITY INSPECTION

项目 ITEM	检验标准 TEST SPECIFICATIONS		检验方法 TEST METHODS																													
可焊性 Solderability	覆盖率不少于75%。 Termination area shall be at least 75% covered with a new solder coating.		将电容器引线浸入含25%松香的酒精(或异丙醇)溶液后浸入焊槽温度为 235 ±5 的焊锡中 2±0.5 秒, 浸入深度距离电容体2.5~3.0mm。 The lead wire of a capacitor shall be dipped into a 25%methanol solution of rosin and then into molten solder of 235 ±5 for 2±0.5seconds, in both cases the depth of dipping is up to about 2.5 to 3.0 mm from the root of lead.																													
耐焊性 Resistance to soldering heat	外观无可见损伤, 标志清晰 There shall be no evidence of damage or flash over during the test and sign in focus		焊锡温度260 ±5 , 时间5±0.5秒, 插入深度距电容体2.5~3.0mm, 插入速度1秒, 试验后24±2小时测量。 The lead wire shall be immersed into the melted solder of 260 ±5 , up to about 2.5 to 3.0mm from the main body for 5±0.5sec and the specified items shall be measured after leaving for 24±2hours.																													
		<table border="1"> <tr> <td>温度特性T.C.</td> <td>C/C</td> </tr> <tr> <td>CG/CH/RH</td> <td>0.5%或0.5pF</td> </tr> <tr> <td>UJ/SL</td> <td>1%或1pF</td> </tr> <tr> <td>B</td> <td>±10%</td> </tr> <tr> <td>Y(F)/E</td> <td>±20%</td> </tr> </table>	温度特性T.C.	C/C	CG/CH/RH	0.5%或0.5pF	UJ/SL	1%或1pF	B	±10%	Y(F)/E	±20%																				
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耐久性 Life test	外观 Appearance	外观无可见损伤, 标志清晰 There shall be no evidence of damage or flash over during the test and sign in focus.	<table border="1"> <tr> <td>条件 Condition</td> <td>NPO</td> <td>X7R</td> <td>Y5V</td> <td>Z5U</td> </tr> <tr> <td>温度 Temperature</td> <td colspan="2">+125</td> <td colspan="2">+85</td> </tr> <tr> <td>时间 Time</td> <td colspan="4">T=1000h</td> </tr> <tr> <td>电压 Voltage</td> <td colspan="4">V=1.5Vr</td> </tr> <tr> <td>恢复时间 Recovery time</td> <td colspan="4">24±1h</td> </tr> </table>					条件 Condition	NPO	X7R	Y5V	Z5U	温度 Temperature	+125		+85		时间 Time	T=1000h				电压 Voltage	V=1.5Vr				恢复时间 Recovery time	24±1h			
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	容量变化 C/C Capacitance change	NPO: 2%; X7R: 20% Y5V: 30%																														
	D. F.	NPO: 0.3%; X7R: 5% Y5V: 7%																														
	I. R.	R. C>25S																														