

EYANG 宇阳科技

CATALOG 2020

MULTILAYER CERAMIC CHIP CAPACITORS

EYANG

片式多层陶瓷电容器产品手册

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此产品目录中的产品规格品名，包装代码使用“”号代替，完整型号请按需求补齐或与我司联系。

In this catalogue, the packaging code in the specification name is replaced by “*”. The complete name can fill with your demand or contact us.

产品型号规格及代码定义 Part Number System

举例 Sample —— C 0201 C0G 101 J 500 N T A
 1. 2. 3. 4. 5. 6. 7. 8. 9.

1. 产品代码 Product Code

C 表示普通消费品 MLCC.

"C" represents multi-layer ceramic chip capacitor (MLCC) for general uses.

2. 尺寸规格 Size Type Code

尺寸代码 Size Code	GB/IEC/EIA	JIS/EIAJ	长 L/mm	宽 W/mm
0105	01005	0402	0.4	0.2
0201	0201	0603	0.6	0.3
0402	0402	1005	1.0	0.5
0603	0603	1608	1.6	0.8
0805	0805	2012	2.0	1.25
1206	1206	3216	3.2	1.6

3. 温度系数或温度特性 Temperature Coefficient or Temperature Characteristics

应用特性代码 Application Characteristics Code	温度特性 Temperature Characteristics	STD	温度范围 Temp. Range	静电容量变化或 温度系数 Temp. Coeff Or Cap. Change	参考温度 Reference Temperature	工作温度 Operating Temperature
C0G/HQC	C0G	EIA	-55°C ~ +125°C	0±30ppm/°C	25°C	-55°C ~ +125°C
X7R	X7R	EIA	-55°C ~ +125°C	±15%	25°C	-55°C ~ +125°C
X5R/D5R	X5R	EIA	-55°C ~ +85°C	±15%	25°C	-55°C ~ +85°C
X6S	X6S	EIA	-55°C ~ +105°C	±22%	25°C	-55°C ~ +105°C
X7T	X7T	EIA	-55°C ~ +125°C	+22/-33%	25°C	-55°C ~ +125°C

4. 标称电容量代码 Capacitance Code

表示标称电容量（单位：pF），前两位数码为有效数字，后一位数码为 10 的幂数；当标称电容量小于 10pF 时，以字母 R 表示小数点。

如：104=100000pF；4R7=4.7pF；0R5=0.5pF；R75=0.75pF

The capacitance code is expressed in pico-farads and identified by a three-digit number. The first two digits represent significant figure. The last digit specifies the number of zeros following the significant figure.

When the capacitance is lower than 10pF, "R" is applied, standing for decimal point.

Examples:

104=100000pF; 223=22000pF

4R7=4.7pF; 0R5=0.5pF; 5R0=5.0pF; R75=0.75pF.

5. 标称电容量的允许偏差代码 Tolerance Code

代码 Code	静电容量允许偏差 Tolerance	代码 Code	静电容量允许偏差 Tolerance
P	±0.02pF	J	±5%
A	±0.05pF	K	±10%
B	±0.1pF	L	±15%
C	±0.25 pF	M	±20%
D	±0.5pF	N	±30%
F	±1%	X	±40%
G	±2%	Z	+80/-20%

6. 额定电压代码 Rate Voltage Code

额定电压代码的前两位数码为有效数字，后一位数码为 10 的幂数，其中小数点用字母 R 表示。

The first two digits of the rated voltage code are valid digits, and the third digit is a power of ten, where the decimal point is represented by the letter R.

常见电压编码 For example:

代码 Code	2R5	4R0	6R3	100	160	250	350	500	102	202
额定电压 (Vdc) Rated Voltage	2.5	4	6.3	10	16	25	35	50	1000	2000

7. 端电极类型 Termination

N 表示 Cu/Ni/Sn 三层结构(Nickel Barrier).

N represent the “Cu/Ni/Sn” Structure.

8. 包装代码 Packaging Code

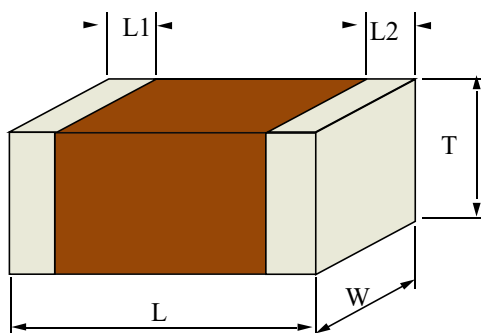
产品尺寸代码 Size Code (EIA)	产品包装代码 Packing code	圆盘尺寸 Disc Size	载带种类 Carrier Tap Type	包装数 QTY (Kpcs)
/	B	/	/	散片 Bulk
01005	T	7”	纸带 Paper	20
	P	7”	塑带 Plastic	40
0201	H	7”	纸带 Paper	10
	T	7”	纸带 Paper	15
	L	7”	纸带 Paper	30
	J	13”	纸带 Paper	50
0402	T	7”	纸带 Paper	10
	J	13”	纸带 Paper	50
	X	13”	纸带 Paper	40
0603	R	7”	塑带 Plastic	3
	W	7”	纸带 Paper	3
	T	7”	纸带 Paper	4
	A	13”	纸带 Paper	15
0805	P	7”	塑带 Plastic	2
	R	7”	塑带 Plastic	3

0805	T	7"	纸带 Paper	4
1206	R	7"	塑带 Plastic	3
	P	7"	塑带 Plastic	2
	T	7"	纸带 Paper	4
	Q	7"	塑带 Plastic	4
1210	P	7"	塑带 Plastic	2
	Z	7"	塑带 Plastic	1
	S	7"	塑带 Plastic	0.5

9. 厚度代码 Thickness Code

产品示意图 >>>

Product schematic diagram



产品尺寸代码 Size Code (EIA)	长度 Length (L)	宽度 Width (W)	端头宽度 L1、L2	厚度 Thickness (T)	厚度代码 Thickness Code
01005	0.40±0.02	0.20±0.02	0.07~0.13	0.20±0.02	Z
0201	0.60±0.03	0.30±0.03	0.1~0.2	0.30±0.03	A
	0.60 ^{+0.05} _{-0.03}	0.30 ^{+0.05} _{-0.03}	0.1~0.2	0.3 ^{+0.05} _{-0.03}	J
	0.60 ^{+0.10} _{-0.03}	0.30 ^{+0.10} _{-0.03}	0.1~0.2	0.3 ^{+0.10} _{-0.03}	X
0402	1.00±0.05	0.50±0.05	0.10~0.35	0.50±0.05	B
	1.00 ^{+0.15} _{-0.05}	0.50 ^{+0.13} _{-0.05}	0.10~0.35	0.50 ^{+0.13} _{-0.05}	N
	1.00 ^{+0.30} _{-0.05}	0.50 ^{+0.30} _{-0.05}	0.10~0.35	0.50 ^{+0.30} _{-0.05}	C
0603	1.60±0.10	0.80±0.10	0.15~0.60	0.80±0.10	D
	1.60 ^{+0.20} _{-0.10}	0.80 ^{+0.20} _{-0.10}	0.15~0.60	0.80 ^{+0.20} _{-0.10}	K
	1.60 ^{+0.30} ₋₀	0.80 ^{+0.30} ₋₀	0.20~0.60	0.80 ^{+0.30} ₋₀	W
0805	2.00±0.20	1.25±0.20	0.20~0.75	0.85 ^{+0.15} _{-0.35}	Y
	2.00 ^{+0.20} _{-0.30}	1.25 ^{+0.20} _{-0.30}	0.20~0.75	1.25 ^{+0.20} _{-0.30}	H
1206	3.20±0.20	1.60±0.20	0.25~0.75	0.85 ^{+0.15} _{-0.35}	Y
	3.20±0.20	1.60±0.20	0.25~0.75	1.15±0.20	O
	3.20±0.20	1.60±0.20	0.25~0.75	1.60±0.20	L
1210	3.20±0.20	2.50±0.20	0.25~0.75	1.60±0.20	L
	3.20±0.20	2.50±0.20	0.25~0.75	2.00±0.20	Q
	3.20±0.20	2.50±0.20	0.25~0.75	2.50±0.20	R

温度补偿型片式多层陶瓷电容器系列

Temperature Compensated MLCC

尺寸范围 Size: 01005~0402

额定电压范围 Rated Voltage: 25~50Vdc

静电容量范围 Capacitance: 0.2 pF~1nF

特点 Characteristics

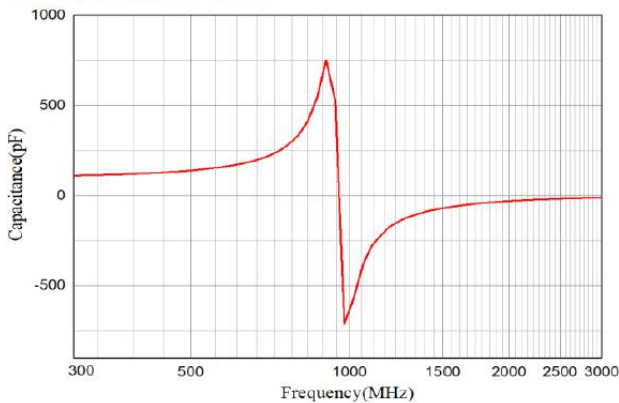
- ❖ 高可靠性、高稳定性、低损耗 High reliability, high stability and low dissipation
- ❖ 容值范围宽 Wide range of capacitance

应用领域 Application Field

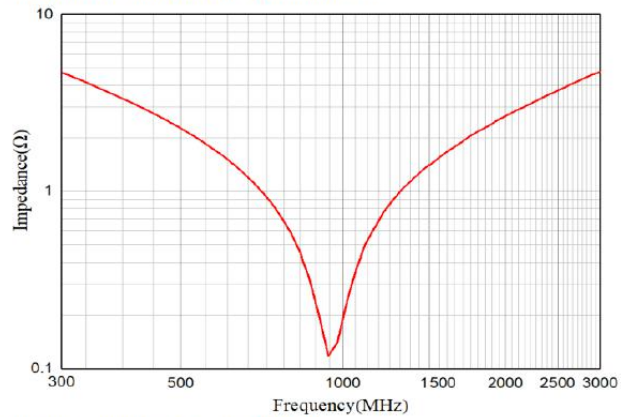
- ❖ 高频滤波电路、LC 振荡电路、调谐电路、RC 带通电路等
- ❖ High frequency filter circuit, LC oscillation circuit, tuning circuit, RC bandpass circuit etc.

高频特性 High Frequency Characteristics

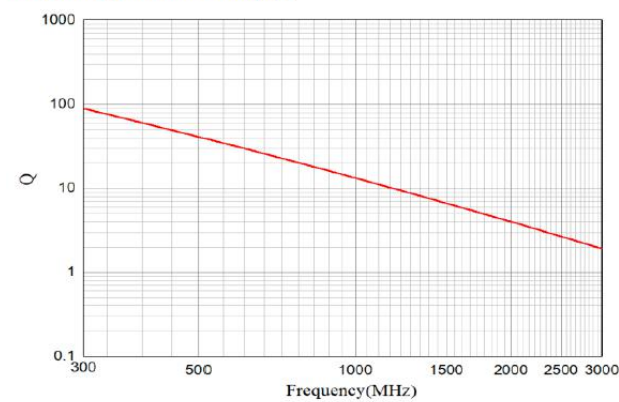
Frequency Characteristics(Cp-f)



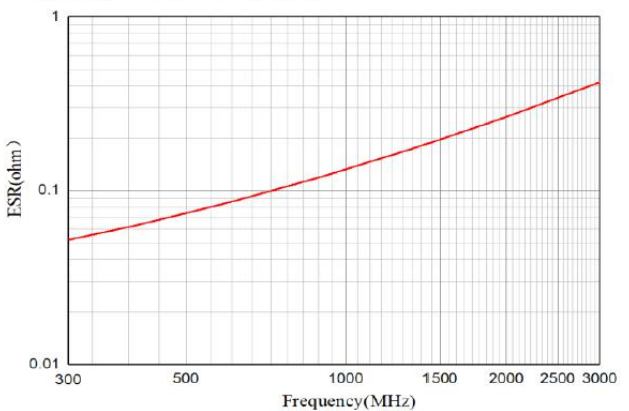
Frequency Characteristics(Impedance-f)



Frequency Characteristics(Q-f)



Frequency Characteristics(ESR-f)



注：上图为 C0G 的 100pF 高频特性。

The figure above shows the high frequency characteristics of C0G,100pF.

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
01005	0.20±0.02	COG	COG	25	0.2pF	±0.05pF	C0105COG0R2A250N*Z
						±0.1pF	C0105COG0R2B250N*Z
						±0.25pF	C0105COG0R2C250N*Z
					0.3pF	±0.05pF	C0105COG0R3A250N*Z
						±0.1pF	C0105COG0R3B250N*Z
						±0.25pF	C0105COG0R3C250N*Z
					0.4pF	±0.05pF	C0105COG0R4A250N*Z
						±0.1pF	C0105COG0R4B250N*Z
						±0.25pF	C0105COG0R4C250N*Z
					0.5pF	±0.1pF	C0105COG0R5B250N*Z
						±0.25pF	C0105COG0R5C250N*Z
					1pF	±0.1pF	C0105COG1R0B250N*Z
						±0.25pF	C0105COG1R0C250N*Z
					1.2pF	±0.1pF	C0105COG1R2B250N*Z
						±0.25pF	C0105COG1R2C250N*Z
					1.5pF	±0.1pF	C0105COG1R5B250N*Z
						±0.25pF	C0105COG1R5C250N*Z
					1.8pF	±0.1pF	C0105COG1R8B250N*Z
						±0.25pF	C0105COG1R8C250N*Z
					2pF	±0.1pF	C0105COG2R0B250N*Z
						±0.25pF	C0105COG2R0C250N*Z
					2.2pF	±0.1pF	C0105COG2R2B250N*Z
						±0.25pF	C0105COG2R2C250N*Z
					2.4pF	±0.1pF	C0105COG2R4B250N*Z
						±0.25pF	C0105COG2R4C250N*Z
					2.7pF	±0.1pF	C0105COG2R7B250N*Z
						±0.25pF	C0105COG2R7C250N*Z
					3pF	±0.1pF	C0105COG3R0B250N*Z
						±0.25pF	C0105COG3R0C250N*Z
					3.6pF	±0.1pF	C0105COG3R6B250N*Z
						±0.25pF	C0105COG3R6C250N*Z
					3.9pF	±0.1pF	C0105COG3R9B250N*Z
						±0.25pF	C0105COG3R9C250N*Z
					5pF	±0.1pF	C0105COG5R0B250N*Z
						±0.25pF	C0105COG5R0C250N*Z
					5.6pF	±0.25pF	C0105COG5R6C250N*Z
						±0.5pF	C0105COG5R6D250N*Z
					6.8pF	±0.25pF	C0105COG6R8C250N*Z
						±0.5pF	C0105COG6R8D250N*Z
					7.5pF	±0.25pF	C0105COG7R5C250N*Z
						±0.5pF	C0105COG7R5D250N*Z
					8.2pF	±0.25pF	C0105COG8R2C250N*Z
						±0.5pF	C0105COG8R2D250N*Z

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
01005	0.20±0.02	COG	COG	25	9pF	±0.25pF	C0105COG9R0C250N*Z
						±0.5pF	C0105COG9R0D250N*Z
					10pF	±5%	C0105COG100J250N*Z
					12pF	±5%	C0105COG120J250N*Z
					15pF	±5%	C0105COG150J250N*Z
					18pF	±5%	C0105COG180J250N*Z
					20pF	±5%	C0105COG200J250N*Z
					22pF	±5%	C0105COG220J250N*Z
					24pF	±5%	C0105COG240J250N*Z
					27pF	±5%	C0105COG270J250N*Z
					33pF	±5%	C0105COG330J250N*Z
					47pF	±5%	C0105COG470J250N*Z
					56pF	±5%	C0105COG560J250N*Z
					68pF	±5%	C0105COG680J250N*Z
					82pF	±5%	C0105COG820J250N*Z
100pF	±5%	C0105COG101J250N*Z					
0201	0.30±0.03	COG	COG	50	0.6pF	±0.05pF	C0201COG0R6A500N*A
						±0.1pF	C0201COG0R6B500N*A
					0.7pF	±0.05pF	C0201COG0R7A500N*A
						±0.1pF	C0201COG0R7B500N*A
					0.75pF	±0.05pF	C0201COGR75A500N*A
						±0.1pF	C0201COGR75B500N*A
					0.8pF	±0.05pF	C0201COG0R8A500N*A
						±0.1pF	C0201COG0R8B500N*A
					1pF	±0.05pF	C0201COG1R0A500N*A
						±0.1pF	C0201COG1R0B500N*A
						±0.25pF	C0201COG1R0C500N*A
					1.2pF	±0.05pF	C0201COG1R2A500N*A
						±0.1pF	C0201COG1R2B500N*A
						±0.25pF	C0201COG1R2C500N*A
					1.5pF	±0.05pF	C0201COG1R5A500N*A
						±0.1pF	C0201COG1R5B500N*A
						±0.25pF	C0201COG1R5C500N*A
					1.8pF	±0.05pF	C0201COG1R8A500N*A
						±0.1pF	C0201COG1R8B500N*A
						±0.25pF	C0201COG1R8C500N*A
					2pF	±0.05pF	C0201COG2R0A500N*A
						±0.1pF	C0201COG2R0B500N*A
						±0.25pF	C0201COG2R0C500N*A
					2.2pF	±0.05pF	C0201COG2R2A500N*A
						±0.1pF	C0201COG2R2B500N*A
						±0.25pF	C0201COG2R2C500N*A
					2.4pF	±0.05pF	C0201COG2R4A500N*A
						±0.1pF	C0201COG2R4B500N*A
						±0.25pF	C0201COG2R4C500N*A

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尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0201	0.30±0.03	COG	COG	50	2.7pF	±0.05pF	C0201COG2R7A500N*A
						±0.1pF	C0201COG2R7B500N*A
						±0.25pF	C0201COG2R7C500N*A
					3pF	±0.05pF	C0201COG3R0A500N*A
						±0.1pF	C0201COG3R0B500N*A
						±0.25pF	C0201COG3R0C500N*A
					3.3pF	±0.05pF	C0201COG3R3A500N*A
						±0.1pF	C0201COG3R3B500N*A
						±0.25pF	C0201COG3R3C500N*A
					3.6pF	±0.05pF	C0201COG3R6A500N*A
						±0.1pF	C0201COG3R6B500N*A
						±0.25pF	C0201COG3R6C500N*A
					3.9pF	±0.05pF	C0201COG3R9A500N*A
						±0.1pF	C0201COG3R9B500N*A
						±0.25pF	C0201COG3R9C500N*A
					4pF	±0.05pF	C0201COG4R0A500N*A
						±0.1pF	C0201COG4R0B500N*A
						±0.25pF	C0201COG4R0C500N*A
					4.3pF	±0.05pF	C0201COG4R3A500N*A
						±0.1pF	C0201COG4R3B500N*A
						±0.25pF	C0201COG4R3C500N*A
					4.7pF	±0.05pF	C0201COG4R7A500N*A
						±0.1pF	C0201COG4R7B500N*A
						±0.25pF	C0201COG4R7C500N*A
					5pF	±0.1pF	C0201COG5R0B500N*A
						±0.25pF	C0201COG5R0C500N*A
						±0.5pF	C0201COG5R0D500N*A
					5.6pF	±0.1pF	C0201COG5R6B500N*A
						±0.25pF	C0201COG5R6C500N*A
						±0.5pF	C0201COG5R6D500N*A
					6.0pF	±0.1pF	C0201COG6R0B500N*A
						±0.25pF	C0201COG6R0C500N*A
						±0.5pF	C0201COG6R0D500N*A
					6.2pF	±0.1pF	C0201COG6R2B500N*A
						±0.25pF	C0201COG6R2C500N*A
						±0.5pF	C0201COG6R2D500N*A
					6.8pF	±0.1pF	C0201COG6R8B500N*A
						±0.25pF	C0201COG6R8C500N*A
					7pF	±0.1pF	C0201COG7R0B500N*A
						±0.25pF	C0201COG7R0C500N*A
						±0.5pF	C0201COG7R0D500N*A
					7.5pF	±0.1pF	C0201COG7R5B500N*A
						±0.25pF	C0201COG7R5C500N*A
						±0.5pF	C0201COG7R5D500N*A
					8pF	±0.1pF	C0201COG8R0B500N*A
						±0.25pF	C0201COG8R0C500N*A
						±0.5pF	C0201COG8R0D500N*A

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0201	0.30±0.03	COG	COG	50	8.2pF	±0.1pF	C0201COG8R2B500N*A
						±0.25pF	C0201COG8R2C500N*A
						±0.5pF	C0201COG8R2D500N*A
					9pF	±0.1pF	C0201COG9R0B500N*A
						±0.25pF	C0201COG9R0C500N*A
						±0.5pF	C0201COG9R0D500N*A
					10pF	±2%	C0201COG100G500N*A
						±5%	C0201COG100J500N*A
					12pF	±2%	C0201COG120G500N*A
						±5%	C0201COG120J500N*A
					15pF	±2%	C0201COG150G500N*A
						±5%	C0201COG150J500N*A
					18pF	±2%	C0201COG180G500N*A
						±5%	C0201COG180J500N*A
					20pF	±2%	C0201COG200G500N*A
						±5%	C0201COG200J500N*A
					22pF	±2%	C0201COG220G500N*A
						±5%	C0201COG220J500N*A
					27pF	±2%	C0201COG270G500N*A
						±5%	C0201COG270J500N*A
					30pF	±2%	C0201COG300G500N*A
						±5%	C0201COG300J500N*A
					33pF	±2%	C0201COG330G500N*A
						±5%	C0201COG330J500N*A
					39pF	±2%	C0201COG390G500N*A
						±5%	C0201COG390J500N*A
					47pF	±2%	C0201COG470G500N*A
						±5%	C0201COG470J500N*A
					56pF	±2%	C0201COG560G500N*A
						±5%	C0201COG560J500N*A
					68pF	±2%	C0201COG680G500N*A
						±5%	C0201COG680J500N*A
					75pF	±2%	C0201COG750G500N*A
						±5%	C0201COG750J500N*A
					82pF	±2%	C0201COG820G500N*A
						±5%	C0201COG820J500N*A
					100pF	±2%	C0201COG101G500N*A
						±5%	C0201COG101J500N*A
					120pF	±2%	C0201COG121G500N*A
						±5%	C0201COG121J500N*A
					150pF	±2%	C0201COG151G500N*A
						±5%	C0201COG151J500N*A
180pF	±2%	C0201COG181G500N*A					
	±5%	C0201COG181J500N*A					
220pF	±2%	C0201COG221G500N*A					
	±5%	C0201COG221J500N*A					

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number					
0201	0.30±0.03	COG	COG	25	270pF	±2%	C0201COG271G250N*A					
						±5%	C0201COG271J250N*A					
					300pF	±2%	C0201COG301G250N*A					
						±5%	C0201COG301J250N*A					
					330pF	±2%	C0201COG331G250N*A					
						±5%	C0201COG331J250N*A					
					390pF	±2%	C0201COG391G250N*A					
						±5%	C0201COG391J250N*A					
					470pF	±2%	C0201COG471G250N*A					
						±5%	C0201COG471J250N*A					
					0402	0.50±0.05	COG	COG	50	0.6pF	±0.05pF	C0402COG0R6A500N*B
											±0.1pF	C0402COG0R6B500N*B
0.7pF	±0.05pF	C0402COG0R7A500N*B										
	±0.1pF	C0402COG0R7B500N*B										
0.75pF	±0.05pF	C0402COGR75A500N*B										
	±0.1pF	C0402COGR75B500N*B										
0.8pF	±0.05pF	C0402COG0R8A500N*B										
	±0.1pF	C0402COG0R8B500N*B										
1pF	±0.05pF	C0402COG1R0A500N*B										
	±0.1pF	C0402COG1R0B500N*B										
	±0.25pF	C0402COG1R0C500N*B										
1.2pF	±0.05pF	C0402COG1R2A500N*B										
	±0.1pF	C0402COG1R2B500N*B										
	±0.25pF	C0402COG1R2C500N*B										
1.5pF	±0.05pF	C0402COG1R5A500N*B										
	±0.1pF	C0402COG1R5B500N*B										
	±0.25pF	C0402COG1R5C500N*B										
1.8pF	±0.05pF	C0402COG1R8A500N*B										
	±0.1pF	C0402COG1R8B500N*B										
	±0.25pF	C0402COG1R8C500N*B										
2pF	±0.05pF	C0402COG2R0A500N*B										
	±0.1pF	C0402COG2R0B500N*B										
	±0.25pF	C0402COG2R0C500N*B										
2.2pF	±0.05pF	C0402COG2R2A500N*B										
	±0.1pF	C0402COG2R2B500N*B										
	±0.25pF	C0402COG2R2C500N*B										
2.4pF	±0.05pF	C0402COG2R4A500N*B										
	±0.1pF	C0402COG2R4B500N*B										
	±0.25pF	C0402COG2R4C500N*B										
2.7pF	±0.05pF	C0402COG2R7A500N*B										
	±0.1pF	C0402COG2R7B500N*B										
	±0.25pF	C0402COG2R7C500N*B										
3pF	±0.05pF	C0402COG3R0A500N*B										
	±0.1pF	C0402COG3R0B500N*B										
	±0.25pF	C0402COG3R0C500N*B										

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0402	0.50±0.05	COG	COG	50	3.3pF	±0.05pF	C0402COG3R3A500N*B
						±0.1pF	C0402COG3R3B500N*B
						±0.25pF	C0402COG3R3C500N*B
					3.6pF	±0.05pF	C0402COG3R6A500N*B
						±0.1pF	C0402COG3R6B500N*B
						±0.25pF	C0402COG3R6C500N*B
					3.9pF	±0.05pF	C0402COG3R9A500N*B
						±0.1pF	C0402COG3R9B500N*B
						±0.25pF	C0402COG3R9C500N*B
					4pF	±0.05pF	C0402COG4R0A500N*B
						±0.1pF	C0402COG4R0B500N*B
						±0.25pF	C0402COG4R0C500N*B
					4.3pF	±0.05pF	C0402COG4R3A500N*B
						±0.1pF	C0402COG4R3B500N*B
						±0.25pF	C0402COG4R3C500N*B
					4.7pF	±0.05pF	C0402COG4R7A500N*B
						±0.1pF	C0402COG4R7B500N*B
						±0.25pF	C0402COG4R7C500N*B
					5pF	±0.1pF	C0402COG5R0B500N*B
						±0.25pF	C0402COG5R0C500N*B
						±0.5pF	C0402COG5R0D500N*B
					5.6pF	±0.1pF	C0402COG5R6B500N*B
						±0.25pF	C0402COG5R6C500N*B
						±0.5pF	C0402COG5R6D500N*B
					6.0pF	±0.1pF	C0402COG6R0B500N*B
						±0.25pF	C0402COG6R0C500N*B
						±0.5pF	C0402COG6R0D500N*B
					6.2pF	±0.1pF	C0402COG6R2B500N*B
						±0.25pF	C0402COG6R2C500N*B
						±0.5pF	C0402COG6R2D500N*B
					6.8pF	±0.1pF	C0402COG6R8B500N*B
						±0.25pF	C0402COG6R8C500N*B
					7pF	±0.1pF	C0402COG7R0B500N*B
						±0.25pF	C0402COG7R0C500N*B
						±0.5pF	C0402COG7R0D500N*B
					7.5pF	±0.1pF	C0402COG7R5B500N*B
						±0.25pF	C0402COG7R5C500N*B
						±0.5pF	C0402COG7R5D500N*B
					8pF	±0.1pF	C0402COG8R0B500N*B
						±0.25pF	C0402COG8R0C500N*B
						±0.5pF	C0402COG8R0D500N*B
					8.2pF	±0.1pF	C0402COG8R2B500N*B
						±0.25pF	C0402COG8R2C500N*B
						±0.5pF	C0402COG8R2D500N*B

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0402	0.50±0.05	COG	COG	50	9pF	±0.1pF	C0402COG9R0B500N*B
						±0.25pF	C0402COG9R0C500N*B
						±0.5pF	C0402COG9R0D500N*B
					10pF	±2%	C0402COG100G500N*B
						±5%	C0402COG100J500N*B
					12pF	±2%	C0402COG120G500N*B
						±5%	C0402COG120J500N*B
					15pF	±2%	C0402COG150G500N*B
						±5%	C0402COG150J500N*B
					18pF	±2%	C0402COG180G500N*B
						±5%	C0402COG180J500N*B
					20pF	±2%	C0402COG200G500N*B
						±5%	C0402COG200J500N*B
					22pF	±2%	C0402COG220G500N*B
						±5%	C0402COG220J500N*B
					24pF	±2%	C0402COG240G500N*B
						±5%	C0402COG240J500N*B
					27pF	±2%	C0402COG270G500N*B
						±5%	C0402COG270J500N*B
					30pF	±2%	C0402COG300G500N*B
						±5%	C0402COG300J500N*B
					33pF	±2%	C0402COG330G500N*B
						±5%	C0402COG330J500N*B
					36pF	±2%	C0402COG360G500N*B
						±5%	C0402COG360J500N*B
					39pF	±2%	C0402COG390G500N*B
						±5%	C0402COG390J500N*B
					47pF	±2%	C0402COG470G500N*B
						±5%	C0402COG470J500N*B
					56pF	±2%	C0402COG560G500N*B
						±5%	C0402COG560J500N*B
					68pF	±2%	C0402COG680G500N*B
						±5%	C0402COG680J500N*B
					75pF	±2%	C0402COG750G500N*B
						±5%	C0402COG750J500N*B
					82pF	±2%	C0402COG820G500N*B
						±5%	C0402COG820J500N*B
					100pF	±2%	C0402COG101G500N*B
						±5%	C0402COG101J500N*B
					120pF	±2%	C0402COG121G500N*B
						±5%	C0402COG121J500N*B
					150pF	±2%	C0402COG151G500N*B
±5%	C0402COG151J500N*B						
180pF	±2%	C0402COG181G500N*B					
	±5%	C0402COG181J500N*B					

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0402	0.50±0.05	COG	COG	50	200pF	±2%	C0402COG201G500N*B
						±5%	C0402COG201J500N*B
					220pF	±2%	C0402COG221G500N*B
						±5%	C0402COG221J500N*B
					270pF	±2%	C0402COG271G500N*B
						±5%	C0402COG271J500N*B
					300pF	±2%	C0402COG301G500N*B
						±5%	C0402COG301J500N*B
					330pF	±2%	C0402COG331G500N*B
						±5%	C0402COG331J500N*B
	360pF				±2%	C0402COG361G500N*N	
					±5%	C0402COG361J500N*N	
	390pF				±2%	C0402COG391G500N*N	
					±5%	C0402COG391J500N*N	
	470pF				±2%	C0402COG471G500N*N	
					±5%	C0402COG471J500N*N	
	560pF				±2%	C0402COG561G500N*N	
					±5%	C0402COG561J500N*N	
	680pF				±2%	C0402COG681G500N*N	
					±5%	C0402COG681J500N*N	
750pF	±2%	C0402COG751G500N*N					
	±5%	C0402COG751J500N*N					
820pF	±2%	C0402COG821G500N*N					
	±5%	C0402COG821J500N*N					
1.0nF	±2%	C0402COG102G500N*N					
	±5%	C0402COG102J500N*N					
	0.50 ^{+0.13} _{-0.05}						

*1 类陶瓷的部分特性说明 Description of partial characteristics of Class 1 dielectric

1 类陶瓷介质由于其材料特性保证，在放置状态下不会存在容量衰减现象（即老化现象），不仅如此，1 类陶瓷介质在低频段（1MHz）的直流偏压特性、温度特性、交流电压特性中均表现出“0”变化（变化率极小， $\alpha_c \leq \pm 30 \text{ppm}/^\circ\text{C}$ ）。因此，1 类陶瓷材料的 AC/DC/TC 特性曲线均展现为直线。

All guaranteed by the material properties, there is no capacity attenuation in the placed state to the Class 1 dielectric. And, at 1MHz, the AC voltage characteristics, DC bias characteristics, temperature characteristics of Class 1 dielectric are Showing a "0" change (Very small rate of change, $\alpha_c \leq \pm 30 \text{ppm}/^\circ\text{C}$). Therefore, the AC/DC/TC characteristics curve of Class 1 dielectric are show as straight line.

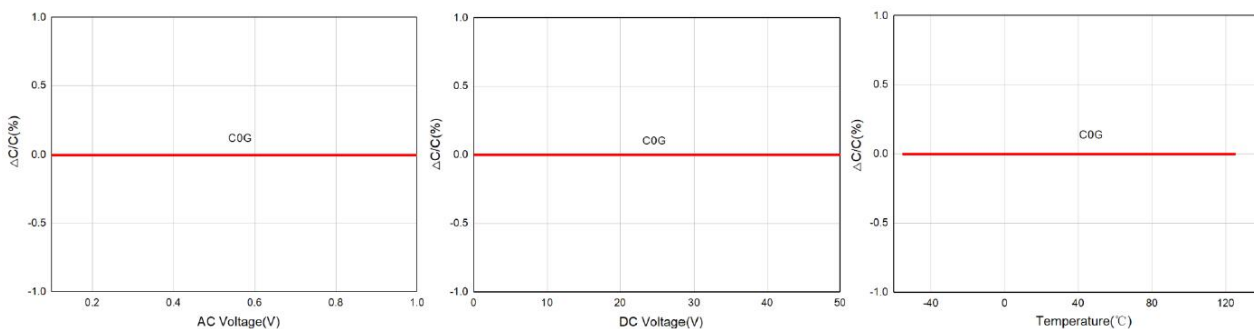


图 COG 的 AC/DC/TC 特性曲 (AC/DC/TC characteristics curve of COG)

RF/微波片式多层陶瓷电容器系列

MLCC for RF and microwave circuit

❖ HQC 系列

HQC 尺寸范围 Size: 01005~0402

HQC 额定电压范围 Rated Voltage: 25~50Vdc

HQC 静电容量范围 Capacitance: 0.1pF~33pF

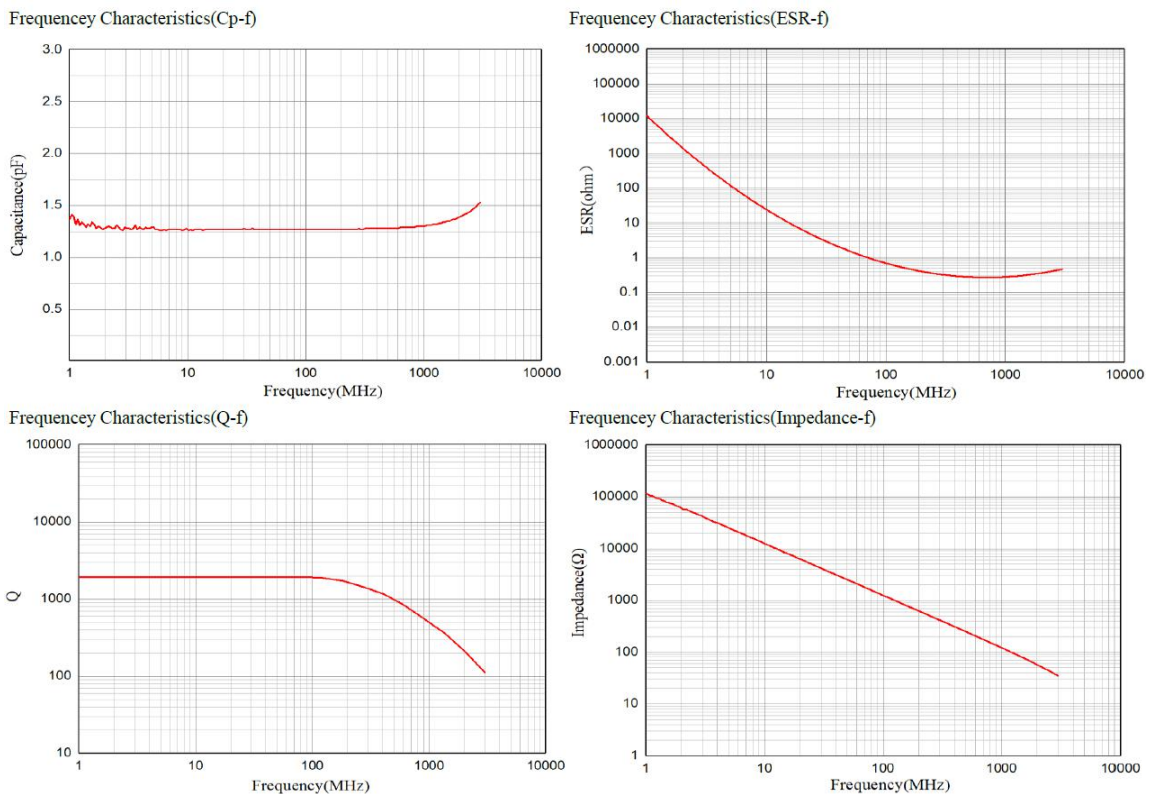
HQC 特点 Characteristics

- ❖ 稳定性超高 Super High stability
- ❖ 超低 ESR Super low ESR
- ❖ 超高 Q 值 Super High Q

HQC 应用领域 Application Field

- ❖ 低损耗、稳定性要求高的高频电路 High-frequency circuit with low loss and high stability requirements
- ❖ 各种射频模块电路 Various RF module circuits

HQC 高频特性 High Frequency Characteristics



注: HQC 的 1.2pF 高频特性。 High frequency characteristics of HQC, 1.2pF.

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 Ur(Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
01005	0.20±0.02	HQC	COG	25	0.2pF	±0.05pF	C0105HQC0R2A250N*Z
						±0.1pF	C0105HQC0R2B250N*Z
						±0.25pF	C0105HQC0R2C250N*Z
					0.3pF	±0.05pF	C0105HQC0R3A250N*Z
						±0.1pF	C0105HQC0R3B250N*Z
						±0.25pF	C0105HQC0R3C250N*Z
					0.4pF	±0.05pF	C0105HQC0R4A250N*Z
						±0.1pF	C0105HQC0R4B250N*Z
						±0.25pF	C0105HQC0R4C250N*Z
					0.5pF	±0.1pF	C0105HQC0R5B250N*Z
						±0.25pF	C0105HQC0R5C250N*Z
					0.8pF	±0.1pF	C0105HQC0R8B250N*Z
						±0.25pF	C0105HQC0R8C250N*Z
					0.9pF	±0.1pF	C0105HQC0R9B250N*Z
						±0.25pF	C0105HQC0R9C250N*Z
					1pF	±0.1pF	C0105HQC1R0B250N*Z
						±0.25pF	C0105HQC1R0C250N*Z
					1.2pF	±0.1pF	C0105HQC1R2B250N*Z
						±0.25pF	C0105HQC1R2C250N*Z
					1.3pF	±0.1pF	C0105HQC1R3B250N*Z
						±0.25pF	C0105HQC1R3C250N*Z
					1.5pF	±0.1pF	C0105HQC1R5B250N*Z
						±0.25pF	C0105HQC1R5C250N*Z
					1.8pF	±0.1pF	C0105HQC1R8B250N*Z
						±0.25pF	C0105HQC1R8C250N*Z
					2pF	±0.1pF	C0105HQC2R0B250N*Z
						±0.25pF	C0105HQC2R0C250N*Z
					2.2pF	±0.1pF	C0105HQC2R2B250N*Z
						±0.25pF	C0105HQC2R2C250N*Z
					2.4pF	±0.1pF	C0105HQC2R4B250N*Z
						±0.25pF	C0105HQC2R4C250N*Z
					2.7pF	±0.1pF	C0105HQC2R7B250N*Z
						±0.25pF	C0105HQC2R7C250N*Z
					3pF	±0.1pF	C0105HQC3R0B250N*Z
						±0.25pF	C0105HQC3R0C250N*Z
					3.6pF	±0.1pF	C0105HQC3R6B250N*Z
						±0.25pF	C0105HQC3R6C250N*Z
					3.9pF	±0.1pF	C0105HQC3R9B250N*Z
						±0.25pF	C0105HQC3R9C250N*Z
					4.7pF	±0.1pF	C0105HQC4R7B250N*Z
						±0.25pF	C0105HQC4R7C250N*Z
					5pF	±0.1pF	C0105HQC5R0B250N*Z
±0.25pF	C0105HQC5R0C250N*Z						

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
01005	0.20±0.02	HQC	COG	25	5.6pF	±0.25pF	C0105HQC5R6C250N*Z
						±0.5pF	C0105HQC5R6D250N*Z
					6.8pF	±0.25pF	C0105HQC6R8C250N*Z
						±0.5pF	C0105HQC6R8D250N*Z
					7.5pF	±0.25pF	C0105HQC7R5C250N*Z
						±0.5pF	C0105HQC7R5D250N*Z
					8.2pF	±0.25pF	C0105HQC8R2C250N*Z
						±0.5pF	C0105HQC8R2D250N*Z
					9pF	±0.25pF	C0105HQC9R0C250N*Z
						±0.5pF	C0105HQC9R0D250N*Z
					10pF	±5%	C0105HQC100J250N*Z
					12pF	±5%	C0105HQC120J250N*Z
					15pF	±5%	C0105HQC150J250N*Z
					18pF	±5%	C0105HQC180J250N*Z
					20pF	±5%	C0105HQC200J250N*Z
22pF	±5%	C0105HQC220J250N*Z					
24pF	±5%	C0105HQC240J250N*Z					
27pF	±5%	C0105HQC270J250N*Z					
33pF	±5%	C0105HQC330J250N*Z					
0201	0.30±0.03	HQC	COG	50	0.1pF	±0.05pF	C0201HQC0R1A500N*A
						±0.1pF	C0201HQC0R1B500N*A
					0.2pF	±0.05pF	C0201HQC0R2A500N*A
						±0.1pF	C0201HQC0R2B500N*A
					0.3pF	±0.05pF	C0201HQC0R3A500N*A
						±0.1pF	C0201HQC0R3B500N*A
					0.4pF	±0.05pF	C0201HQC0R4A500N*A
						±0.1pF	C0201HQC0R4B500N*A
					0.5pF	±0.05pF	C0201HQC0R5A500N*A
						±0.1pF	C0201HQC0R5B500N*A
					0.6pF	±0.05pF	C0201HQC0R6A500N*A
						±0.1pF	C0201HQC0R6B500N*A
					0.7pF	±0.05pF	C0201HQC0R7A500N*A
						±0.1pF	C0201HQC0R7B500N*A
					0.75pF	±0.05pF	C0201HQC0R75A500N*A
						±0.1pF	C0201HQC0R75B500N*A
					0.8pF	±0.05pF	C0201HQC0R8A500N*A
						±0.1pF	C0201HQC0R8B500N*A
					0.9pF	±0.05pF	C0201HQC0R9A500N*A
						±0.1pF	C0201HQC0R9B500N*A
1pF	±0.05pF	C0201HQC1R0A500N*A					
	±0.1pF	C0201HQC1R0B500N*A					
1.2pF	±0.05pF	C0201HQC1R2A500N*A					
	±0.1pF	C0201HQC1R2B500N*A					

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0201	0.30±0.03	HQC	COG	50	1.3pF	±0.05pF	C0201HQC1R3A500N*A
						±0.1pF	C0201HQC1R3B500N*A
					1.5pF	±0.05pF	C0201HQC1R5A500N*A
						±0.1pF	C0201HQC1R5B500N*A
					1.8pF	±0.05pF	C0201HQC1R8A500N*A
						±0.1pF	C0201HQC1R8B500N*A
						±0.25pF	C0201HQC1R8C500N*A
					2pF	±0.05pF	C0201HQC2R0A500N*A
						±0.1pF	C0201HQC2R0B500N*A
						±0.25pF	C0201HQC2R0C500N*A
					2.2pF	±0.1pF	C0201HQC2R2B500N*A
						±0.25pF	C0201HQC2R2C500N*A
					2.4pF	±0.1pF	C0201HQC2R4B500N*A
						±0.25pF	C0201HQC2R4C500N*A
					2.7pF	±0.1pF	C0201HQC2R7B500N*A
						±0.25pF	C0201HQC2R7C500N*A
					3pF	±0.1pF	C0201HQC3R0B500N*A
						±0.25pF	C0201HQC3R0C500N*A
					3.3pF	±0.1pF	C0201HQC3R3B500N*A
						±0.25pF	C0201HQC3R3C500N*A
					3.6pF	±0.1pF	C0201HQC3R6B500N*A
						±0.25pF	C0201HQC3R6C500N*A
					3.9pF	±0.1pF	C0201HQC3R9B500N*A
						±0.25pF	C0201HQC3R9C500N*A
					4pF	±0.1pF	C0201HQC4R0B500N*A
						±0.25pF	C0201HQC4R0C500N*A
					4.3pF	±0.1pF	C0201HQC4R3B500N*A
						±0.25pF	C0201HQC4R3C500N*A
					4.7pF	±0.1pF	C0201HQC4R7B500N*A
						±0.25pF	C0201HQC4R7C500N*A
					5pF	±0.1pF	C0201HQC5R0B500N*A
						±0.25pF	C0201HQC5R0C500N*A
5.6pF	±0.1pF	C0201HQC5R6B500N*A					
	±0.25pF	C0201HQC5R6C500N*A					
6pF	±0.1pF	C0201HQC6R0B500N*A					
	±0.25pF	C0201HQC6R0C500N*A					
6.2pF	±0.1pF	C0201HQC6R2B500N*A					
	±0.25pF	C0201HQC6R2C500N*A					
6.8pF	±0.1pF	C0201HQC6R8B500N*A					
	±0.25pF	C0201HQC6R8C500N*A					
7pF	±0.1pF	C0201HQC7R0B500N*A					
	±0.25pF	C0201HQC7R0C500N*A					

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0201	0.30±0.03	HQC	C0G	50	7.5pF	±0.1pF	C0201HQC7R5B500N*A
						±0.25pF	C0201HQC7R5C500N*A
					8pF	±0.1pF	C0201HQC8R0B500N*A
						±0.25pF	C0201HQC8R0C500N*A
					8.2pF	±0.1pF	C0201HQC8R2B500N*A
						±0.25pF	C0201HQC8R2C500N*A
					9pF	±0.1pF	C0201HQC9R0B500N*A
						±0.25pF	C0201HQC9R0C500N*A
					10pF	±2%	C0201HQC100G500N*A
						±5%	C0201HQC100J500N*A
					12pF	±2%	C0201HQC120G500N*A
						±5%	C0201HQC120J500N*A
					15pF	±2%	C0201HQC150G500N*A
						±5%	C0201HQC150J500N*A
					18pF	±2%	C0201HQC180G500N*A
						±5%	C0201HQC180J500N*A
					20pF	±2%	C0201HQC200G500N*A
						±5%	C0201HQC200J500N*A
22pF	±2%	C0201HQC220G500N*A					
	±5%	C0201HQC220J500N*A					
27pF	±2%	C0201HQC270G500N*A					
	±5%	C0201HQC270J500N*A					
33pF	±2%	C0201HQC330G500N*A					
	±5%	C0201HQC330J500N*A					
0402	0.50±0.05	HQC	C0G	50	0.1pF	±0.05pF	C0402HQC0R1A500N*B
						±0.1pF	C0402HQC0R1B500N*B
					0.2pF	±0.05pF	C0402HQC0R2A500N*B
						±0.1pF	C0402HQC0R2B500N*B
					0.3pF	±0.05pF	C0402HQC0R3A500N*B
						±0.1pF	C0402HQC0R3B500N*B
					0.4pF	±0.05pF	C0402HQC0R4A500N*B
						±0.1pF	C0402HQC0R4B500N*B
					0.5pF	±0.05pF	C0402HQC0R5A500N*B
						±0.1pF	C0402HQC0R5B500N*B
					0.6pF	±0.05pF	C0402HQC0R6A500N*B
						±0.1pF	C0402HQC0R6B500N*B
					0.7pF	±0.05pF	C0402HQC0R7A500N*B
						±0.1pF	C0402HQC0R7B500N*B
					0.75pF	±0.05pF	C0402HQC0R75A500N*B
						±0.1pF	C0402HQC0R75B500N*B
					0.8pF	±0.05pF	C0402HQC0R8A500N*B
						±0.1pF	C0402HQC0R8B500N*B
0.9pF	±0.05pF	C0402HQC0R9A500N*B					
	±0.1pF	C0402HQC0R9B500N*B					

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0402	0.50±0.05	HQC	COG	50	1pF	±0.05pF	C0402HQC1R0A500N*B
						±0.1pF	C0402HQC1R0B500N*B
					1.2pF	±0.05pF	C0402HQC1R2A500N*B
						±0.1pF	C0402HQC1R2B500N*B
					1.3pF	±0.05pF	C0402HQC1R3A500N*B
						±0.1pF	C0402HQC1R3B500N*B
					1.5pF	±0.05pF	C0402HQC1R5A500N*B
						±0.1pF	C0402HQC1R5B500N*B
					1.8pF	±0.05pF	C0402HQC1R8A500N*B
						±0.1pF	C0402HQC1R8B500N*B
						±0.25pF	C0402HQC1R8C500N*B
					2pF	±0.05pF	C0402HQC2R0A500N*B
						±0.1pF	C0402HQC2R0B500N*B
						±0.25pF	C0402HQC2R0C500N*B
					2.2pF	±0.1pF	C0402HQC2R2B500N*B
						±0.25pF	C0402HQC2R2C500N*B
					2.4pF	±0.1pF	C0402HQC2R4B500N*B
						±0.25pF	C0402HQC2R4C500N*B
					2.7pF	±0.1pF	C0402HQC2R7B500N*B
						±0.25pF	C0402HQC2R7C500N*B
					3pF	±0.1pF	C0402HQC3R0B500N*B
						±0.25pF	C0402HQC3R0C500N*B
					3.3pF	±0.1pF	C0402HQC3R3B500N*B
						±0.25pF	C0402HQC3R3C500N*B
					3.6pF	±0.1pF	C0402HQC3R6B500N*B
						±0.25pF	C0402HQC3R6C500N*B
					3.9pF	±0.1pF	C0402HQC3R9B500N*B
						±0.25pF	C0402HQC3R9C500N*B
					4pF	±0.1pF	C0402HQC4R0B500N*B
						±0.25pF	C0402HQC4R0C500N*B
					4.3pF	±0.1pF	C0402HQC4R3B500N*B
						±0.25pF	C0402HQC4R3C500N*B
					4.7pF	±0.1pF	C0402HQC4R7B500N*B
						±0.25pF	C0402HQC4R7C500N*B
					5pF	±0.1pF	C0402HQC5R0B500N*B
						±0.25pF	C0402HQC5R0C500N*B
					5.6pF	±0.1pF	C0402HQC5R6B500N*B
						±0.25pF	C0402HQC5R6C500N*B
					6pF	±0.1pF	C0402HQC6R0B500N*B
						±0.25pF	C0402HQC6R0C500N*B
6.2pF	±0.1pF	C0402HQC6R2B500N*B					
	±0.25pF	C0402HQC6R2C500N*B					
6.8pF	±0.1pF	C0402HQC6R8B500N*B					
	±0.25pF	C0402HQC6R8C500N*B					

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0402	0.50±0.05	HQC	COG	50	7pF	±0.1pF	C0402HQC7R0B500N*B
						±0.25pF	C0402HQC7R0C500N*B
					7.5pF	±0.1pF	C0402HQC7R5B500N*B
						±0.25pF	C0402HQC7R5C500N*B
					8pF	±0.1pF	C0402HQC8R0B500N*B
						±0.25pF	C0402HQC8R0C500N*B
					8.2pF	±0.1pF	C0402HQC8R2B500N*B
						±0.25pF	C0402HQC8R2C500N*B
					9pF	±0.1pF	C0402HQC9R0B500N*B
						±0.25pF	C0402HQC9R0C500N*B
					10pF	±2%	C0402HQC100G500N*B
						±5%	C0402HQC100J500N*B
					12pF	±2%	C0402HQC120G500N*B
						±5%	C0402HQC120J500N*B
					15pF	±2%	C0402HQC150G500N*B
						±5%	C0402HQC150J500N*B
					18pF	±2%	C0402HQC180G500N*B
						±5%	C0402HQC180J500N*B
					20pF	±2%	C0402HQC200G500N*B
						±5%	C0402HQC200J500N*B
					22pF	±2%	C0402HQC220G500N*B
						±5%	C0402HQC220J500N*B
					27pF	±2%	C0402HQC270G500N*B
						±5%	C0402HQC270J500N*B
30pF	±2%	C0402HQC300G500N*B					
	±5%	C0402HQC300J500N*B					
33pF	±2%	C0402HQC330G500N*B					
	±5%	C0402HQC330J500N*B					

高介电常数型片式多层陶瓷电容器系列

High Dielectric MLCCs

X5R 尺寸范围 Size: 01005~1206

X5R 额定电压范围 Rated Voltage: 4~50Vdc

X5R 静电容量范围 Capacitance: 1.5nF~100 μ F

X5R 特点 Characteristics

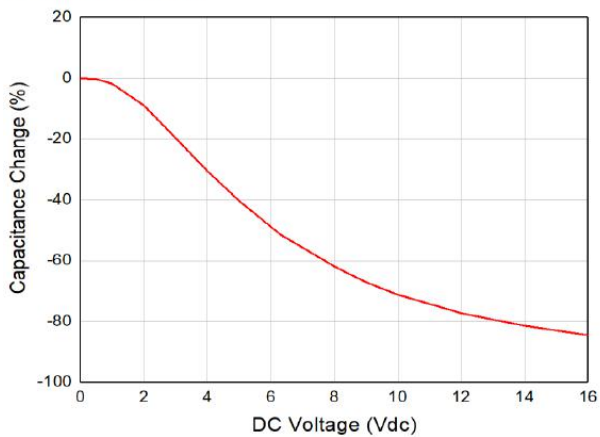
- ❖ 高容值与高可靠性并存
High capacitance and high reliability coexist

X5R 应用领域 Application Field

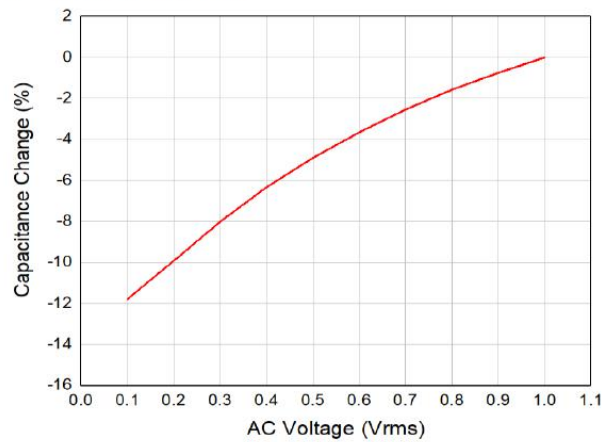
- ❖ 笔记本电脑、电源模块、LCD TV、数码相机、移动通信产品等
Laptops, power modules, LCD TVs, digital cameras, mobile communication products, etc.

X5R 特性曲线 Characteristics Curve

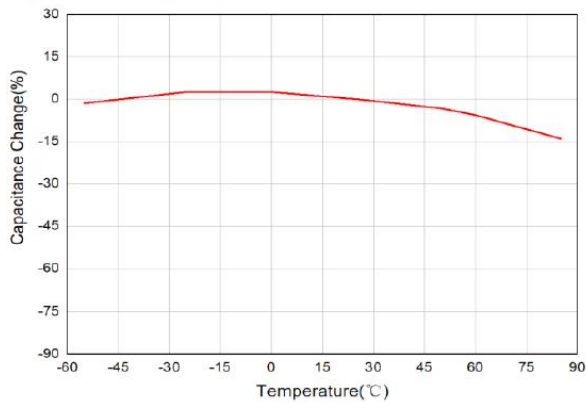
DC Bias Characteristics



AC Voltage Characteristics



Temperature Characteristic



注：上图为 X5R, 100nF 的部分特性。

The figure above shows partial characteristics of X5R, 100nF.

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 Ur(Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
01005	0.20±0.02	X5R	X5R	16	1.5nF	±10%	C0105X5R152K160N*Z
						±20%	C0105X5R152M160N*Z
					1.8nF	±10%	C0105X5R182K160N*Z
						±20%	C0105X5R182M160N*Z
					2.2nF	±10%	C0105X5R222K160N*Z
						±20%	C0105X5R222M160N*Z
					2.7nF	±10%	C0105X5R272K160N*Z
						±20%	C0105X5R272M160N*Z
					3.3nF	±10%	C0105X5R332K160N*Z
						±20%	C0105X5R332M160N*Z
					4.7nF	±10%	C0105X5R472K160N*Z
						±20%	C0105X5R472M160N*Z
					5.6nF	±10%	C0105X5R562K160N*Z
						±20%	C0105X5R562M160N*Z
					6.8nF	±10%	C0105X5R682K160N*Z
						±20%	C0105X5R682M160N*Z
					10nF	±10%	C0105X5R103K160N*Z
						±20%	C0105X5R103M160N*Z
				10	12nF	±10%	C0105X5R123K100N*Z
						±20%	C0105X5R123M100N*Z
					15nF	±10%	C0105X5R153K100N*Z
						±20%	C0105X5R153M100N*Z
					18nF	±10%	C0105X5R183K100N*Z
						±20%	C0105X5R183M100N*Z
				22nF	±10%	C0105X5R223K100N*Z	
					±20%	C0105X5R223M100N*Z	
				6.3V	27nF	±10%	C0105X5R273K6R3N*Z
						±20%	C0105X5R273M6R3N*Z
					33nF	±10%	C0105X5R333K6R3N*Z
						±20%	C0105X5R333M6R3N*Z
					39nF	±10%	C0105X5R393K6R3N*Z
						±20%	C0105X5R393M6R3N*Z
					47nF	±10%	C0105X5R473K6R3N*Z
						±20%	C0105X5R473M6R3N*Z
					56nF	±10%	C0105X5R563K6R3N*Z
						±20%	C0105X5R563M6R3N*Z
					68nF	±10%	C0105X5R683K6R3N*Z
						±20%	C0105X5R683M6R3N*Z
				82nF	±10%	C0105X5R823K6R3N*Z	
					±20%	C0105X5R823M6R3N*Z	
				10	100nF	±10%	C0105X5R104K100N*Z
				6.3		±20%	C0105X5R104M100N*Z
						±10%	C0105X5R104K6R3N*Z
						±20%	C0105X5R104M6R3N*Z

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 Ur(Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number	
01005	0.20±0.02	X5R	X5R	4	100nF	±10%	C0105X5R104K4R0N*Z	
						±20%	C0105X5R104M4R0N*Z	
				6.3	220nF	±10%	C0105X5R224K6R3N*Z	
						±20%	C0105X5R224M6R3N*Z	
				4	220nF	±10%	C0105X5R224K4R0N*Z	
						±20%	C0105X5R224M4R0N*Z	
0201	0.30±0.03	X5R	X5R	25	1.5nF	±10%	C0201X5R152K250N*A	
						±20%	C0201X5R152M250N*A	
					1.8nF	±10%	C0201X5R182K250N*A	
						±20%	C0201X5R182M250N*A	
					2.2nF	±10%	C0201X5R222K250N*A	
						±20%	C0201X5R222M250N*A	
					3.3nF	±10%	C0201X5R332K250N*A	
						±20%	C0201X5R332M250N*A	
					3.9nF	±10%	C0201X5R392K250N*A	
						±20%	C0201X5R392M250N*A	
					4.7nF	±10%	C0201X5R472K250N*A	
						±20%	C0201X5R472M250N*A	
					5.6nF	±10%	C0201X5R562K250N*A	
						±20%	C0201X5R562M250N*A	
					6.8nF	±10%	C0201X5R682K250N*A	
						±20%	C0201X5R682M250N*A	
					10nF	±10%	C0201X5R103K250N*A	
						±20%	C0201X5R103M250N*A	
					12nF	±10%	C0201X5R123K250N*A	
						±20%	C0201X5R123M250N*A	
					16	15nF	±10%	C0201X5R153K160N*A
							±20%	C0201X5R153M160N*A
						18nF	±10%	C0201X5R183K160N*A
							±20%	C0201X5R183M160N*A
				22nF		±10%	C0201X5R223K160N*A	
						±20%	C0201X5R223M160N*A	
				27nF		±10%	C0201X5R273K160N*A	
						±20%	C0201X5R273M160N*A	
				33nF		±10%	C0201X5R333K160N*A	
						±20%	C0201X5R333M160N*A	
				39nF		±10%	C0201X5R393K160N*A	
						±20%	C0201X5R393M160N*A	
				47nF	±10%	C0201X5R473K160N*A		
					±20%	C0201X5R473M160N*A		
				56nF	±10%	C0201X5R563K160N*A		
					±20%	C0201X5R563M160N*A		
				10	68nF	±10%	C0201X5R683K100N*A	
						±20%	C0201X5R683M100N*A	

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0201	0.30±0.03	X5R	X5R	10	82nF	±10%	C0201X5R823K100N_A
						±20%	C0201X5R823M100N_A
	0.3 ^{+0.1} _{-0.03}			35	100nF	±10%	C0201X5R104K350N_X
						±20%	C0201X5R104M350N_X
	0.3 ^{+0.05} _{-0.03}			25	100nF	±10%	C0201X5R104K250N_J
						±20%	C0201X5R104M250N_J
	0.30±0.03			16	100nF	±10%	C0201X5R104K160N_A
						±20%	C0201X5R104M160N_A
						±10%	C0201X5R104K100N_A
						±20%	C0201X5R104M100N_A
	0.3 ^{+0.05} _{-0.03}			16	220nF	±10%	C0201X5R224K160N_J
						±20%	C0201X5R224M160N_J
				10		±10%	C0201X5R224K100N_J
						±20%	C0201X5R224M100N_J
	0.3 ^{+0.1} _{-0.03}			6.3	470nF	±10%	C0201X5R224K6R3N_J
						±20%	C0201X5R224M6R3N_J
	0.3 ^{+0.05} _{-0.03}			10	470nF	±10%	C0201X5R474K100N_X
						±20%	C0201X5R474M100N_X
				6.3		±10%	C0201X5R474K6R3N_J
						±20%	C0201X5R474M6R3N_J
0.3 ^{+0.1} _{-0.03}	4	1.0μF	±10%	C0201X5R474K4R0N_J			
			±20%	C0201X5R474M4R0N_J			
	16		±20%	C0201X5R105M160N_X			
			±20%	C0201X5R105M100N_X			
	10		±20%	C0201X5R105M6R3N_X			
			±20%	C0201X5R105M4R0N_X			
	6.3		2.2μF	±20%	C0201X5R225M100N_X		
				±20%	C0201X5R225M6R3N_X		
4	±20%	C0201X5R225M4R0N_X					
	±20%	C0201X5R225M4R0N_X					
0402	0.50±0.05	X5R	X5R	50	10nF	±10%	C0402X5R103K500N_B
						±20%	C0402X5R103M500N_B
				50	22nF	±10%	C0402X5R223K500N_B
						±20%	C0402X5R223M500N_B
				25	27nF	±10%	C0402X5R223K250N_B
						±20%	C0402X5R223M250N_B
				25	33nF	±10%	C0402X5R273K250N_B
						±20%	C0402X5R273M250N_B
				25	47nF	±10%	C0402X5R333K250N_B
						±20%	C0402X5R333M250N_B
				25	68nF	±10%	C0402X5R473K250N_B
						±20%	C0402X5R473M250N_B
				25	100nF	±10%	C0402X5R683K250N_B
	±20%					C0402X5R683M250N_B	
0.50 ^{+0.30} _{-0.05}	35	±10%	C0402X5R104K350N_C				
		±20%	C0402X5R104M350N_C				

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0402	0.50 ^{+0.30} _{-0.05}	X5R	X5R	35V	100nF	±10%	C0402X5R104K350N*C
						±20%	C0402X5R104M350N*C
	0.50 ^{+0.13} _{-0.05}			25	330nF	±10%	C0402X5R334K250N*N
						±20%	C0402X5R334M250N*N
	0.50 ^{+0.30} _{-0.05}			25	470nF	±10%	C0402X5R474K250N*N
						±20%	C0402X5R474M250N*N
	0.50±0.05			35	1.0μF	±20%	C0402X5R105M350N*C
						±20%	C0402X5R105M250N*B
						±20%	C0402X5R105M160N*B
						±10%	C0402X5R105K100N*B
						±20%	C0402X5R105M100N*B
						±20%	C0402X5R105M6R3N*B
	0.50 ^{+0.13} _{-0.05}			25	2.2μF	±20%	C0402X5R225M250N*N
						±20%	C0402X5R225M160N*B
	0.50±0.05			10	2.2μF	±20%	C0402X5R225M100N*B
						±20%	C0402X5R225M6R3N*B
	0.50 ^{+0.30} _{-0.05}			16	4.7μF	±20%	C0402X5R475M160N*C
						±20%	C0402X5R475M100N*C
						±20%	C0402X5R475M6R3N*C
						±20%	C0402X5R106M100N*C
±20%		C0402X5R106M6R3N*C					
±20%		C0402X5R106M4R0N*C					
0.80±0.10	50	1.0μF	±20%	C0603X5R105M500N*D			
			±20%	C0603X5R105M350N*D			
0.80 ^{+0.20} _{-0.10}	35	2.2μF	±20%	C0603X5R225M500N*K			
			±20%	C0603X5R225M250N*D			
0.80±0.10	25	4.7μF	±20%	C0603X5R475M350N*K			
			±20%	C0603X5R475M250N*K			
0.80 ^{+0.20} _{-0.10}	35	4.7μF	±20%	C0603X5R475M160N*K			
			±20%	C0603X5R475M100N*D			
0.80±0.10	10	4.7μF	±20%	C0603X5R475M6R3N*D			
			±20%	C0603X5R106M250N*K			
0.80 ^{+0.20} _{-0.10}	25	10μF	±20%	C0603X5R106M160N*K			
			±20%	C0603X5R106M100N*K			
			±20%	C0603X5R106M6R3N*K			
			±20%	C0603X5R106M4R0N*K			
0.80 ^{+0.30} ₀	10	22μF	±20%	C0603X5R226M100N*W			
			±20%	C0603X5R226M100N*K			
0.80 ^{+0.20} _{-0.10}	6.3	22μF	±20%	C0603X5R226M6R3N*K			
			±20%	C0603X5R226M4R0N*K			
0.80 ^{+0.20} _{-0.10}	4	47μF	±20%	C0603X5R476M6R3N*K			
			±20%	C0603X5R476M4R0N*K			

0805	$0.85^{+0.15}_{-0.35}$	X5R	X5R	50	2.2 μ F	$\pm 20\%$	C0805X5R225M500N*Y
	$1.25^{+0.20}_{-0.30}$					$\pm 20\%$	C0805X5R225M500N*H
	$1.25^{+0.20}_{-0.30}$			50	4.7 μ F	$\pm 20\%$	C0805X5R475M500N*H
	$0.85^{+0.15}_{-0.35}$			35		$\pm 20\%$	C0805X5R475M350N*H
	$0.85^{+0.15}_{-0.35}$			25		$\pm 20\%$	C0805X5R475M250N*Y
	$1.25^{+0.20}_{-0.30}$					$\pm 20\%$	C0805X5R475M250N*H

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 Ur(Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0805	0.85 ^{+0.15} _{-0.35}	X5R	X5R	16	4.7μF	±20%	C0805X5R475M160N*Y
	±20%					C0805X5R475M160N*H	
	10					±20%	C0805X5R475M100N*Y
						±20%	C0805X5R475M100N*H
	6.3					±20%	C0805X5R475M6R3N*Y
						±20%	C0805X5R475M6R3N*H
	25			10μF	±20%	C0805X5R106M250N*Y	
					±20%	C0805X5R106M250N*H	
	16			±20%	C0805X5R106M160N*Y		
				±20%	C0805X5R106M160N*H		
	10			±20%	C0805X5R106M100N*Y		
				±20%	C0805X5R106M100N*H		
	6.3			±20%	C0805X5R106M6R3N*Y		
				±20%	C0805X5R106M6R3N*H		
	25			22μF	±20%	C0805X5R226M250N*H	
					±20%	C0805X5R226M160N*H	
	16			±20%	C0805X5R226M100N*Y		
				±20%	C0805X5R226M100N*H		
	10			±20%	C0805X5R226M6R3N*Y		
				±20%	C0805X5R226M6R3N*H		
	6.3			±20%	C0805X5R226M4R0N*Y		
				±20%	C0805X5R226M4R0N*H		
	4			47μF	±20%	C0805X5R476M6R3N*Y	
					±20%	C0805X5R476M6R3N*H	
	6.3			±20%	C0805X5R476M4R0N*Y		
				±20%	C0805X5R476M4R0N*H		
	4			100μF	±20%	C0805X5R107M6R3N*H	
					±20%	C0805X5R107M4R0N*H	
6.3	100μF	±20%	C0805X5R107M6R3N*H				
		±20%	C0805X5R107M4R0N*H				
1206	0.85 ^{+0.15} _{-0.35}	X5R	X5R	50	4.7μF	±20%	C1206X5R475M500N*Y
	±20%					C1206X5R475M500N*L	
	35					±20%	C1206X5R475M350N*Y
						±20%	C1206X5R475M250N*L
	25			±20%	C1206X5R475M160N*Y		
				±20%	C1206X5R475M160N*L		
	16			±20%	C1206X5R475M160N*L		
				±20%	C1206X5R475M160N*L		
	50			10μF	±20%	C1206X5R106M500N*L	
					±20%	C1206X5R106M250N*L	
	25			±20%	C1206X5R106M160N*L		
				±20%	C1206X5R106M160N*L		
	25			22μF	±20%	C1206X5R226M250N*L	
					±20%	C1206X5R226M160N*Y	
	16				±20%	C1206X5R226M160N*L	
					±20%	C1206X5R226M100N*L	
	10			±20%	C1206X5R226M100N*L		
				±20%	C1206X5R226M6R3N*L		
	6.3			47μF	±20%	C1206X5R476M100N*L	
					±20%	C1206X5R476M6R3N*L	
10	47μF	±20%	C1206X5R476M100N*L				
		±20%	C1206X5R476M6R3N*L				
6.3	100μF	±20%	C1206X5R476M6R3N*L				
		±20%	C1206X5R107M6R3N*L				
6.3	100μF	±20%	C1206X5R107M6R3N*L				
		±20%	C1206X5R107M6R3N*L				

高介电常数型片式多层陶瓷电容器系列

High Dielectric MLCCs

X7R 尺寸范围 Size: 01005~0402

X7R 额定电压范围 Rated Voltage: 25~50Vdc

X7R 静电容量范围 Capacitance: 100pF~10nF

X7R 特点 Characteristics

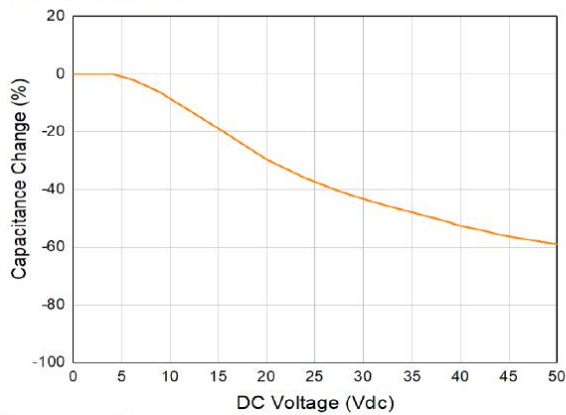
- ❖ 工作温度高
High operation temperature
- ❖ 高可靠性
High reliability

X7R 应用领域 Application Field

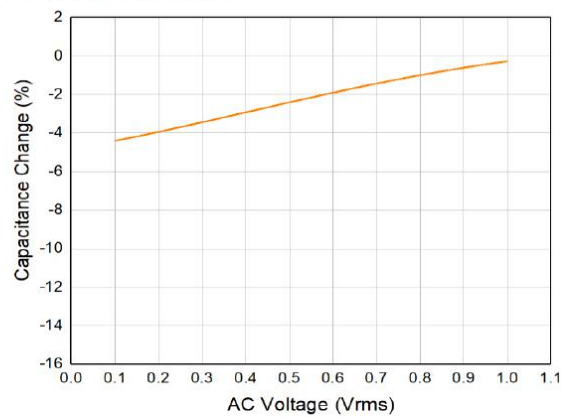
- ❖ 笔记本电脑、电源模块、LCD TV、数码相机、移动通信产品等
Laptops, power modules, LCD TVs, digital cameras, mobile communication products, etc.

X7R 特性曲线 Characteristics Curve

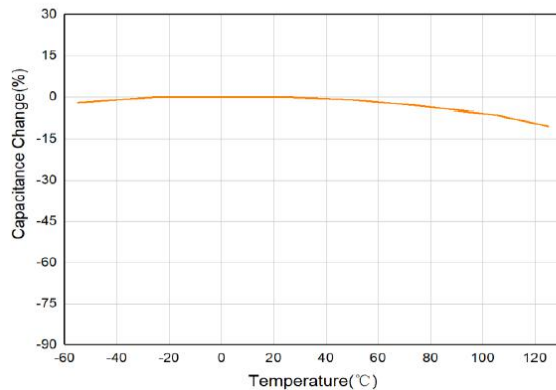
DC Bias Characteristics



AC Voltage Characteristics



Temperature Characteristic



注：上图为 X7R, 1nF 的部分特性。

The figure above shows partial characteristics of X7R, 1nF.

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
01005	0.20±0.02	X7R	X7R	25	100pF	±10%	C0105X7R101K250N*Z
						±20%	C0105X7R101M250N*Z
					120pF	±10%	C0105X7R121K250N*Z
						±20%	C0105X7R121M250N*Z
					150pF	±10%	C0105X7R151K250N*Z
						±20%	C0105X7R151M250N*Z
					180pF	±10%	C0105X7R181K250N*Z
						±20%	C0105X7R181M250N*Z
					200pF	±10%	C0105X7R201K250N*Z
						±20%	C0105X7R201M250N*Z
					220pF	±10%	C0105X7R221K250N*Z
						±20%	C0105X7R221M250N*Z
					270pF	±10%	C0105X7R271K250N*Z
						±20%	C0105X7R271M250N*Z
					300pF	±10%	C0105X7R301K250N*Z
						±20%	C0105X7R301M250N*Z
					330pF	±10%	C0105X7R331K250N*Z
						±20%	C0105X7R331M250N*Z
					470pF	±10%	C0105X7R471K250N*Z
						±20%	C0105X7R471M250N*Z
560pF	±10%	C0105X7R561K250N*Z					
	±20%	C0105X7R561M250N*Z					
680pF	±10%	C0105X7R681K250N*Z					
	±20%	C0105X7R681M250N*Z					
820pF	±10%	C0105X7R821K250N*Z					
	±20%	C0105X7R821M250N*Z					
1.0nF	±10%	C0105X7R102K250N*Z					
	±20%	C0105X7R102M250N*Z					
0201	0.30±0.03	X7R	X7R	50	120pF	±10%	C0201X7R121K500N*A
						±20%	C0201X7R121M500N*A
					150pF	±10%	C0201X7R151K500N*A
						±20%	C0201X7R151M500N*A
					180pF	±10%	C0201X7R181K500N*A
						±20%	C0201X7R181M500N*A
					220pF	±10%	C0201X7R221K500N*A
						±20%	C0201X7R221M500N*A
					270pF	±10%	C0201X7R271K500N*A
						±20%	C0201X7R271M500N*A
					300pF	±10%	C0201X7R301K500N*A
						±20%	C0201X7R301M500N*A
					330pF	±10%	C0201X7R331K500N*A
						±20%	C0201X7R331M500N*A
470pF	±10%	C0201X7R471K500N*A					
	±20%	C0201X7R471M500N*A					
560pF	±10%	C0201X7R561K500N*A					
	±20%	C0201X7R561M500N*A					

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0201	0.30±0.03	X7R	X7R	50	680pF	±10%	C0201X7R681K500N*A
						±20%	C0201X7R681M500N*A
					820pF	±10%	C0201X7R821K500N*A
						±20%	C0201X7R821M500N*A
					1.0nF	±10%	C0201X7R102K500N*A
						±20%	C0201X7R102M500N*A
					1.2nF	±10%	C0201X7R122K500N*A
						±20%	C0201X7R122M500N*A
0402	0.50±0.05	X7R	X7R	50	1.2nF	±10%	C0402X7R122K500N*B
						±20%	C0402X7R122M500N*B
					1.5nF	±10%	C0402X7R152K500N*B
						±20%	C0402X7R152M500N*B
					1.8nF	±10%	C0402X7R182K500N*B
						±20%	C0402X7R182M500N*B
					2.2nF	±10%	C0402X7R222K500N*B
						±20%	C0402X7R222M500N*B
					2.7nF	±10%	C0402X7R272K500N*B
						±20%	C0402X7R272M500N*B
					3.3nF	±10%	C0402X7R332K500N*B
						±20%	C0402X7R332M500N*B
					3.9nF	±10%	C0402X7R392K500N*B
						±20%	C0402X7R392M500N*B
					4.7nF	±10%	C0402X7R472K500N*B
						±20%	C0402X7R472M500N*B
					6.8nF	±10%	C0402X7R682K500N*B
						±20%	C0402X7R682M500N*B
					10nF	±10%	C0402X7R103K500N*B
						±20%	C0402X7R103M500N*B

高温型片式多层陶瓷电容器系列

High Temperature MLCCs

X6S 尺寸范围 Size: 0201~0805

X6S 额定电压范围 Rated Voltage: 2.5~50Vdc

X6S 静电容量范围 Capacitance: 10nF~47 μ F

X6S 特点 Characteristics

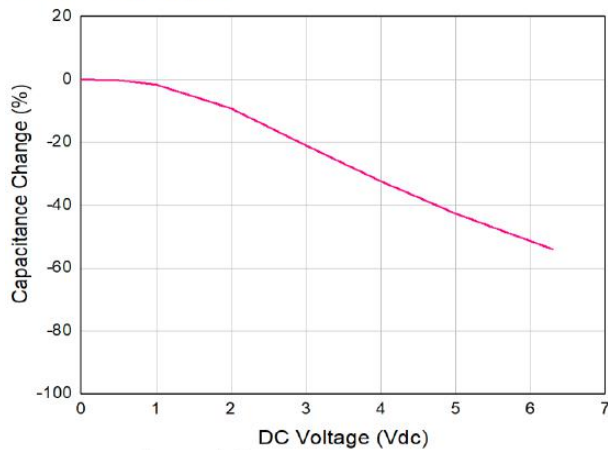
- ❖ 高容值 High capacitance
- ❖ 最高工作温度可达 105 $^{\circ}$ C The maximum working temperature can reach 105 $^{\circ}$ C

X6S 应用领域 Application Field

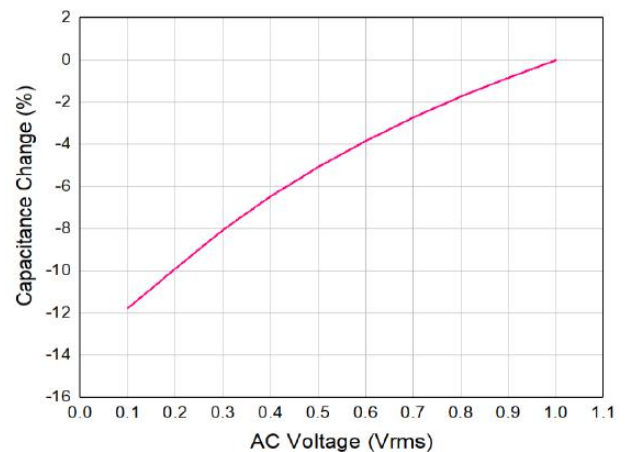
- ❖ CPU、芯片外围、户外安防摄像头等高温工作电路
High-temperature working circuit such as CPU, Chip periphery and outdoor security camera etc.

X6S 特性曲线 Characteristics Curve

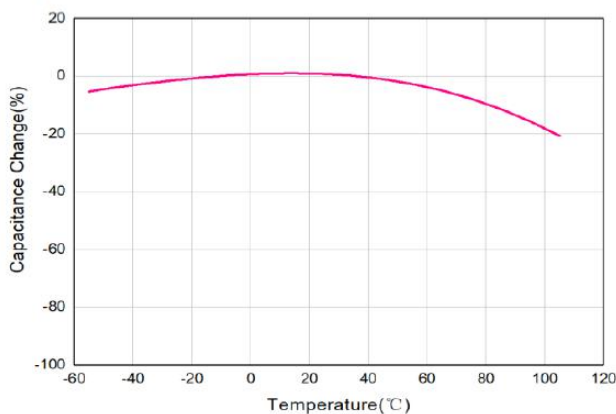
DC Bias Characteristics



AC Voltage Characteristics



Temperature Characteristic



注：上图为 X6S, 100nF 的部分特性。

The figure above shows partial characteristics of X6S, 100nF.

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number	
0201	0.30±0.03	X6S	X6S	10	10nF	±10%	C0201X6S103K100N*A	
						±20%	C0201X6S103M100N*A	
				6.3		±10%	C0201X6S103K6R3N*A	
						±20%	C0201X6S103M6R3N*A	
				10	12nF	±10%	C0201X6S123K100N*A	
						±20%	C0201X6S123M100N*A	
				6.3		±10%	C0201X6S123K6R3N*A	
						±20%	C0201X6S123M6R3N*A	
				10	15nF	±10%	C0201X6S153K100N*A	
						±20%	C0201X6S153M100N*A	
				6.3		±10%	C0201X6S153K6R3N*A	
						±20%	C0201X6S153M6R3N*A	
				10	22nF	±10%	C0201X6S223K100N*A	
						±20%	C0201X6S223M100N*A	
				6.3		±10%	C0201X6S223K6R3N*A	
						±20%	C0201X6S223M6R3N*A	
				10	33nF	±10%	C0201X6S333K100N*A	
						±20%	C0201X6S333M100N*A	
				6.3		±10%	C0201X6S333K6R3N*A	
						±20%	C0201X6S333M6R3N*A	
				10	47nF	±10%	C0201X6S473K100N*A	
						±20%	C0201X6S473M100N*A	
				6.3		±10%	C0201X6S473K6R3N*A	
						±20%	C0201X6S473M6R3N*A	
	10			56nF	±10%	C0201X6S563K100N*A		
					±20%	C0201X6S563M100N*A		
	6.3				±10%	C0201X6S563K6R3N*A		
					±20%	C0201X6S563M6R3N*A		
	0.3 ^{+0.05} _{-0.03}			0.30±0.03	16	100nF	±10%	C0201X6S104K160N*J
	±20%						C0201X6S104M160N*J	
	10				±10%		C0201X6S104K100N*A	
					±20%		C0201X6S104M100N*A	
	6.3				±10%		C0201X6S104K6R3N*A	
					±20%		C0201X6S104M6R3N*A	
	4				±10%		C0201X6S104K4R0N*A	
					±20%		C0201X6S104M4R0N*A	
	10			0.3 ^{+0.05} _{-0.03}	10	220nF	±10%	C0201X6S224K100N*J
							±20%	C0201X6S224M100N*J
	6.3				±10%		C0201X6S224K6R3N*J	
					±20%		C0201X6S224M6R3N*J	
	4				±10%		C0201X6S224K4R0N*J	
					±20%		C0201X6S224M4R0N*J	
	6.3			0.3 ^{+0.10} _{-0.03}	6.3	470nF	±10%	C0201X6S474K6R3N*X
							±20%	C0201X6S474M6R3N*X

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0201	0.3 ^{+0.05} _{-0.03}	X6S	X6S	4	470nF	±10%	C0201X6S474K4R0N*J
						±20%	C0201X6S474M4R0N*J
	6.3			1μF	±20%	C0201X6S105M6R3N*X	
	4				±20%	C0201X6S105M4R0N*X	
0402	0.50 ^{+0.30} _{-0.05}	X6S	X6S	50	100nF	±10%	C0402X6S104K500N*C
						±20%	C0402X6S104M500N*C
				35		±10%	C0402X6S104K350N*C
						±20%	C0402X6S104M350N*C
				25		±10%	C0402X6S104K250N*C
						±20%	C0402X6S104M250N*C
	0.50 ^{+0.30} _{-0.05}			25	220nF	±10%	C0402X6S224K250N*C
						±20%	C0402X6S224M250N*C
				16		±10%	C0402X6S224K160N*C
						±20%	C0402X6S224M160N*C
	0.50 ^{+0.13} _{-0.05}			10	470nF	±10%	C0402X6S224K100N*N
						±20%	C0402X6S224M100N*N
	0.50 ^{+0.30} _{-0.05}			16	470nF	±10%	C0402X6S474K160N*C
						±20%	C0402X6S474M160N*C
	0.50 ^{+0.13} _{-0.05}			10	470nF	±10%	C0402X6S474K100N*N
						±20%	C0402X6S474M100N*N
	0.50 ^{+0.13} _{-0.05}			25	1μF	±20%	C0402X6S105M250N*N
				16		±20%	C0402X6S105M160N*B
	0.50±0.05			10	1μF	±20%	C0402X6S105M100N*B
				6.3		±20%	C0402X6S105M6R3N*B
				4		±20%	C0402X6S105M4R0N*B
	0.50 ^{+0.13} _{-0.05}			10	2.2μF	±20%	C0402X6S225M100N*N
				6.3		±20%	C0402X6S225M6R3N*N
	0.50±0.05			4	2.2μF	±20%	C0402X6S225M4R0N*B
10		±20%	C0402X6S475M100N*C				
0.50 ^{+0.30} _{-0.05}	6.3	4.7μF	±20%	C0402X6S475M6R3N*C			
	4		±20%	C0402X6S475M4R0N*C			
	6.3		±20%	C0402X6S106M6R3N*C			
0.50 ^{+0.30} _{-0.05}	4	10μF	±20%	C0402X6S106M4R0N*C			
	2.5		±20%	C0402X6S106M2R5N*C			
	35		2.2μF	±20%	C0603X6S225M350N*K		
	25			±20%	C0603X6S225M250N*K		
0.80±0.10	16	2.2μF	±20%	C0603X6S225M160N*D			
	10		±20%	C0603X6S225M100N*D			
	25		4.7μF	±20%	C0603X6S475M250N*K		
	16			±20%	C0603X6S475M160N*K		
0.80 ^{+0.20} _{-0.10}	10	4.7μF	±20%	C0603X6S475M100N*K			
	16		±20%	C0603X6S106M160N*K			
0.80 ^{+0.20} _{-0.10}	10	10μF	±20%	C0603X6S106M100N*K			
	6.3		±20%	C0603X6S106M6R3N*K			
	4		±20%	C0603X6S106M4R0N*K			
	4		±20%	C0603X6S106M4R0N*K			

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number		
0603	0.80 ^{+0.20} _{-0.10}	X6S	X6S	6.3	22μF	±20%	C0603X6S226M6R3N*K		
	±20%					C0603X6S226M6R3N*W			
	4			±20%		C0603X6S226M4R0N*K			
				±20%		C0603X6S226M4R0N*W			
0805	1.25 ^{+0.20} _{-0.30}	X6S	X6S	50	1.0μF	±20%	C0805X6S105M500N*H		
	1.25 ^{+0.20} _{-0.30}			35	2.2μF	±20%	C0805X6S225M350N*H		
				25		±20%	C0805X6S225M250N*H		
	1.25 ^{+0.20} _{-0.30}			35	4.7μF	±20%	C0805X6S475M350N*H		
				25		±20%	C0805X6S475M250N*H		
	1.25 ^{+0.20} _{-0.30}			25	10μF	±20%	C0805X6S106M250N*H		
				16		±20%	C0805X6S106M160N*H		
				10		±20%	C0805X6S106M100N*H		
	1.25 ^{+0.20} _{-0.30}			16	22μF	±20%	C0805X6S226M160N*H		
				10		±20%	C0805X6S226M100N*H		
				6.3		±20%	C0805X6S226M6R3N*H		
				4		±20%	C0805X6S226M4R0N*H		
	0.85 ^{+0.15} _{-0.35}							±20%	C0805X6S226M4R0N*Y
	1.25 ^{+0.20} _{-0.30}					6.3	47μF	±20%	C0805X6S476M6R3N*H
	0.85 ^{+0.15} _{-0.35}					4		±20%	C0805X6S476M4R0N*H
						4		±20%	C0805X6S476M4R0N*Y

高温型片式多层陶瓷电容器系列

High Temperature MLCCs

X7T 尺寸范围 Size: 0201~0805

X7T 额定电压范围 Rated Voltage: 2.5~50Vdc

X7T 静电容量范围 Capacitance: 100nF~47 μ F

X7T 特点 Characteristics

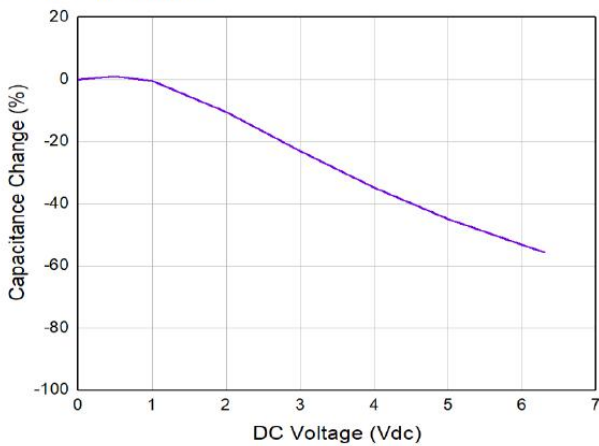
- ❖ 高容值 High capacitance
- ❖ 最高工作温度可达 125 $^{\circ}$ C The maximum working temperature can reach 125 $^{\circ}$ C

X7T 应用领域 Application Field

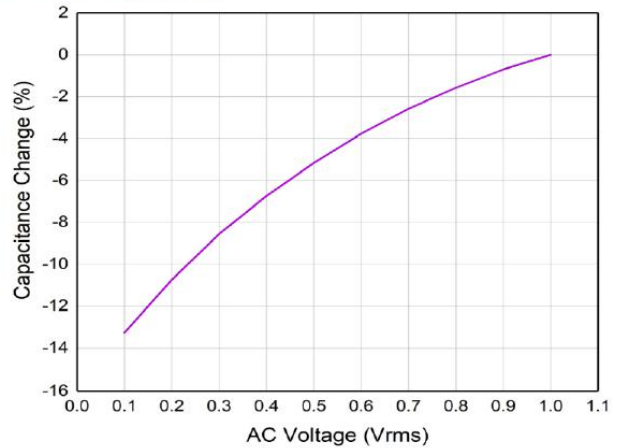
- ❖ CPU、芯片外围、户外安防摄像头等高温工作电路
High-temperature working circuit such as CPU, Chip periphery and outdoor security camera etc.

X7T 特性曲线 Characteristics Curve

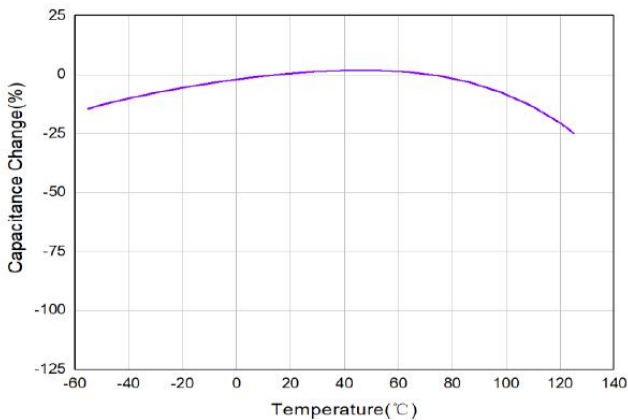
DC Bias Characteristics



AC Voltage Characteristics



Temperature Characteristic



注：上图为 X7T, 100nF 的部分特性。

The figure above shows partial characteristics of X7T, 100nF.

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容 量 Cap.	允许偏差 Tolerance	品名 Part Number	
0201	0.3 ^{+0.05} _{-0.03}	X7T	X7T	10	100nF	±10%	C0201X7T104K100N*J	
	0.30±0.03			6.3		±20%	C0201X7T104M100N*J	
						±10%	C0201X7T104K6R3N*A	
	0.3 ^{+0.05} _{-0.03}			4		±20%	C0201X7T104M6R3N*A	
					220nF	±10%	C0201X7T224K4R0N*J	
	±20%			C0201X7T224M4R0N*J				
	±10%			C0201X7T224K2R5N*J				
	±20%			C0201X7T224M2R5N*J				
	0.3 ^{+0.05} _{-0.03}			2.5	470nF	±10%	C0201X7T474K2R5N*J	
	0.3 ^{+0.10} _{-0.03}					4	±20%	C0201X7T474M2R5N*J
							1μF	±10%
	2.5					±20%		C0201X7T105M4R0N*X
±10%		C0201X7T105K2R5N*X						
0.3 ^{+0.10} _{-0.03}	2.5	±20%	C0201X7T105M2R5N*X					
		0402	X7T	X7T	50	100nF	±10%	C0402X7T104K500N*C
±20%	C0402X7T104M500N*C							
0.50 ^{+0.30} _{-0.05}	35				100nF	±10%	C0402X7T104K350N*C	
						±20%	C0402X7T104M350N*C	
0.50±0.05	25					±10%	C0402X7T104K250N*B	
						±20%	C0402X7T104M250N*B	
0.50 ^{+0.13} _{-0.05}	16					±10%	C0402X7T104K160N*B	
						±20%	C0402X7T104M160N*B	
	10					±10%	C0402X7T104K100N*N	
						±20%	C0402X7T104M100N*N	
0.50±0.05	6.3					±10%	C0402X7T104K6R3N*N	
						±20%	C0402X7T104M6R3N*N	
0.50 ^{+0.30} _{-0.05}	4	220nF	±10%	C0402X7T104K4R0N*B				
			±20%	C0402X7T104M4R0N*B				
	25		±10%	C0402X7T224K250N*C				
			±20%	C0402X7T224M250N*C				
0.50 ^{+0.13} _{-0.05}	16		±10%	C0402X7T224K160N*C				
			±20%	C0402X7T224M160N*C				
0.50±0.05	10		±10%	C0402X7T224K100N*C				
			±20%	C0402X7T224M100N*C				
	6.3		±10%	C0402X7T224K6R3N*N				
			±20%	C0402X7T224M6R4N*N				
0.50 ^{+0.30} _{-0.05}	4		470nF	±10%	C0402X7T224K4R0N*N			
				±20%	C0402X7T224M4R0N*N			
	16	±10%		C0402X7T474K160N*C				
		±20%		C0402X7T474M160N*C				
0.50 ^{+0.13} _{-0.05}	10	±10%		C0402X7T474K100N*N				
		±20%		C0402X7T474M100N*N				
0.50 ^{+0.13} _{-0.05}	6.3	±10%		C0402X7T474K6R3N*N				
		±20%		C0402X7T474M6R3N*N				
	4	±10%		C0402X7T474K4R0N*N				
		±20%		C0402X7T474M4R0N*N				

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 Ur(Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0402	0.50±0.05	X7T	X7T	16	1.0μF	±20%	C0402X7T105M160N*B
				10		±20%	C0402X7T105M100N*B
				6.3		±20%	C0402X7T105M6R3N*B
				4		±20%	C0402X7T105M4R0N*B
	0.50 ^{+0.13} _{-0.05}			10	2.2μF	±20%	C0402X7T225M100N*N
				6.3		±20%	C0402X7T225M6R3N*N
	0.50±0.05			4	±20%	C0402X7T225M4R0N*B	
	0.50 ^{+0.30} _{-0.05}			4	4.7μF	±20%	C0402X7T475M4R0N*C
0603	0.80 ^{+0.20} _{-0.10}	X7T	X7T	35	2.2μF	±20%	C0603X7T225M350N*K
				25		±20%	C0603X7T225M250N*K
				16		±20%	C0603X7T225M160N*K
				10		±20%	C0603X7T225M100N*D
				6.3		±20%	C0603X7T225M6R3N*D
				4		±20%	C0603X7T225M4R0N*D
	0.80 ^{+0.20} _{-0.10}			10	4.7μF	±20%	C0603X7T475M100N*K
				6.3		±20%	C0603X7T475M6R3N*K
	0.80±0.10			4	4.7μF	±20%	C0603X7T475M4R0N*D
	0.80 ^{+0.20} _{-0.10}			10	10μF	±20%	C0603X7T106M100N*K
				6.3		±20%	C0603X7T106M6R3N*K
				4		±20%	C0603X7T106M4R0N*K
50		1.0μF	±20%	C0805X7T105M500N*H			
0805	1.25 ^{+0.20} _{-0.30}	X7T	X7T	16	2.2μF	±20%	C0805X7T225M160N*H
	1.25 ^{+0.20} _{-0.30}			10		±20%	C0805X7T225M100N*H
				6.3		±20%	C0805X7T225M6R3N*H
	1.25 ^{+0.20} _{-0.30}			16	4.7μF	±20%	C0805X7T475M160N*H
				10		±20%	C0805X7T475M100N*H
				6.3		±20%	C0805X7T475M6R3N*H
	1.25 ^{+0.20} _{-0.30}			10	10μF	±20%	C0805X7T106M100N*H
				6.3		±20%	C0805X7T106M6R3N*H
	0.85 ^{+0.15} _{-0.35}			4	±20%	C0805X7T106M4R0N*Y	
	1.25 ^{+0.20} _{-0.30}			10	22μF	±20%	C0805X7T226M100N*H
				6.3		±20%	C0805X7T226M6R3N*H
	0.85 ^{+0.15} _{-0.35}			2.5	47μF	±20%	C0805X7T476M2R5N*Y
1.25 ^{+0.20} _{-0.30}	±20%	C0805X7T476M2R5N*H					

移动通信用片式多层陶瓷电容器系列

MLCCs for mobile communication

尺寸范围 Size: 0201~1206

额定电压范围 Rated Voltage: 4~50Vdc

静电容量范围 Capacitance: 10nF~100μF

特点 Characteristics

- ❖ 高容值与高可靠性并存
High capacitance and high reliability coexist

应用领域 Application Field

- ❖ 手机、智能手表、智能手环、蓝牙耳机等移动通信产品
Laptops, power modules, LCD TVs, digital cameras, mobile communication products, etc.

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _r (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0201	0.30±0.03	D5R	X5R	25	10nF	±10%	C0201D5R103K250N*A
						±20%	C0201D5R103M250N*A
				25	100nF	±10%	C0201D5R104K250N*A
						±20%	C0201D5R104M250N*A
						±10%	C0201D5R104K160N*A
						±20%	C0201D5R104M160N*A
						±10%	C0201D5R104K100N*A
						±20%	C0201D5R104M100N*A
				16	220nF	±10%	C0201D5R104K6R3N*A
						±20%	C0201D5R104M6R3N*A
	10			470nF	±10%	C0201D5R224K160N*X	
					±20%	C0201D5R224M160N*X	
					±10%	C0201D5R224K100N*J	
					±20%	C0201D5R224M100N*J	
	6.3			1.0μF	±10%	C0201D5R224K6R3N*J	
					±20%	C0201D5R224M6R3N*J	
	0.3 ^{+0.1} _{-0.03}			470nF	±10%	C0201D5R474K160N*X	
					±20%	C0201D5R474M160N*X	
					±10%	C0201D5R474K100N*X	
					±20%	C0201D5R474M100N*X	
±10%		C0201D5R474K6R3N*J					
±20%		C0201D5R474M6R3N*J					
0.3 ^{+0.05} _{-0.03}	1.0μF	±10%	C0201D5R474K4R0N*J				
		±20%	C0201D5R474M4R0N*J				
0.3 ^{+0.1} _{-0.03}	1.0μF	±20%	C0201D5R105M160N*X				
		±20%	C0201D5R105M100N*J				
0.3 ^{+0.05} _{-0.03}	1.0μF	±20%	C0201D5R105M160N*X				
		±20%	C0201D5R105M100N*J				

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number			
0201	0.3 ^{+0.1} _{-0.03}	D5R	X5R	10	1.0μF	±20%	C0201D5R105M100N*X			
				8		±20%	C0201D5R105M8R0N*X			
				6.3		±20%	C0201D5R105M6R3N*X			
				4		±20%	C0201D5R105M4R0N*X			
	0.3 ^{+0.1} _{-0.03}			8	2.2μF	±20%	C0201D5R225M8R0N*X			
				6.3		±20%	C0201D5R225M6R3N*X			
				4		±20%	C0201D5R225M4R0N*X			
	0.3 ^{+0.1} _{-0.03}			6.3	4.7μF	±20%	C0201D5R475M6R3N*X			
				4		±20%	C0201D5R475M4R0N*X			
	0402			0.50 ^{+0.15} _{-0.05}	D5R	X5R	50	470nF	±10%	C0402D5R474K500N*N
0.50 ^{+0.20} _{-0.05}		±20%	C0402D5R474M500N*N							
0.50±0.05		50	1.0μF	±20%			C0402D5R105M500N*C			
0.50 ^{+0.15} _{-0.05}		35		±20%			C0402D5R105M350N*B			
0.50±0.05		25		±20%			C0402D5R105M350N*N			
0.50 ^{+0.15} _{-0.05}				±20%			C0402D5R105M250N*B			
0.50±0.05		16		±20%			C0402D5R105M250N*N			
0.50 ^{+0.15} _{-0.05}				±20%			C0402D5R105M160N*B			
0.50±0.05				10			±20%	C0402D5R105M100N*B		
0.50 ^{+0.15} _{-0.05}				25			±20%	C0402D5R225M250N*N		
0.50 ^{+0.20} _{-0.05}		±20%					C0402D5R225M250N*C			
0.50±0.05		16		2.2μF			±20%	C0402D5R225M160N*B		
			10				±20%	C0402D5R225M100N*B		
			9				±20%	C0402D5R225M9R0N*B		
			6.3				±20%	C0402D5R225M6R3N*B		
			0.50 ^{+0.20} _{-0.05}				16	4.7μF	±20%	C0402D5R475M160N*C
									10	±20%
0.50 ^{+0.20} _{-0.05}		8	10μF	±20%			C0402D5R475M8R0N*C			
				6.3			±20%	C0402D5R475M6R3N*C		
				10			±20%	C0402D5R106M100N*C		
				9			±20%	C0402D5R106M9R0N*C		
				8			±20%	C0402D5R106M8R0N*C		
				6.3			±20%	C0402D5R106M6R3N*C		
0.50 ^{+0.20} _{-0.05}		4	22μF	±20%			C0402D5R106M4R0N*C			
	6.3			±20%	C0402D5R226M6R3N*C					
	4			±20%	C0402D5R226M4R0N*C					
	4			±20%	C0402D5R226M100N*K					
0603	0.80±0.10	D5R	X5R	50	1.0μF	±20%	C0603D5R105M500N*D			
	0.80 ^{+0.20} _{-0.10}			35	2.2μF	±20%	C0603D5R225M350N*K			
				25		±20%	C0603D5R225M250N*K			
	0.80 ^{+0.20} _{-0.10}			35	4.7μF	±20%	C0603D5R475M350N*K			
				30		±20%	C0603D5R475M300N*K			
				25		±20%	C0603D5R475M250N*K			
				16		±20%	C0603D5R475M160N*K			
				10		±20%	C0603D5R475M100N*K			
				25		10μF	±20%	C0603D5R106M250N*K		
	16			±20%	C0603D5R106M160N*K					
0.80 ^{+0.20} _{-0.10}	10	22μF	±20%	C0603D5R226M100N*K						

规格型号及物料编码 Specifications and Part Number

尺寸 Size	厚度 Thickness(mm)	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0603	0.80 ^{+0.20} _{-0.10}	D5R	X5R	9	22μF	±20%	C0603D5R226M9R0N*K
				8		±20%	C0603D5R226M8R0N*K
				6.3		±20%	C0603D5R226M6R3N*K
				4		±20%	C0603D5R226M4R0N*K
	0.80 ^{+0.20} _{-0.10}			6.3	47μF	±20%	C0603D5R476M6R3N*K
				4		±20%	C0603D5R476M4R0N*K
0805	0.85 ^{+0.15} _{-0.35}	D5R	X5R	50	2.2μF	±20%	C0805D5R225M500N*Y
	1.25 ^{+0.20} _{-0.30}					±20%	C0805D5R225M500N*H
	1.25 ^{+0.20} _{-0.30}			50	4.7μF	±20%	C0805D5R475M500N*H
	0.85 ^{+0.15} _{-0.35}					±20%	C0805D5R475M250N*Y
	1.25 ^{+0.20} _{-0.30}			25	10μF	±20%	C0805D5R475M250N*H
	0.85 ^{+0.15} _{-0.35}					±20%	C0805D5R106M250N*Y
	1.25 ^{+0.20} _{-0.30}			25	22μF	±20%	C0805D5R106M250N*H
	0.85 ^{+0.15} _{-0.35}					±20%	C0805D5R106M160N*Y
	1.25 ^{+0.20} _{-0.30}			16	47μF	±20%	C0805D5R106M160N*H
	0.85 ^{+0.15} _{-0.35}					±20%	C0805D5R106M160N*H
	1.25 ^{+0.20} _{-0.30}			25	100μF	±20%	C0805D5R226M250N*H
	0.85 ^{+0.15} _{-0.35}					±20%	C0805D5R226M160N*H
	1.25 ^{+0.20} _{-0.30}			10	22μF	±20%	C0805D5R226M100N*Y
	0.85 ^{+0.15} _{-0.35}					±20%	C0805D5R226M100N*H
	1.25 ^{+0.20} _{-0.30}			6.3	47μF	±20%	C0805D5R226M6R3N*Y
	0.85 ^{+0.15} _{-0.35}					±20%	C0805D5R226M6R3N*H
	1.25 ^{+0.20} _{-0.30}			4	100μF	±20%	C0805D5R226M4R0N*Y
	0.85 ^{+0.15} _{-0.35}					±20%	C0805D5R226M4R0N*Y
	1.25 ^{+0.20} _{-0.30}			10	47μF	±20%	C0805D5R476M100N*H
	0.85 ^{+0.15} _{-0.35}					±20%	C0805D5R476M6R3N*Y
	1.25 ^{+0.20} _{-0.30}			6.3	100μF	±20%	C0805D5R476M6R3N*H
	0.85 ^{+0.15} _{-0.35}					±20%	C0805D5R476M4R0N*Y
	1.25 ^{+0.20} _{-0.30}			4	100μF	±20%	C0805D5R476M4R0N*H
	0.85 ^{+0.15} _{-0.35}					±20%	C0805D5R476M4R0N*H
1.25 ^{+0.20} _{-0.30}	6.3	100μF	±20%	C0805D5R107M6R3N*H			
0.85 ^{+0.15} _{-0.35}			±20%	C0805D5R107M6R3N*H			
1206	1.60±0.20	D5R	X5R	25	22μF	±20%	C1206D5R226M250N*L
	0.85 ^{+0.15} _{-0.35}					±20%	C1206D5R226M160N*Y
	1.60±0.20			16	47μF	±20%	C1206D5R226M160N*L
	1.60±0.20					±20%	C1206D5R476M100N*L
	1.15±0.20			6.3	100μF	±20%	C1206D5R476M6R3N*L
	1.60±0.20					±20%	C1206D5R476M6R3N*O
1.60±0.20	6.3	100μF	±20%	C1206D5R107M6R3N*L			

*2 类陶瓷介质老化特性的说明

2 类陶瓷介质电容器的容量会随时间而变化，这种特点称为“老化”。这种老化特性是由于在低于居里温度时，陶瓷介质中立方晶体结构的对称性降低，这种状态的转变导致随着时间一部分容量减少。

这种老化过程是可以预计的，与时间按对数规律减小，同时这种老化过程是可逆的。当电容被加热到高于其居里温度一段时间，就会出现去老化现象，老化衰减掉的容量将得到恢复。

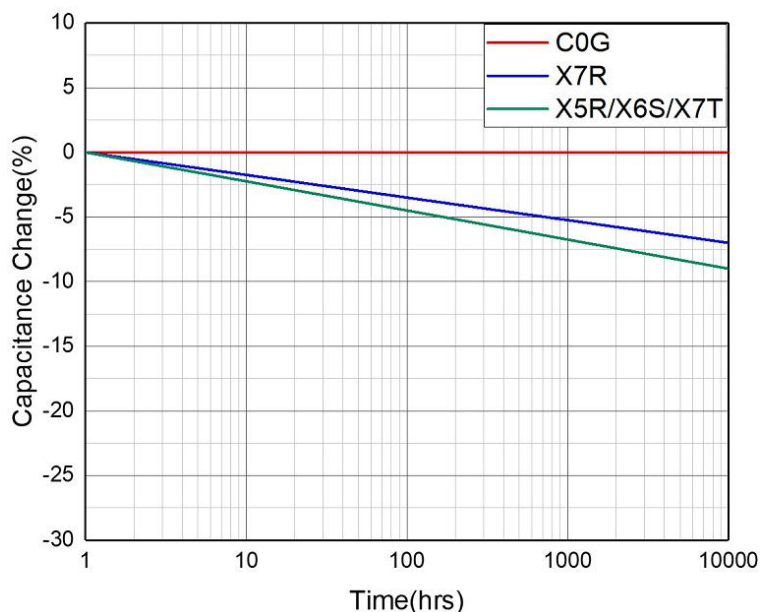
去老化的效果取决于陶瓷体的温度和在这个温度下的维持时间。通常采取 150°C 1.5 小时的条件进行去老化，使容量恢复初始值，电容的去老化容量恢复速度很快。通常电容容量测量的仲裁时间为 1000 小时，通常在 1000 小时之后的容量老化衰减速度已经很慢。

The capacitance of Class 2 dielectric changes with time. The change with time is known as “aging”. It is caused by gradual realignment of the crystalline structure of the ceramic dielectric material as it is cooled below its Curie temperature, which produces a loss of capacitance with time. The aging process is predictable and follows a logarithmic decay.

The aging process is reversible. If the capacitor is heated to a temperature above its Curie point for some period of time, de-aging will occur and the capacitor will regain the capacitance lost during the aging process.

The amount of de-aging depends on both the elevated temperature and the length of time at that temperature.

Exposure to 150°C for one-half hour is sufficient to return the capacitor to its initial value. Because the capacitance changes rapidly immediately after de-aging. capacitance measurements are indexed to a referee time of 1,000 hours. The selection of this referee time has proven practical, as the actual decline of capacitance after 1,000 hours is very low.



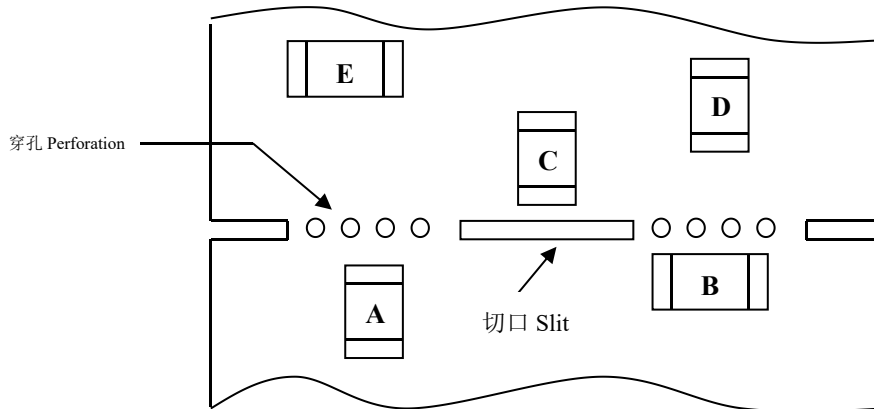
图：MLCC 各材料老化曲线

应用技术要求 Technical Requirements in Application

■ 电容器在 PCB 上的布局设计 Capacitor Layout on PCB

机械应力根据电容器在 PCB 上的位置不同而变化。请参考下图的设计方案：

Mechanical stress varies according to the location of chip capacitors on PCB. The recommendation for better design is as Fig.



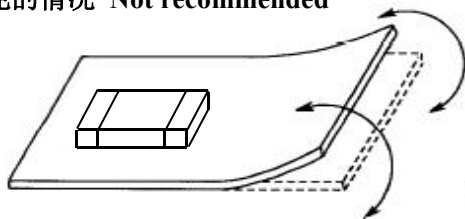
施加在电容器上的应力大小如下： $A > B = C > D > E$

The stress in capacitors is in the following order: $A > B = C > D > E$

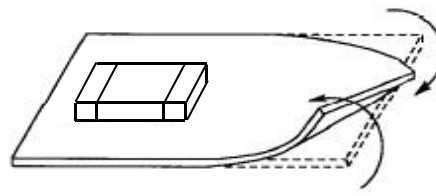
注意：不要弯曲或扭曲 PCB，否则电容器会发生断裂。请参考下面的例子：

Pay attention not to bend or distort the PCB otherwise the chip capacitor may crack. Please refer to the following examples.

a. 应该避免的情况 Not recommended

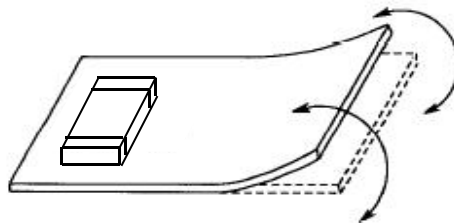


弯曲 Bend



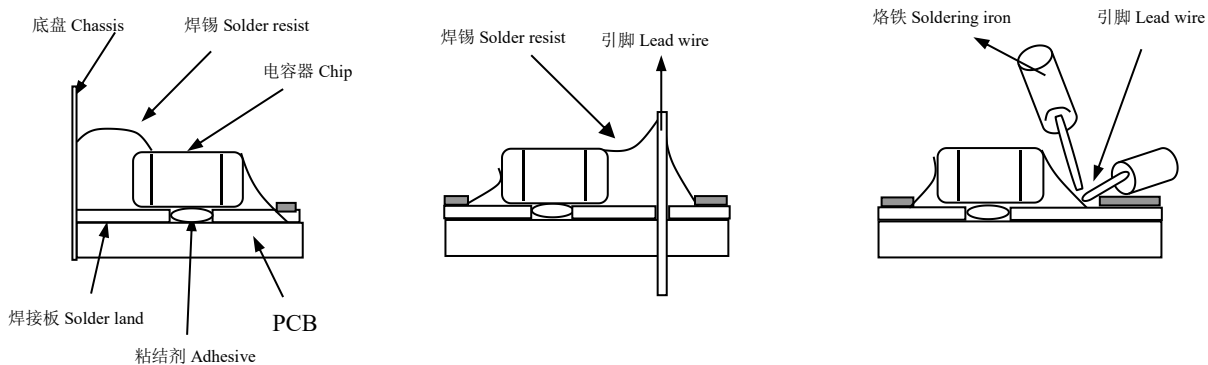
扭曲 Distort

b. 建议的操作方式 Recommended:

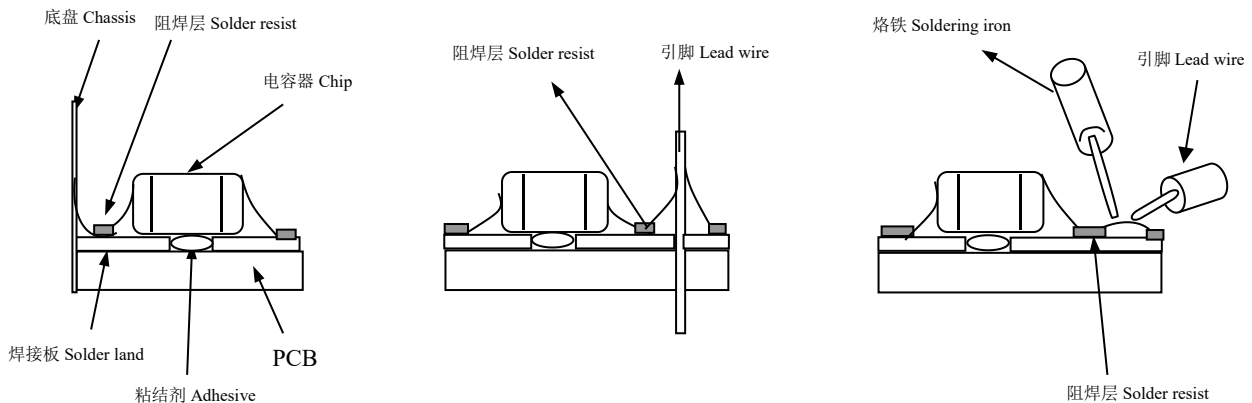


■ 焊锡的应用以及焊接方式 Solder Buildup and Soldering Methods

a. 如图焊接方式应该避免 Examples of soldering method not recommended



b. 请参考以下的焊接方式 Examples of soldering method recommended



■ 自动化设计的注意事项 Consideration for Automatic Placement

如果安装头调整得过低，会产生过高的应力，导致电容器断裂。请参考下面的注意事项：

If the mounting head is adjusted too low, it may induce excessive stress in the chip capacitor to result in cracking. Please take following precautions:

- a. 调整安装头的底部接触 PCB 的表面，但不能用力压；

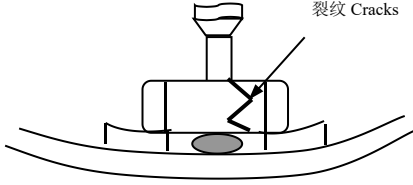
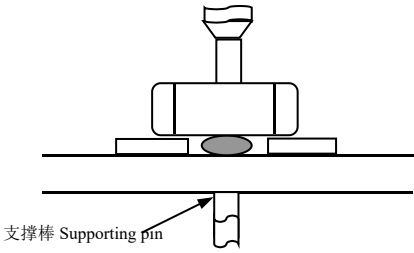
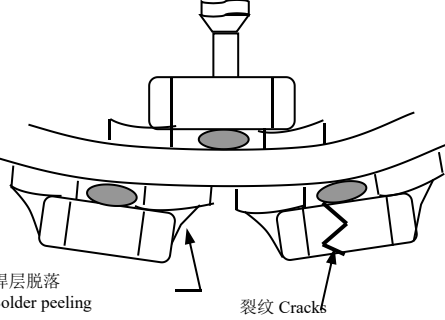
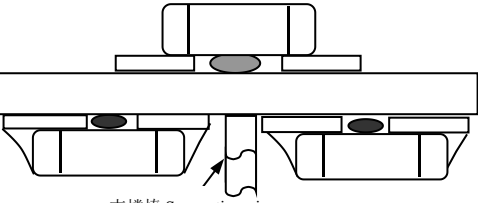
Adjust the bottom dead center of the mounting head to reach on the PCB surface and not press it;

- b. 调整安装头的压力至 1~3N；

Adjust the mounting head pressure to be 1 to 3N of static weight;

- c. 为了降低来自安装头的冲击力，应该由 PCB 的底部提供支撑力。

To minimize the impact energy from mounting head, it is important to provide support from the bottom side of the PCB.

	避免设计方案 Not recommended	建议设计方案 Recommended
单面贴装 Single-sided Mounting		
双面贴装 Double-sided Mounting		

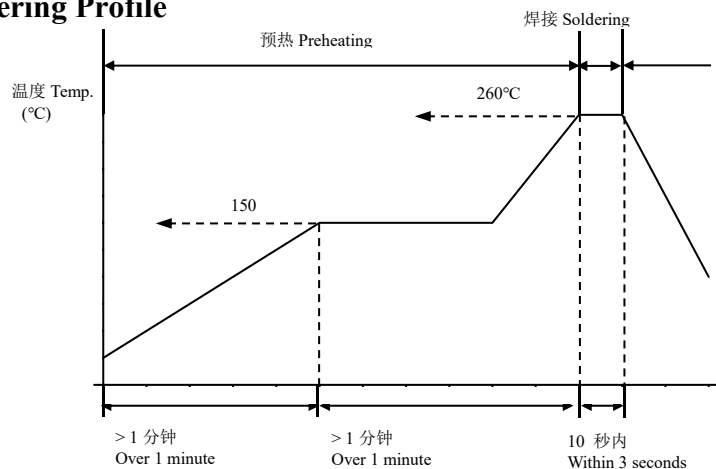
■焊接要求 Soldering

●焊剂的选择 Flux Selection

- 建议使用一种轻度活性焊剂（氯含量少于 0.1wt%），避免使用活性过强的焊剂。
It is recommended to use a mildly activated rosin flux (less than 0.1wt% chlorine). Strong flux is not recommended.
- 请使用适量的焊剂，避免过量。
Please provide proper amount of flux. Excessive flux must be avoided.
- 当使用可溶水的焊剂时，需要进行充分的洗涤。
When water-soluble flux is used, enough washing is necessary.

■焊接曲线的设计 Recommended Soldering Profile

●回流焊条件 Reflow Soldering Condition



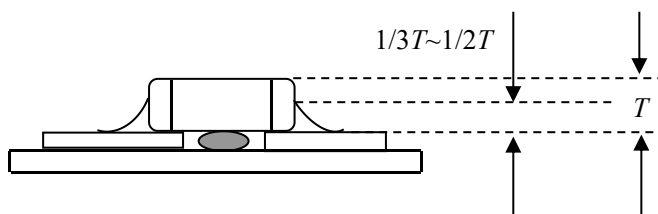
注意 Cautions:

a. 过度的焊锡会在温度变化时产生较高的张力，从而导致裂纹。而少量的焊锡可能会导致电容器与 PCB 分离。

Excessive solder will induce higher tensile force in chip capacitor when temperature changes and result in cracking. Insufficient solder may detach the capacitors from the PC board.

理想的条件是焊锡量控制在电容器厚度的 $1/3 \sim 1/2$ ，如图所示：

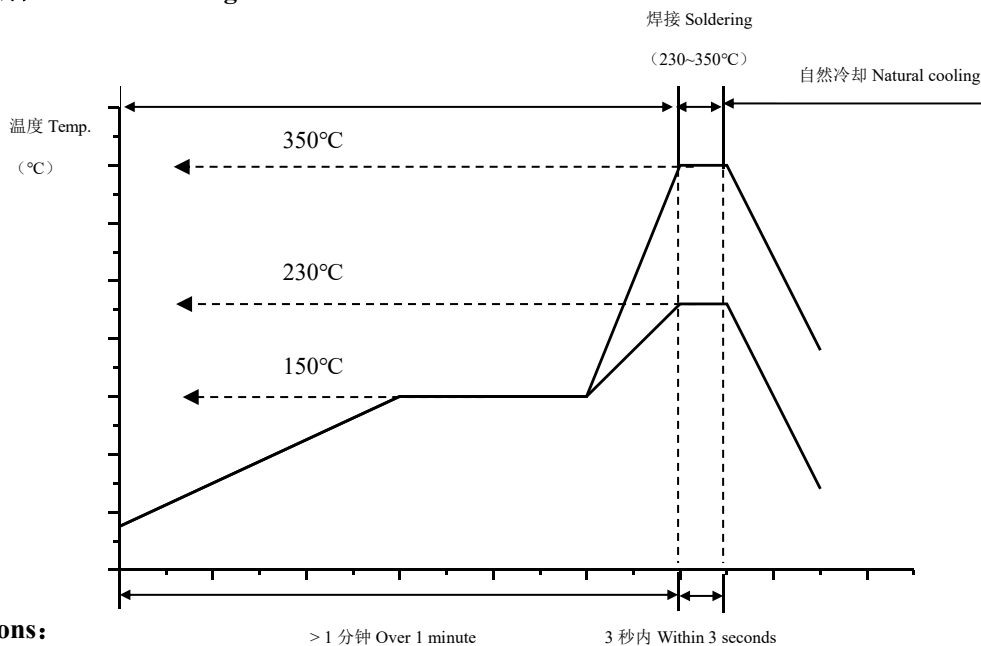
The ideal condition is to have solder mass controlled to $1/3$ to $1/2$ of the thickness of the capacitor



b. 焊接时间尽量与建议的时间相近，过长的时间会影响可焊效果。

Soldering duration should be kept as close to recommended times as possible, because excessive duration can detrimentally affect solderability.

●手工焊条件 Hand Soldering Condition



注意 Cautions:

a. 使用 20W 的烙铁（最大直径 1.0mm）；

Use a 20W soldering iron with a maximum tip diameter of 1.0mm

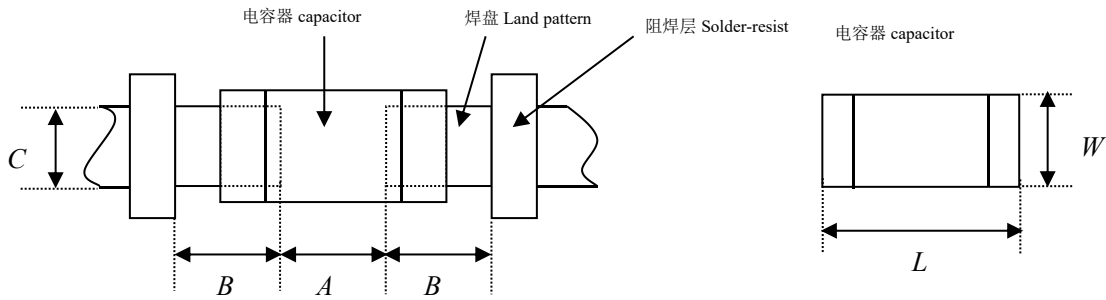
b. 烙铁不能够直接接触电容器。

The soldering iron should not directly touch the capacitor.

■ 焊盘设计 Design of Land-patterns

电容器贴装在 PCB 上时，端头焊锡量对电容器的性能有直接的联系。焊锡量越多，施加在电容器上的应力就越大。因此，设计焊盘时，必须考虑焊锡的尺寸和结构：

When the capacitors are mounted on a PCB, the amount of solder at the terminations has a direct effect on the performance of the capacitors. The greater the amount of solder, the higher the stress on the chip capacitor. Therefore, when designing land-patterns, it is necessary to consider the appropriate size and configuration of the solder pads.



回流焊的建议设计 (单位: mm)

Recommend land dimensions for reflow-soldering (unit: mm)

类型 Type		01005	0201	0402	0603	0805	1206
尺寸 Size	L	0.4	0.6	1.0	1.6	2.0	3.2
	W	0.2	0.3	0.5	0.8	1.25	1.6
A		0.16~0.20	0.20~0.30	0.30~0.50	0.60~0.80	0.80~1.20	2.20~2.40
B		0.12~0.18	0.20~0.35	0.35~0.45	0.60~0.70	0.60~0.70	0.80~0.90
C		0.20~0.23	0.20~0.40	0.45~0.55	0.60~0.80	0.80~1.10	1.00~1.40

注意事项 Notes

■ 贮存条件 Storage Condition

- 产品贮存周期为 12 个月，超过 12 个月需重新提交检验。
- 贮存温度需小于 35°C，相对湿度需小于 RH70%。

■ 工作温度 Operating Temperature

- 电容器使用过程中避免超过其上限类别温度。

Do not use capacitor above the maximum allowable operating temperature.

- 表面温度以及自加热温度应该低于电容器的上限类别温度。

Surface temperature including self heating should be below maximum operating temperature.

■ 工作电压 Operating Voltage

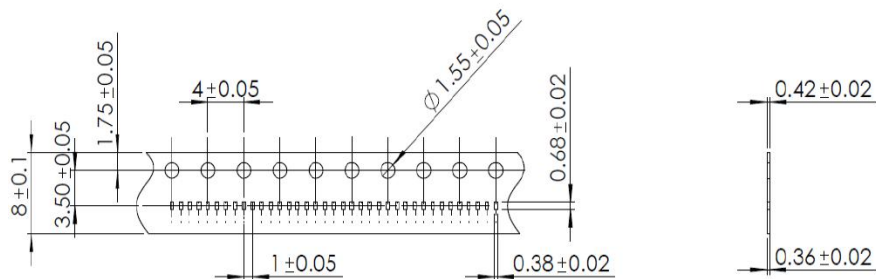
电容器的工作电压必须低于其额定电压。

The operating voltage of the capacitor must be lower than its rated voltage.

环保助力 Environmental protection

随着电子产品的飞速发展，电子元器件的使用越来越多，器件包装所需的原材料纸带的需求也日益增长。为了更充分地利用我们的植被资源、节省树木带来的纸质原材料，我司推出 1mm 间距纸带，针对 0201 尺寸（EIA），一个 7 英寸胶盘可容纳 30Kpcs 的 0201MLCC，一盘等于从前的两盘，充分利用了纸带间的间隙。作为电子元器件生产商的一员，我们期待您的助力！

With the rapid development of electronic products, the demand of electronic components is increasing, and the demand for raw materials for paper packaging is increasing. In order to make full use of our vegetation resources and save paper raw materials brought by trees, we have introduced 1mm pitch paper tape for 0201 size (EIA), a 7-inch disc can hold 30Kpcs of 0201MLCC, one disc is equal to the previous two, make full use of the gap between the paper tap. As a member of the electronic component manufacturer, we look forward to your help!



单位：mm

1mm 纸带图示