



VIIYONG

产品手册

CALATOG2020

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片式多层陶瓷电容器产品手册

MULTILAYER CERAMIC CHIP CAPACITORS

目录 Index

02

产品型号及代码定义
Part Number System

06

温度补偿型片式多层陶瓷电容器COG
Temperature Compensated MLCC (COG)

17

RF/微波片式多层陶瓷电容器系列HQC
RF and Microwave MLCC

27

高介电常数型片式多层陶瓷电容器系列 X5R
High Dielectric MLCC(X5R)

36

高介电常数型片式多层陶瓷电容器系列 X7R
High Dielectric MLCC(X7R)

41

高温型片式多层陶瓷电容器系列 X6S
High Temperature MLCC(X6S)

46

高温型片式多层陶瓷电容器系列X7T
High Temperature MLCC(X7T)

50

应用技术要求
Technical Requirements in Applications

55

注意事项
Notes
环保助力
Environmental Protection

因为同一个产品可以有不同的包装方式(如0201尺寸可以编带为15K/盘和50K/盘),在本产品目录中,产品物料编码中的包装代码用“*”号替代,需要完整的物料编码时,请参照第2-4页的包装编码补全,或者与我司联系确认。

As there can be different packaging types for the same MLCC chip (eg. 15000pcs/reel and 50000pcs/reel for 0201 series), in this catalog, the packaging code in a part number is replaced by "". When a complete part number is required, please refer to packaging code instruction on page 2 and page 4, or please contact VIYYONG.*

产品型号规格及代码定义 Part Number System

举例Example — **V** **101** **J** **0201** **C0G** **500** **N** **A** *****
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① 产品代码 Product Code

V表示VIIYONG通用型片式多层陶瓷电容器。

“V” represents multi-layer ceramic chip capacitor for general purpose

② 标称容量代码 Nominal Capacitance Code

表示标称容量(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 nominal capacitance code is expressed in pico-farads and identified by a three-digit number. The first two digits represent significant figures. The last digit is a power of ten.

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

③ 标称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%

④ 尺寸代码 Size 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

⑤ 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	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

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 latter digit is a power of ten, where the decimal point is represented by the letter R.

例如 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

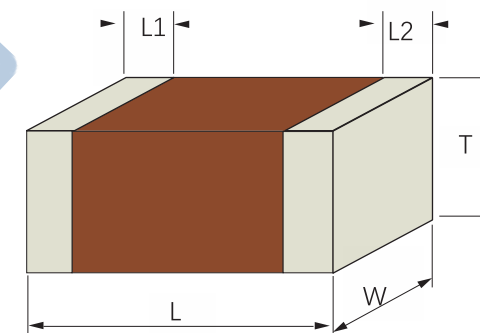
N表示Cu/Ni/Sn三层结构(Nickel Barrier).

N represent the “Cu/Ni/Sn” Structure.

⑧ 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

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
0402	1.00 ± 0.05	0.50 ± 0.05	0.10~0.35	0.50 ± 0.05	B
	1.00 ^{+0.13} _{-0.05}	0.50 ^{+0.13} _{-0.05}	0.10~0.35	0.50 ^{+0.13} _{-0.05}	N
	1.00 ^{+0.20} _{-0.05}	0.50 ^{+0.20} _{-0.05}	0.10~0.35	0.50 ^{+0.20} _{-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 ± 0.25	0.80 ± 0.25	0.20~0.60	0.80 ± 0.25	4
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

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 Tape Type	包装数 QTY (Kpcs)
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 微容控制代码 VIIYONG Control 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 Tape 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
0402	J	13"	纸带 Paper	50
	T	7"	纸带 Paper	10
	X	13"	纸带 Paper	40
0603	J	13"	纸带 Paper	50
	R	7"	塑带 Plastic	3
	W	7"	纸带 Paper	3
	A	13"	纸带 Paper	15
0805	T	7"	纸带 Paper	4
	P	7"	塑带 Plastic	2
	R	7"	塑带 Plastic	3

温度补偿型片式多层陶瓷电容器系列 COG *Temperature Compensated MLCC (COG)*

温度特性 T.C. Code	微容系列代码 VIIYONG Type Code	尺寸范围(EIA) Size	额定电压范围 Rated Voltage	静电容量范围 Capacitance
COG	COG	01005~0402	25~50Vdc	1.0pF~1.0nF

特点 Characteristics

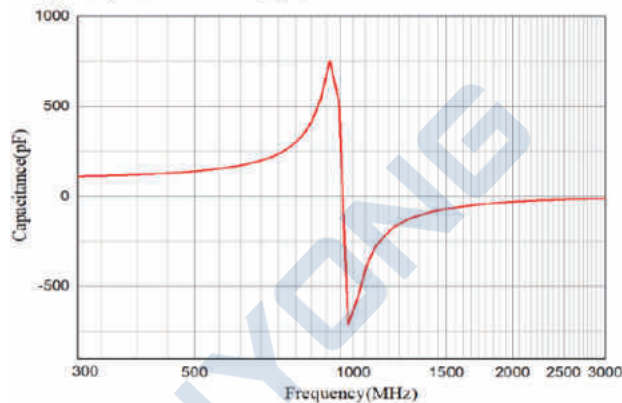
高可靠性、高稳定性、低损耗 High reliability, high stability and low dissipation
容值范围宽 Wide range of capacitance

应用领域 Application Field

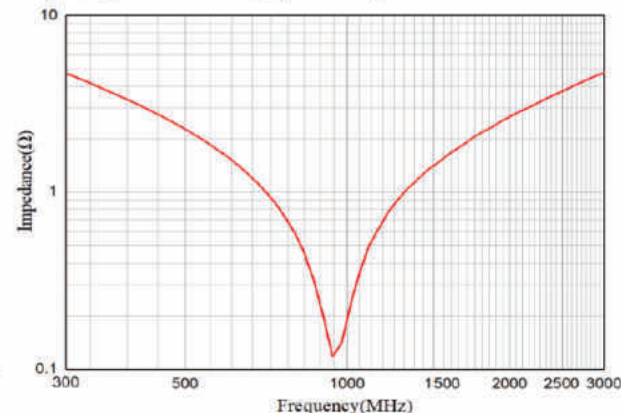
高频滤波电路、LC振荡电路、调谐电路、RC带通电路等
High frequency filter circuit, LC oscillation circuit, tuning circuit, RC bandpass circuit etc.

高频特性 High Frequency Characteristics

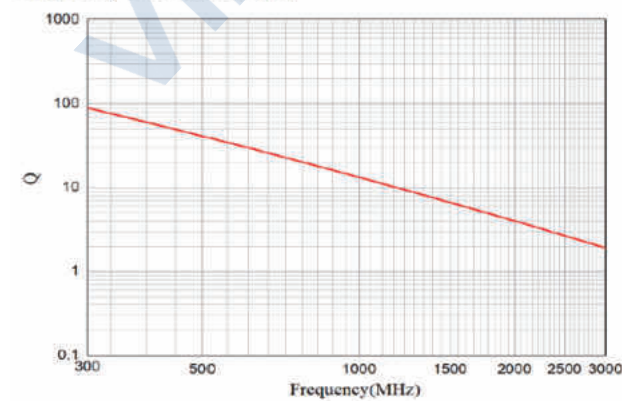
Frequency Characteristics(Cp-f)



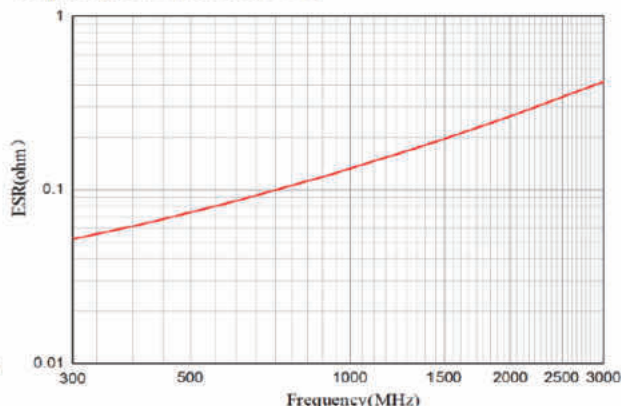
Frequency Characteristics(Impedance-f)



Frequency Characteristics(Q-f)



Frequency Characteristics(ESR-f)



注:上图为COG的100pF高频特性。

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

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness (mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
01005	COG	COG	25	0.22 (max)	1pF	±0.1pF	V1R0B0105COG250NZ*
						±0.25pF	V1R0C0105COG250NZ*
					1.2pF	±0.1pF	V1R2B0105COG250NZ*
						±0.25pF	V1R2C0105COG250NZ*
					1.5pF	±0.1pF	V1R5B0105COG250NZ*
						±0.25pF	V1R5C0105COG250NZ*
					1.8pF	±0.1pF	V1R8B0105COG250NZ*
						±0.25pF	V1R8C0105COG250NZ*
					2pF	±0.1pF	V2R0B0105COG250NZ*
						±0.25pF	V2R0C0105COG250NZ*
					2.2pF	±0.1pF	V2R2B0105COG250NZ*
						±0.25pF	V2R2C0105COG250NZ*
					2.4pF	±0.1pF	V2R4B0105COG250NZ*
						±0.25pF	V2R4C0105COG250NZ*
					2.7pF	±0.1pF	V2R7B0105COG250NZ*
						±0.25pF	V2R7C0105COG250NZ*
					3pF	±0.1pF	V3R0B0105COG250NZ*
						±0.25pF	V3R0C0105COG250NZ*
					3.6pF	±0.1pF	V3R6B0105COG250NZ*
						±0.25pF	V3R6C0105COG250NZ*
					3.9pF	±0.1pF	V3R9B0105COG250NZ*
						±0.25pF	V3R9C0105COG250NZ*
					4pF	±0.1pF	V4R0B0105COG250NZ*
						±0.25pF	V4R0C0105COG250NZ*
					4.7pF	±0.1pF	V4R7B0105COG250NZ*
						±0.25pF	V4R7C0105COG250NZ*
					5pF	±0.1pF	V5R0B0105COG250NZ*
						±0.25pF	V5R0C0105COG250NZ*
					5.6pF	±0.25pF	V5R6C0105COG250NZ*
						±0.5pF	V5R6D0105COG250NZ*
					6.8pF	±0.25pF	V6R8C0105COG250NZ*
						±0.5pF	V6R8D0105COG250NZ*
7.5pF	±0.25pF	V7R5C0105COG250NZ*					
	±0.5pF	V7R5D0105COG250NZ*					
8pF	±0.25pF	V8R0C0105COG250NZ*					
	±0.5pF	V8R0D0105COG250NZ*					
8.2pF	±0.25pF	V8R2C0105COG250NZ*					
	±0.5pF	V8R2D0105COG250NZ*					

规格型号及品名 *SpedificatiomgModdlRand NamDarmber*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness (mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
01005	COG	COG	25	0.22 (max)	9pF	±0.25pF	V9R0C0105COG250NZ*
						±0.5pF	V9R0D0105COG250NZ*
					10pF	±2%	V100G0105COG250NZ*
						±5%	V100J0105COG250NZ*
					12pF	±2%	V120G0105COG250NZ*
						±5%	V120J0105COG250NZ*
					15pF	±2%	V150G0105COG250NZ*
						±5%	V150J0105COG250NZ*
					18pF	±2%	V180G0105COG250NZ*
						±5%	V180J0105COG250NZ*
					20pF	±2%	V200G0105COG250NZ*
						±5%	V200J0105COG250NZ*
					22pF	±2%	V220G0105COG250NZ*
						±5%	V220J0105COG250NZ*
					24pF	±2%	V240G0105COG250NZ*
						±5%	V240J0105COG250NZ*
					27pF	±2%	V270G0105COG250NZ*
						±5%	V270J0105COG250NZ*
					33pF	±2%	V330G0105COG250NZ*
						±5%	V330J0105COG250NZ*
					39pF	±2%	V390G0105COG250NZ*
						±5%	V390J0105COG250NZ*
					47pF	±2%	V470G0105COG250NZ*
						±5%	V470J0105COG250NZ*
					56pF	±2%	V560G0105COG250NZ*
						±5%	V560J0105COG250NZ*
					68pF	±2%	V680G0105COG250NZ*
						±5%	V680J0105COG250NZ*
82pF	±2%	V820G0105COG250NZ*					
	±5%	V820J0105COG250NZ*					
100pF	±2%	V101G0105COG250NZ*					
	±5%	V101J0105COG250NZ*					
0201	COG	COG	50	0.33 (max)	1pF	±0.05pF	V1R0A0201COG500NA*
						±0.1pF	V1R0B0201COG500NA*
						±0.25pF	V1R0C0201COG500NA*
					1.2pF	±0.05pF	V1R2A0201COG500NA*
						±0.1pF	V1R2B0201COG500NA*
						±0.25pF	V1R2C0201COG500NA*

规格型号及品名 *SpedificatiomgModdlRand NamDarmber*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness (mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0201	COG	COG	50	0.33 (max)	1.5pF	±0.05pF	V1R5A0201COG500NA*
						±0.1pF	V1R5B0201COG500NA*
						±0.25pF	V1R5C0201COG500NA*
					1.8pF	±0.05pF	V1R8A0201COG500NA*
						±0.1pF	V1R8B0201COG500NA*
						±0.25pF	V1R8C0201COG500NA*
					2pF	±0.05pF	V2R0A0201COG500NA*
						±0.1pF	V2R0B0201COG500NA*
						±0.25pF	V2R0C0201COG500NA*
					2.2pF	±0.05pF	V2R2A0201COG500NA*
						±0.1pF	V2R2B0201COG500NA*
						±0.25pF	V2R2C0201COG500NA*
					2.4pF	±0.05pF	V2R4A0201COG500NA*
						±0.1pF	V2R4B0201COG500NA*
						±0.25pF	V2R4C0201COG500NA*
					2.7pF	±0.05pF	V2R7A0201COG500NA*
						±0.1pF	V2R7B0201COG500NA*
						±0.25pF	V2R7C0201COG500NA*
					3pF	±0.05pF	V3R0A0201COG500NA*
						±0.1pF	V3R0B0201COG500NA*
						±0.25pF	V3R0C0201COG500NA*
					3.3pF	±0.05pF	V3R3A0201COG500NA*
						±0.1pF	V3R3B0201COG500NA*
						±0.25pF	V3R3C0201COG500NA*
					3.6pF	±0.05pF	V3R6A0201COG500NA*
						±0.1pF	V3R6B0201COG500NA*
						±0.25pF	V3R6C0201COG500NA*
					3.9pF	±0.05pF	V3R9A0201COG500NA*
±0.1pF	V3R9B0201COG500NA*						
±0.25pF	V3R9C0201COG500NA*						
4pF	±0.05pF	V4R0A0201COG500NA*					
	±0.1pF	V4R0B0201COG500NA*					
	±0.25pF	V4R0C0201COG500NA*					
4.3pF	±0.05pF	V4R3A0201COG500NA*					
	±0.1pF	V4R3B0201COG500NA*					
	±0.25pF	V4R3C0201COG500NA*					

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0201	COG	COG	50	0.33(max)	4.7pF	±0.05pF	V4R7A0201COG500NA*
						±0.1pF	V4R7B0201COG500NA*
						±0.25pF	V4R7C0201COG500NA*
					5pF	±0.05pF	V5R0A0201COG500NA*
						±0.1pF	V5R0B0201COG500NA*
						±0.25pF	V5R0C0201COG500NA*
					5.6pF	±0.1pF	V5R6B0201COG500NA*
						±0.25pF	V5R6C0201COG500NA*
						±0.5pF	V5R6D0201COG500NA*
					6.0pF	±0.1pF	V6R0B0201COG500NA*
						±0.25pF	V6R0C0201COG500NA*
						±0.5pF	V6R0D0201COG500NA*
					6.2pF	±0.1pF	V6R2B0201COG500NA*
						±0.25pF	V6R2C0201COG500NA*
						±0.5pF	V6R2D0201COG500NA*
					6.8pF	±0.1pF	V6R8B0201COG500NA*
						±0.25pF	V6R8C0201COG500NA*
						±0.5pF	V6R8D0201COG500NA*
					7pF	±0.1pF	V7R0B0201COG500NA*
						±0.25pF	V7R0C0201COG500NA*
						±0.5pF	V7R0D0201COG500NA*
					7.5pF	±0.1pF	V7R5B0201COG500NA*
						±0.25pF	V7R5C0201COG500NA*
						±0.5pF	V7R5D0201COG500NA*
					8pF	±0.1pF	V8R0B0201COG500NA*
						±0.25pF	V8R0C0201COG500NA*
						±0.5pF	V8R0D0201COG500NA*
					8.2pF	±0.1pF	V8R2B0201COG500NA*
						±0.25pF	V8R2C0201COG500NA*
						±0.5pF	V8R2D0201COG500NA*
					9pF	±0.1pF	V9R0B0201COG500NA*
						±0.25pF	V9R0C0201COG500NA*
						±0.5pF	V9R0D0201COG500NA*
					10pF	±2%	V100G0201COG500NA*
						±5%	V100J0201COG500NA*
					12pF	±2%	V120G0201COG500NA*
±5%	V120J0201COG500NA*						

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0201	COG	COG	50	0.33(max)	15pF	±2%	V150G0201COG500NA*
						±5%	V150J0201COG500NA*
					18pF	±2%	V180G0201COG500NA*
						±5%	V180J0201COG500NA*
					20pF	±2%	V200G0201COG500NA*
						±5%	V200J0201COG500NA*
					22pF	±2%	V220G0201COG500NA*
						±5%	V220J0201COG500NA*
					27pF	±2%	V270G0201COG500NA*
						±5%	V270J0201COG500NA*
					30pF	±2%	V300G0201COG500NA*
						±5%	V300J0201COG500NA*
					33pF	±2%	V330G0201COG500NA*
						±5%	V330J0201COG500NA*
					39pF	±2%	V390G0201COG500NA*
						±5%	V390J0201COG500NA*
					47pF	±2%	V470G0201COG500NA*
						±5%	V470J0201COG500NA*
					56pF	±2%	V560G0201COG500NA*
						±5%	V560J0201COG500NA*
					68pF	±2%	V680G0201COG500NA*
						±5%	V680J0201COG500NA*
					82pF	±2%	V820G0201COG500NA*
						±5%	V820J0201COG500NA*
			100pF		±2%	V101G0201COG500NA*	
					±5%	V101J0201COG500NA*	
			120pF		±2%	V121G0201COG500NA*	
					±5%	V121J0201COG500NA*	
			150pF		±2%	V151G0201COG500NA*	
					±5%	V151J0201COG500NA*	
			180pF		±2%	V181G0201COG500NA*	
					±5%	V181J0201COG500NA*	
			220pF		±2%	V221G0201COG500NA*	
					±5%	V221J0201COG500NA*	
			270pF		±2%	V271G0201COG250NA*	
					±5%	V271J0201COG250NA*	
330pF	±2%	V331G0201COG250NA*					
	±5%	V331J0201COG250NA*					
			25				

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0201	COG	COG	25	0.33(max)	390pF	±2%	V391G0201COG250NA*
						±5%	V391J0201COG250NA*
					470pF	±2%	V471G0201COG250NA*
						±5%	V471J0201COG250NA*
					560pF	±2%	V561G0201COG250NA*
						±5%	V561J0201COG250NA*
					680pF	±2%	V681G0201COG250NA*
						±5%	V681J0201COG250NA*
					820pF	±2%	V821G0201COG250NA*
						±5%	V821J0201COG250NA*
					1nF	±2%	V102G0201COG250NA*
						±5%	V102J0201COG250NA*
±5%	V102J0201COG250NA*						
0402	COG	COG	50	0.55(max)	1pF	±0.05pF	V1R0A0402COG500NB*
						±0.1pF	V1R0B0402COG500NB*
						±0.25pF	V1R0C0402COG500NB*
					1.2pF	±0.05pF	V1R2A0402COG500NB*
						±0.1pF	V1R2B0402COG500NB*
						±0.25pF	V1R2C0402COG500NB*
					1.5pF	±0.05pF	V1R5A0402COG500NB*
						±0.1pF	V1R5B0402COG500NB*
						±0.25pF	V1R5C0402COG500NB*
					1.8pF	±0.05pF	V1R8A0402COG500NB*
						±0.1pF	V1R8B0402COG500NB*
						±0.25pF	V1R8C0402COG500NB*
					2pF	±0.05pF	V2R0A0402COG500NB*
						±0.1pF	V2R0B0402COG500NB*
						±0.25pF	V2R0C0402COG500NB*
					2.2pF	±0.05pF	V2R2A0402COG500NB*
						±0.1pF	V2R2B0402COG500NB*
						±0.25pF	V2R2C0402COG500NB*
					2.4pF	±0.05pF	V2R4A0402COG500NB*
						±0.1pF	V2R4B0402COG500NB*
						±0.25pF	V2R4C0402COG500NB*
					2.7pF	±0.05pF	V2R7A0402COG500NB*
						±0.1pF	V2R7B0402COG500NB*
						±0.25pF	V2R7C0402COG500NB*

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0402	COG	COG	50	0.55(max)	3pF	±0.05pF	V3R0A0402COG500NB*
						±0.1pF	V3R0B0402COG500NB*
						±0.25pF	V3R0C0402COG500NB*
					3.3pF	±0.05pF	V3R3A0402COG500NB*
						±0.1pF	V3R3B0402COG500NB*
						±0.25pF	V3R3C0402COG500NB*
					3.6pF	±0.05pF	V3R6A0402COG500NB*
						±0.1pF	V3R6B0402COG500NB*
						±0.25pF	V3R6C0402COG500NB*
					3.9pF	±0.05pF	V3R9A0402COG500NB*
						±0.1pF	V3R9B0402COG500NB*
						±0.25pF	V3R9C0402COG500NB*
					4pF	±0.05pF	V4R0A0402COG500NB*
						±0.1pF	V4R0B0402COG500NB*
						±0.25pF	V4R0C0402COG500NB*
					4.3pF	±0.05pF	V4R3A0402COG500NB*
						±0.1pF	V4R3B0402COG500NB*
						±0.25pF	V4R3C0402COG500NB*
					4.7pF	±0.05pF	V4R7A0402COG500NB*
						±0.1pF	V4R7B0402COG500NB*
						±0.25pF	V4R7C0402COG500NB*
					5pF	±0.05pF	V5R0A0402COG500NB*
						±0.1pF	V5R0B0402COG500NB*
						±0.25pF	V5R0C0402COG500NB*
5.6pF	±0.1pF	V5R6B0402COG500NB*					
	±0.25pF	V5R6C0402COG500NB*					
	±0.5pF	V5R6D0402COG500NB*					
6.0pF	±0.1pF	V6R0B0402COG500NB*					
	±0.25pF	V6R0C0402COG500NB*					
	±0.5pF	V6R0D0402COG500NB*					
6.2pF	±0.1pF	V6R2B0402COG500NB*					
	±0.25pF	V6R2C0402COG500NB*					
	±0.5pF	V6R2D0402COG500NB*					
6.8pF	±0.1pF	V6R8B0402COG500NB*					
	±0.25pF	V6R8C0402COG500NB*					
	±0.5pF	V6R8D0402COG500NB*					

规格型号及品名 Product Range and Part Number

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0402	COG	COG	50	0.55(max)	7pF	±0.1pF	V7R0B0402COG500NB*
						±0.25pF	V7R0C0402COG500NB*
						±0.5pF	V7R0D0402COG500NB*
					7.5pF	±0.1pF	V7R5B0402COG500NB*
						±0.25pF	V7R5C0402COG500NB*
						±0.5pF	V7R5D0402COG500NB*
					8pF	±0.1pF	V8R0B0402COG500NB*
						±0.25pF	V8R0C0402COG500NB*
						±0.5pF	V8R0D0402COG500NB*
					8.2pF	±0.1pF	V8R2B0402COG500NB*
						±0.25pF	V8R2C0402COG500NB*
						±0.5pF	V8R2D0402COG500NB*
					9pF	±0.1pF	V9R0B0402COG500NB*
						±0.25pF	V9R0C0402COG500NB*
						±0.5pF	V9R0D0402COG500NB*
					10pF	±2%	V100G0402COG500NB*
						±5%	V100J0402COG500NB*
					12pF	±2%	V120G0402COG500NB*
						±5%	V120J0402COG500NB*
					15pF	±2%	V150G0402COG500NB*
						±5%	V150J0402COG500NB*
					18pF	±2%	V180G0402COG500NB*
						±5%	V180J0402COG500NB*
					20pF	±2%	V200G0402COG500NB*
						±5%	V200J0402COG500NB*
					22pF	±2%	V220G0402COG500NB*
						±5%	V220J0402COG500NB*
					24pF	±2%	V240G0402COG500NB*
						±5%	V240J0402COG500NB*
					27pF	±2%	V270G0402COG500NB*
						±5%	V270J0402COG500NB*
					30pF	±2%	V300G0402COG500NB*
						±5%	V300J0402COG500NB*
					33pF	±2%	V330G0402COG500NB*
						±5%	V330J0402COG500NB*
					36pF	±2%	V360G0402COG500NB*
±5%	V360J0402COG500NB*						

规格型号及品名 Product Range and Part Number

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0402	COG	COG	50	0.55(max)	39pF	±2%	V390G0402COG500NB*
						±5%	V390J0402COG500NB*
					47pF	±2%	V470G0402COG500NB*
						±5%	V470J0402COG500NB*
					56pF	±2%	V560G0402COG500NB*
						±5%	V560J0402COG500NB*
					68pF	±2%	V680G0402COG500NB*
						±5%	V680J0402COG500NB*
					82pF	±2%	V820G0402COG500NB*
						±5%	V820J0402COG500NB*
					100pF	±2%	V101G0402COG500NB*
						±5%	V101J0402COG500NB*
					120pF	±2%	V121G0402COG500NB*
						±5%	V121J0402COG500NB*
					150pF	±2%	V151G0402COG500NB*
						±5%	V151J0402COG500NB*
					180pF	±2%	V181G0402COG500NB*
						±5%	V181J0402COG500NB*
					200pF	±2%	V201G0402COG500NB*
						±5%	V201J0402COG500NB*
					220pF	±2%	V221G0402COG500NB*
						±5%	V221J0402COG500NB*
					270pF	±2%	V271G0402COG500NB*
						±5%	V271J0402COG500NB*
330pF	±2%	V331G0402COG500NB*					
	±5%	V331J0402COG500NB*					
360pF	±2%	V361G0402COG500NB*					
	±5%	V361J0402COG500NB*					
390pF	±2%	V391G0402COG500NB*					
	±5%	V391J0402COG500NB*					
470pF	±2%	V471G0402COG500NB*					
	±5%	V471J0402COG500NB*					
560pF	±2%	V561G0402COG500NB*					
	±5%	V561J0402COG500NB*					
680pF	±2%	V681G0402COG500NB*					
	±5%	V681J0402COG500NB*					
820pF	±2%	V821G0402COG500NB*					
	±5%	V821J0402COG500NB*					

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0402	COG	COG	50	0.55 (max)	1.0nF	±2%	V102G0402COG500NB*
						±5%	V102J0402COG500NB*

*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 Shows 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 shown as straight line.

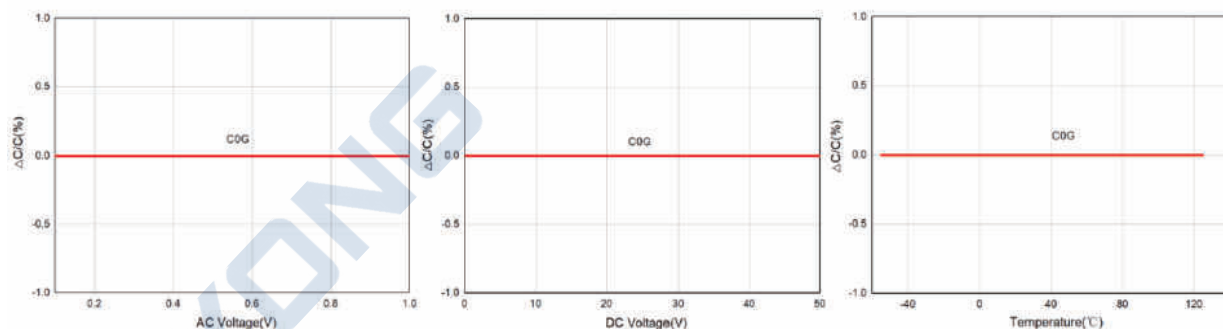


图 COG的AC/DC/TC特性曲(AC/DC/TC characteristics curve of COG)

RF/微波片式多层陶瓷电容器系列 HQC *RF and Microwave Circuit MLCC (HQC)*

温度特性 T.C. Code	微容系列代码 VIIYONG Type Code	尺寸范围(EIA) Size	额定电压范围 Rated Voltage	静电容量范围 Capacitance
C0G	HQC	01005~0402	25~50Vdc	0.1 pF~33pF

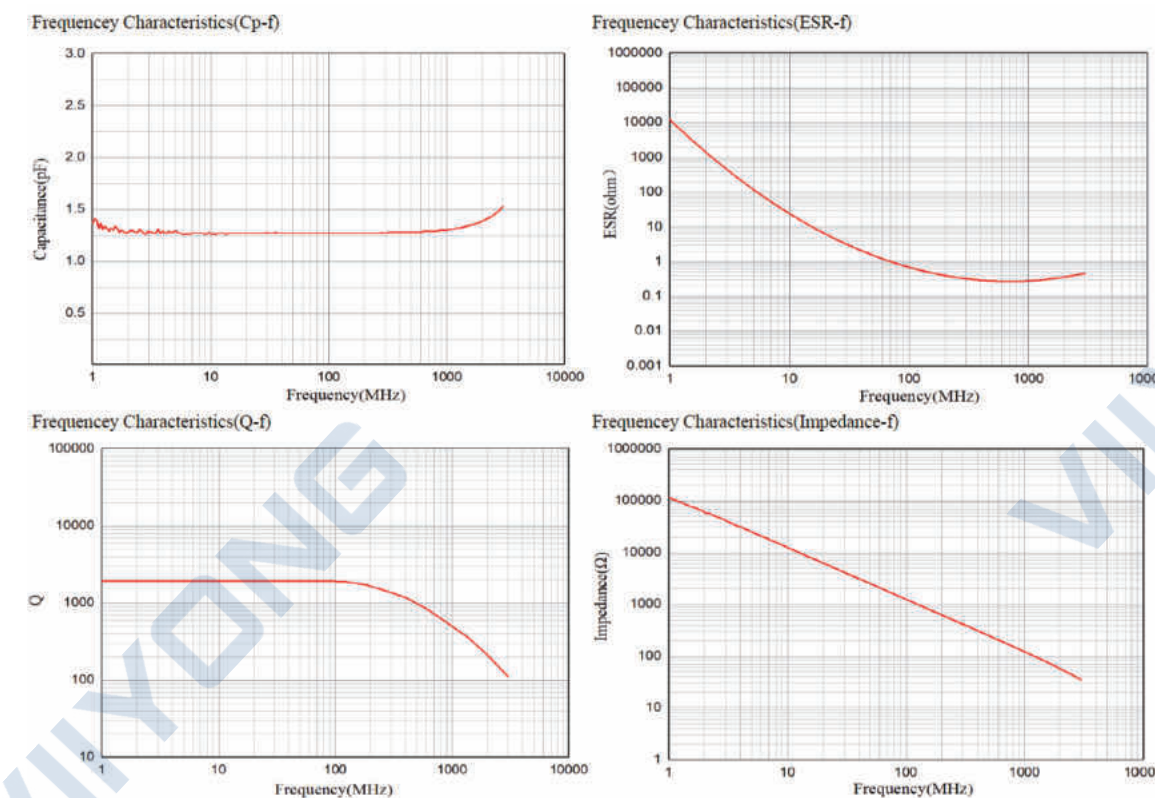
HQC特点 **Characteristics**

1.稳定性高 High stability 2.低ESR Low ESR 3.高Q值 High Q

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:上图为HQC的1.2pF高频特性。

The figure above shows the high frequency characteristics of HQC,1.2pF.

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
01005	HQC	COG	25	0.22(max)	0.2pF	±0.05pF	V0R2A0105HQC250NZ*
						±0.1pF	V0R2B0105HQC250NZ*
						±0.25pF	V0R2C0105HQC250NZ*
					0.3pF	±0.05pF	V0R3A0105HQC250NZ*
						±0.1pF	V0R3B0105HQC250NZ*
						±0.25pF	V0R3C0105HQC250NZ*
					0.4pF	±0.05pF	V0R4A0105HQC250NZ*
						±0.1pF	V0R4B0105HQC250NZ*
						±0.25pF	V0R4C0105HQC250NZ*
					0.5pF	±0.05pF	V0R5A0105HQC250NZ*
						±0.1pF	V0R5B0105HQC250NZ*
						±0.25pF	V0R5C0105HQC250NZ*
					0.6pF	±0.05pF	V0R6A0105HQC250NZ*
						±0.1pF	V0R6B0105HQC250NZ*
						±0.25pF	V0R6C0105HQC250NZ*
					0.7pF	±0.05pF	V0R7A0105HQC250NZ*
						±0.1pF	V0R7B0105HQC250NZ*
						±0.25pF	V0R7C0105HQC250NZ*
					0.8pF	±0.05pF	V0R8A0105HQC250NZ*
						±0.1pF	V0R8B0105HQC250NZ*
						±0.25pF	V0R8C0105HQC250NZ*
					0.9pF	±0.05pF	V0R9A0105HQC250NZ*
						±0.1pF	V0R9B0105HQC250NZ*
						±0.25pF	V0R9C0105HQC250NZ*
					1pF	±0.05pF	V1R0A0105HQC250NZ*
						±0.1pF	V1R0B0105HQC250NZ*
						±0.25pF	V1R0C0105HQC250NZ*
					1.2pF	±0.05pF	V1R2A0105HQC250NZ*
						±0.1pF	V1R2B0105HQC250NZ*
						±0.25pF	V1R2C0105HQC250NZ*
1.3pF	±0.05pF	V1R3A0105HQC250NZ*					
	±0.1pF	V1R3B0105HQC250NZ*					
	±0.25pF	V1R3C0105HQC250NZ*					
1.5pF	±0.05pF	V1R5A0105HQC250NZ*					
	±0.1pF	V1R5B0105HQC250NZ*					
	±0.25pF	V1R5C0105HQC250NZ*					

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
01005	HQC	COG	25	0.22(max)	1.8pF	±0.05pF	V1R8A0105HQC250NZ*
						±0.1pF	V1R8B0105HQC250NZ*
						±0.25pF	V1R8C0105HQC250NZ*
					2pF	±0.05pF	V2R0A0105HQC250NZ*
						±0.1pF	V2R0B0105HQC250NZ*
						±0.25pF	V2R0C0105HQC250NZ*
					2.2pF	±0.05pF	V2R2A0105HQC250NZ*
						±0.1pF	V2R2B0105HQC250NZ*
						±0.25pF	V2R2C0105HQC250NZ*
					2.4pF	±0.05pF	V2R4A0105HQC250NZ*
						±0.1pF	V2R4B0105HQC250NZ*
						±0.25pF	V2R4C0105HQC250NZ*
					2.7pF	±0.05pF	V2R7A0105HQC250NZ*
						±0.1pF	V2R7B0105HQC250NZ*
						±0.25pF	V2R7C0105HQC250NZ*
					3pF	±0.05pF	V3R0A0105HQC250NZ*
						±0.1pF	V3R0B0105HQC250NZ*
						±0.25pF	V3R0C0105HQC250NZ*
					3.6pF	±0.05pF	V3R6A0105HQC250NZ*
						±0.1pF	V3R6B0105HQC250NZ*
						±0.25pF	V3R6C0105HQC250NZ*
					3.9pF	±0.05pF	V3R9A0105HQC250NZ*
						±0.1pF	V3R9B0105HQC250NZ*
						±0.25pF	V3R9C0105HQC250NZ*
					4pF	±0.05pF	V4R0A0105HQC250NZ*
						±0.1pF	V4R0B0105HQC250NZ*
						±0.25pF	V4R0C0105HQC250NZ*
					4.7pF	±0.05pF	V4R7A0105HQC250NZ*
						±0.1pF	V4R7B0105HQC250NZ*
						±0.25pF	V4R7C0105HQC250NZ*
5pF	±0.05pF	V5R0A0105HQC250NZ*					
	±0.1pF	V5R0B0105HQC250NZ*					
	±0.25pF	V5R0C0105HQC250NZ*					
5.6pF	±0.1pF	V5R6B0105HQC250NZ*					
	±0.25pF	V5R6C0105HQC250NZ*					
	6pF	±0.1pF	V6R0B0105HQC250NZ*				
±0.25pF		V6R0C0105HQC250NZ*					

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application code	温度特性代码 T. C. Code	额定电压 U _R (Vdc)	厚度 Thickness (mm)	静电容量 Cap.	允许偏差 Tolerance	品名 PartNumber
01005	HQC	COG	25	0.22 (max)	6.2pF	±0.1pF	V6R2B0105HQC250NZ*
						±0.25pF	V6R2C0105HQC250NZ*
					6.8pF	±0.1pF	V6R8B0105HQC250NZ*
						±0.25pF	V6R8C0105HQC250NZ*
					7pF	±0.1pF	V7R0B0105HQC250NZ*
						±0.25pF	V7R0C0105HQC250NZ*
					7.5pF	±0.1pF	V7R5B0105HQC250NZ*
						±0.25pF	V7R5C0105HQC250NZ*
					8pF	±0.1pF	V8R0B0105HQC250NZ*
						±0.25pF	V8R0C0105HQC250NZ*
					8.2pF	±0.1pF	V8R2B0105HQC250NZ*
						±0.25pF	V8R2C0105HQC250NZ*
					9pF	±0.1pF	V9R0B0105HQC250NZ*
						±0.25pF	V9R0C0105HQC250NZ*
					10pF	±2%	V100G0105HQC250NZ*
						±5%	V100J0105HQC250NZ*
					12pF	±2%	V120G0105HQC250NZ*
						±5%	V120J0105HQC250NZ*
					15pF	±2%	V150G0105HQC250NZ*
						±5%	V150J0105HQC250NZ*
					18pF	±2%	V180G0105HQC250NZ*
						±5%	V180J0105HQC250NZ*
					20pF	±2%	V200G0105HQC250NZ*
						±5%	V200J0105HQC250NZ*
					22pF	±2%	V220G0105HQC250NZ*
						±5%	V220J0105HQC250NZ*
					24pF	±2%	V240G0105HQC250NZ*
						±5%	V240J0105HQC250NZ*
					27pF	±2%	V270G0105HQC250NZ*
						±5%	V270J0105HQC250NZ*
33pF	±2%	V330G0105HQC250NZ*					
	±5%	V330J0105HQC250NZ*					
0201	HQC	COG	50	0.33 (max)	0.1pF	±0.05pF	V0R1A0201HQC500NA*
						±0.1pF	V0R1B0201HQC500NA*
					0.2pF	±0.05pF	V0R2A0201HQC500NA*
						±0.1pF	V0R2B0201HQC500NA*
					0.3pF	±0.05pF	V0R3A0201HQC500NA*
						±0.1pF	V0R3B0201HQC500NA*

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness (mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0201	HQC	COG	50	0.33 (max)	0.4pF	±0.05pF	V0R4A0201HQC500NA*
						±0.1pF	V0R4B0201HQC500NA*
					0.5pF	±0.05pF	V0R5A0201HQC500NA*
						±0.1pF	V0R5B0201HQC500NA*
					0.6pF	±0.05pF	V0R6A0201HQC500NA*
						±0.1pF	V0R6B0201HQC500NA*
					0.7pF	±0.05pF	V0R7A0201HQC500NA*
						±0.1pF	V0R7B0201HQC500NA*
					0.75pF	±0.05pF	VR75A0201HQC500NA*
						±0.1pF	VR75B0201HQC500NA*
					0.8pF	±0.05pF	V0R8A0201HQC500NA*
						±0.1pF	V0R8B0201HQC500NA*
					0.9pF	±0.05pF	V0R9A0201HQC500NA*
						±0.1pF	V0R9B0201HQC500NA*
					1pF	±0.05pF	V1R0A0201HQC500NA*
						±0.1pF	V1R0B0201HQC500NA*
						±0.25pF	V1R0C0201HQC500NA*
					1.2pF	±0.05pF	V1R2A0201HQC500NA*
						±0.1pF	V1R2B0201HQC500NA*
						±0.25pF	V1R2C0201HQC500NA*
					1.3pF	±0.05pF	V1R3A0201HQC500NA*
						±0.1pF	V1R3B0201HQC500NA*
						±0.25pF	V1R3C0201HQC500NA*
					1.5pF	±0.05pF	V1R5A0201HQC500NA*
						±0.1pF	V1R5B0201HQC500NA*
						±0.25pF	V1R5C0201HQC500NA*
					1.8pF	±0.05pF	V1R8A0201HQC500NA*
						±0.1pF	V1R8B0201HQC500NA*
						±0.25pF	V1R8C0201HQC500NA*
					2pF	±0.05pF	V2R0A0201HQC500NA*
±0.1pF	V2R0B0201HQC500NA*						
±0.25pF	V2R0C0201HQC500NA*						
2.2pF	±0.05pF	V2R2A0201HQC500NA*					
	±0.1pF	V2R2B0201HQC500NA*					
	±0.25pF	V2R2C0201HQC500NA*					
2.4pF	±0.05pF	V2R4A0201HQC500NA*					
	±0.1pF	V2R4B0201HQC500NA*					
	±0.25pF	V2R4C0201HQC500NA*					

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0201	HQC	COG	50	0.33(max)	2.7pF	±0.05pF	V2R7A0201HQC500NA*
						±0.1pF	V2R7B0201HQC500NA*
						±0.25pF	V2R7C0201HQC500NA*
					3pF	±0.05pF	V3R0A0201HQC500NA*
						±0.1pF	V3R0B0201HQC500NA*
						±0.25pF	V3R0C0201HQC500NA*
					3.3pF	±0.05pF	V3R3A0201HQC500NA*
						±0.1pF	V3R3B0201HQC500NA*
						±0.25pF	V3R3C0201HQC500NA*
					3.6pF	±0.05pF	V3R6A0201HQC500NA*
						±0.1pF	V3R6B0201HQC500NA*
						±0.25pF	V3R6C0201HQC500NA*
					3.9pF	±0.05pF	V3R9A0201HQC500NA*
						±0.1pF	V3R9B0201HQC500NA*
						±0.25pF	V3R9C0201HQC500NA*
					4pF	±0.05pF	V4R0A0201HQC500NA*
						±0.1pF	V4R0B0201HQC500NA*
						±0.25pF	V4R0C0201HQC500NA*
					4.3pF	±0.05pF	V4R3A0201HQC500NA*
						±0.1pF	V4R3B0201HQC500NA*
						±0.25pF	V4R3C0201HQC500NA*
					4.7pF	±0.05pF	V4R7A0201HQC500NA*
						±0.1pF	V4R7B0201HQC500NA*
						±0.25pF	V4R7C0201HQC500NA*
					5pF	±0.05pF	V5R0A0201HQC500NA*
						±0.1pF	V5R0B0201HQC500NA*
						±0.25pF	V5R0C0201HQC500NA*
					5.6pF	±0.1pF	V5R6B0201HQC500NA*
						±0.25pF	V5R6C0201HQC500NA*
					6pF	±0.1pF	V6R0B0201HQC500NA*
						±0.25pF	V6R0C0201HQC500NA*
					6.2pF	±0.1pF	V6R2B0201HQC500NA*
						±0.25pF	V6R2C0201HQC500NA*
					6.8pF	±0.1pF	V6R8B0201HQC500NA*
						±0.25pF	V6R8C0201HQC500NA*
					7pF	±0.1pF	V7R0B0201HQC500NA*
±0.25pF	V7R0C0201HQC500NA*						

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0201	HQC	COG	50	0.33(max)	7.5pF	±0.1pF	V7R5B0201HQC500NA*
						±0.25pF	V7R5C0201HQC500NA*
					8pF	±0.1pF	V8R0B0201HQC500NA*
						±0.25pF	V8R0C0201HQC500NA*
					8.2pF	±0.1pF	V8R2B0201HQC500NA*
						±0.25pF	V8R2C0201HQC500NA*
					9pF	±0.1pF	V9R0B0201HQC500NA*
						±0.25pF	V9R0C0201HQC500NA*
					10pF	±2%	V10G0201HQC500NA*
						±5%	V10J0201HQC500NA*
					12pF	±2%	V12G0201HQC500NA*
						±5%	V12J0201HQC500NA*
					15pF	±2%	V15G0201HQC500NA*
						±5%	V15J0201HQC500NA*
					18pF	±2%	V18G0201HQC500NA*
						±5%	V18J0201HQC500NA*
					20pF	±2%	V20G0201HQC500NA*
						±5%	V20J0201HQC500NA*
22pF	±2%	V22G0201HQC500NA*					
	±5%	V22J0201HQC500NA*					
27pF	±2%	V27G0201HQC500NA*					
	±5%	V27J0201HQC500NA*					
33pF	±2%	V33G0201HQC500NA*					
	±5%	V33J0201HQC500NA*					
0402	HQC	COG	50	0.55(max)	0.1pF	±0.05pF	V0R1A0402HQC500NB*
						±0.1pF	V0R1B0402HQC500NB*
					0.2pF	±0.05pF	V0R2A0402HQC500NB*
						±0.1pF	V0R2B0402HQC500NB*
					0.3pF	±0.05pF	V0R3A0402HQC500NB*
						±0.1pF	V0R3B0402HQC500NB*
					0.4pF	±0.05pF	V0R4A0402HQC500NB*
						±0.1pF	V0R4B0402HQC500NB*
					0.5pF	±0.05pF	V0R5A0402HQC500NB*
						±0.1pF	V0R5B0402HQC500NB*
					0.6pF	±0.05pF	V0R6A0402HQC500NB*
						±0.1pF	V0R6B0402HQC500NB*
0.7pF	±0.05pF	V0R7A0402HQC500NB*					
	±0.1pF	V0R7B0402HQC500NB*					

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0402	HQC	COG	50	0.55 (max)	0.75pF	±0.05pF	VR75A0402HQC500NB*
						±0.1pF	VR75B0402HQC500NB*
					0.8pF	±0.05pF	V0R8A0402HQC500NB*
						±0.1pF	V0R8B0402HQC500NB*
					0.9pF	±0.05pF	V0R9A0402HQC500NB*
						±0.1pF	V0R9B0402HQC500NB*
					1pF	±0.05pF	V1R0A0402HQC500NB*
						±0.1pF	V1R0B0402HQC500NB*
						±0.25pF	V1R0C0402HQC500NB*
					1.2pF	±0.05pF	V1R2A0402HQC500NB*
						±0.1pF	V1R2B0402HQC500NB*
						±0.25pF	V1R2C0402HQC500NB*
					1.3pF	±0.05pF	V1R3A0402HQC500NB*
						±0.1pF	V1R3B0402HQC500NB*
						±0.25pF	V1R3C0402HQC500NB*
					1.5pF	±0.05pF	V1R5A0402HQC500NB*
						±0.1pF	V1R5B0402HQC500NB*
						±0.25pF	V1R5C0402HQC500NB*
					1.8pF	±0.05pF	V1R8A0402HQC500NB*
						±0.1pF	V1R8B0402HQC500NB*
						±0.25pF	V1R8C0402HQC500NB*
					2pF	±0.05pF	V2R0A0402HQC500NB*
						±0.1pF	V2R0B0402HQC500NB*
						±0.25pF	V2R0C0402HQC500NB*
					2.2pF	±0.05pF	V2R2A0402HQC500NB*
						±0.1pF	V2R2B0402HQC500NB*
						±0.25pF	V2R2C0402HQC500NB*
					2.4pF	±0.05pF	V2R4A0402HQC500NB*
						±0.1pF	V2R4B0402HQC500NB*
						±0.25pF	V2R4C0402HQC500NB*
					2.7pF	±0.05pF	V2R7A0402HQC500NB*
						±0.1pF	V2R7B0402HQC500NB*
						±0.25pF	V2R7C0402HQC500NB*
					3pF	±0.05pF	V3R0A0402HQC500NB*
						±0.1pF	V3R0B0402HQC500NB*
						±0.25pF	V3R0C0402HQC500NB*

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0402	HQC	COG	50	0.55 (max)	3.3pF	±0.05pF	V3R3A0402HQC500NB*
						±0.1pF	V3R3B0402HQC500NB*
						±0.25pF	V3R3C0402HQC500NB*
					3.6pF	±0.05pF	V3R6A0402HQC500NB*
						±0.1pF	V3R6B0402HQC500NB*
						±0.25pF	V3R6C0402HQC500NB*
					3.9pF	±0.05pF	V3R9A0402HQC500NB*
						±0.1pF	V3R9B0402HQC500NB*
						±0.25pF	V3R9C0402HQC500NB*
					4pF	±0.05pF	V4R0A0402HQC500NB*
						±0.1pF	V4R0B0402HQC500NB*
						±0.25pF	V4R0C0402HQC500NB*
					4.3pF	±0.05pF	V4R3A0402HQC500NB*
						±0.1pF	V4R3B0402HQC500NB*
						±0.25pF	V4R3C0402HQC500NB*
					4.7pF	±0.05pF	V4R7A0402HQC500NB*
						±0.1pF	V4R7B0402HQC500NB*
						±0.25pF	V4R7C0402HQC500NB*
					5pF	±0.05pF	V5R0A0402HQC500NB*
						±0.1pF	V5R0B0402HQC500NB*
						±0.25pF	V5R0C0402HQC500NB*
					5.6pF	±0.1pF	V5R6B0402HQC500NB*
						±0.25pF	V5R6C0402HQC500NB*
					6pF	±0.1pF	V6R0B0402HQC500NB*
						±0.25pF	V6R0C0402HQC500NB*
					6.2pF	±0.1pF	V6R2B0402HQC500NB*
						±0.25pF	V6R2C0402HQC500NB*
					6.8pF	±0.1pF	V6R8B0402HQC500NB*
						±0.25pF	V6R8C0402HQC500NB*
					7pF	±0.1pF	V7R0B0402HQC500NB*
						±0.25pF	V7R0C0402HQC500NB*
					7.5pF	±0.1pF	V7R5B0402HQC500NB*
						±0.25pF	V7R5C0402HQC500NB*
					8pF	±0.1pF	V8R0B0402HQC500NB*
						±0.25pF	V8R0C0402HQC500NB*
					8.2pF	±0.1pF	V8R2B0402HQC500NB*
±0.25pF	V8R2C0402HQC500NB*						

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0402	HQC	COG	50	0.55 (max)	9pF	±0.1pF	V9R0B0402HQC500NB*
						±0.25pF	V9R0C0402HQC500NB*
					10pF	±2%	V100G0402HQC500NB*
						±5%	V100J0402HQC500NB*
					12pF	±2%	V120G0402HQC500NB*
						±5%	V120J0402HQC500NB*
					15pF	±2%	V150G0402HQC500NB*
						±5%	V150J0402HQC500NB*
					18pF	±2%	V180G0402HQC500NB*
						±5%	V180J0402HQC500NB*
					20pF	±2%	V200G0402HQC500NB*
						±5%	V200J0402HQC500NB*
22pF	±2%	V220G0402HQC500NB*					
	±5%	V220J0402HQC500NB*					
27pF	±2%	V270G0402HQC500NB*					
	±5%	V270J0402HQC500NB*					
33pF	±2%	V330G0402HQC500NB*					
	±5%	V330J0402HQC500NB*					

高介电常数型片式多层陶瓷电容器系列 X5R *High Dielectric MLCC (X5R)*

温度特性 T.C. Code	微容系列代码 VIIYONG Type Code	尺寸范围(EIA) Size	额定电压范围 Rated Voltage	静电容量范围 Capacitance
X5R	X5R	01005~1206	4~50Vdc	1.5nF~100μF

X5R特点 *Characteristics*

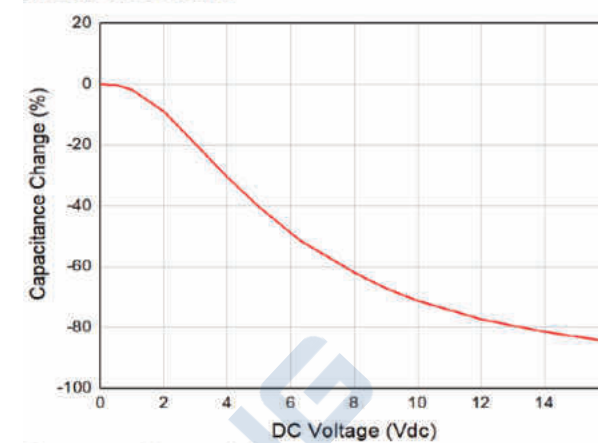
高容值与高可靠性并存
High capacitance and high reliability coexist

X5R应用领域 *Application Field*

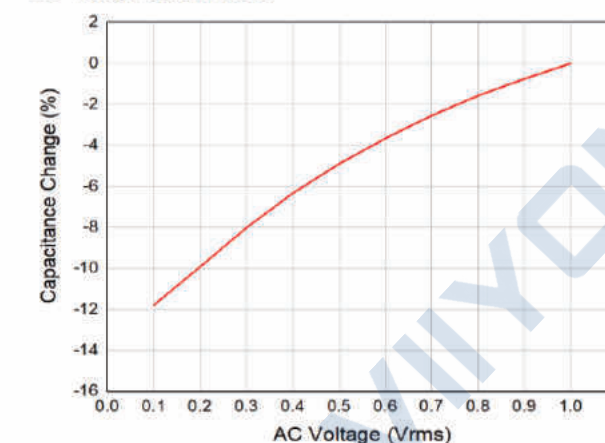
笔记本电脑、电源模块、LCD TV、数码相机、移动通信产品等
Laptops, power modules, LCD TVs, digital cameras, mobile communication products, etc.

X5R高频特性 *High Frequency Characteristics*

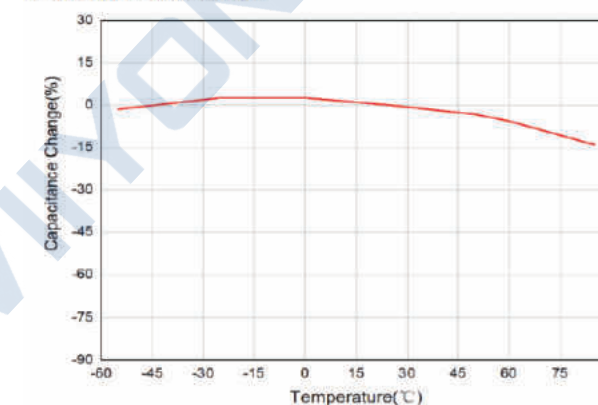
DC Bias Characteristics



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.

规格型号及品名 Product Range and Part Number

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
01005	X5R	X5R	16	0.22(max)	1.5nF	±10%	V152K0105X5R160NZ*
						±20%	V152M0105X5R160NZ*
					1.8nF	±10%	V182K0105X5R160NZ*
						±20%	V182M0105X5R160NZ*
					2.2nF	±10%	V222K0105X5R160NZ*
						±20%	V222M0105X5R160NZ*
					2.7nF	±10%	V272K0105X5R160NZ*
						±20%	V272M0105X5R160NZ*
					3.3nF	±10%	V332K0105X5R160NZ*
						±20%	V332M0105X5R160NZ*
					4.7nF	±10%	V472K0105X5R160NZ*
						±20%	V472M0105X5R160NZ*
					5.6nF	±10%	V562K0105X5R160NZ*
						±20%	V562M0105X5R160NZ*
					6.8nF	±10%	V682K0105X5R160NZ*
						±20%	V682M0105X5R160NZ*
					10nF	±10%	V103K0105X5R160NZ*
						±20%	V103M0105X5R160NZ*
			12nF	±10%	V123K0105X5R100NZ*		
				±20%	V123M0105X5R100NZ*		
			15nF	±10%	V153K0105X5R100NZ*		
				±20%	V153M0105X5R100NZ*		
			18nF	±10%	V183K0105X5R100NZ*		
				±20%	V183M0105X5R100NZ*		
			22nF	±10%	V223K0105X5R100NZ*		
				±20%	V223M0105X5R100NZ*		
			27nF	±10%	V273K0105X5R100NZ*		
				±20%	V273M0105X5R100NZ*		
			33nF	±10%	V333K0105X5R100NZ*		
				±20%	V333M0105X5R100NZ*		
			47nF	±10%	V473K0105X5R100NZ*		
				±20%	V473M0105X5R100NZ*		
			6.3	0.22(max)	27nF	±10%	V273K0105X5R6R3NZ*
						±20%	V273M0105X5R6R3NZ*
					33nF	±10%	V333K0105X5R6R3NZ*
						±20%	V333M0105X5R6R3NZ*
47nF	±10%	V473K0105X5R6R3NZ*					
	±20%	V473M0105X5R6R3NZ*					

规格型号及品名 Product Range and Part Number

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
01005	X5R	X5R	6.3	0.22(max)	56nF	±10%	V563K0105X5R6R3NZ*
						±20%	V563M0105X5R6R3NZ*
					68nF	±10%	V683K0105X5R6R3NZ*
						±20%	V683M0105X5R6R3NZ*
					82nF	±10%	V823K0105X5R6R3NZ*
						±20%	V823M0105X5R6R3NZ*
			100nF	±10%	V104K0105X5R6R3NZ*		
				±20%	V104M0105X5R6R3NZ*		
			4	0.22(max)	100nF	±10%	V104K0105X5R4R0NZ*
						±20%	V104M0105X5R4R0NZ*
					220nF	±10%	V224K0105X5R4R0NZ*
						±20%	V224M0105X5R4R0NZ*
100nF	±10%	V104K0201X5R350NX*					
	±20%	V104M0201X5R350NX*					
0201	X5R	X5R	35	0.4(max)	1.5nF	±10%	V152K0201X5R250NA*
						±20%	V152M0201X5R250NA*
					1.8nF	±10%	V182K0201X5R250NA*
						±20%	V182M0201X5R250NA*
					2.2nF	±10%	V222K0201X5R250NA*
						±20%	V222M0201X5R250NA*
					3.3nF	±10%	V332K0201X5R250NA*
						±20%	V332M0201X5R250NA*
					3.9nF	±10%	V392K0201X5R250NA*
						±20%	V392M0201X5R250NA*
					4.7nF	±10%	V472K0201X5R250NA*
						±20%	V472M0201X5R250NA*
			5.6nF	±10%	V562K0201X5R250NA*		
				±20%	V562M0201X5R250NA*		
			6.8nF	±10%	V682K0201X5R250NA*		
				±20%	V682M0201X5R250NA*		
			10nF	±10%	V103K0201X5R250NA*		
				±20%	V103M0201X5R250NA*		
			12nF	±10%	V123K0201X5R250NA*		
				±20%	V123M0201X5R250NA*		
			0.35(max)	0.4(max)	100nF	±10%	V104K0201X5R250NJ*
						±20%	V104M0201X5R250NJ*
					224nF	±10%	V224K0201X5R250NX*
						±20%	V224M0201X5R250NX*

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代 码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number		
0201	X5R	X5R	16	0.33(max)	15nF	±10%	V153K0201X5R160NA*		
						±20%	V153M0201X5R160NA*		
					18nF	±10%	V183K0201X5R160NA*		
						±20%	V183M0201X5R160NA*		
					22nF	±10%	V223K0201X5R160NA*		
						±20%	V223M0201X5R160NA*		
					27nF	±10%	V273K0201X5R160NA*		
						±20%	V273M0201X5R160NA*		
					33nF	±10%	V333K0201X5R160NA*		
						±20%	V333M0201X5R160NA*		
					47nF	±10%	V473K0201X5R160NA*		
						±20%	V473M0201X5R160NA*		
					56nF	±10%	V563K0201X5R160NA*		
						±20%	V563M0201X5R160NA*		
					100nF	±10%	V104K0201X5R160NA*		
						±20%	V104M0201X5R160NA*		
						0.35(max)	224nF	±10%	V224K0201X5R160NJ*
								±20%	V224M0201X5R160NJ*
				10	0.33(max)	68nF	±10%	V683K0201X5R100NA*	
							±20%	V683M0201X5R100NA*	
						82nF	±10%	V823K0201X5R100NA*	
							±20%	V823M0201X5R100NA*	
						100nF	±10%	V104K0201X5R100NA*	
							±20%	V104M0201X5R100NA*	
					0.35(max)	224nF	±10%	V224K0201X5R100NJ*	
							±20%	V224M0201X5R100NJ*	
				0.4(max)	474nF	±10%	V474K0201X5R100NX*		
						±20%	V474M0201X5R100NX*		
					1 μF	±20%	V105M0201X5R100NX*		
				6.3	0.33(max)	100nF	±10%	V104K0201X5R6R3NA*	
							±20%	V104M0201X5R6R3NA*	
					0.35(max)	224nF	±10%	V224K0201X5R6R3NJ*	
							±20%	V224M0201X5R6R3NJ*	
						474nF	±10%	V474K0201X5R6R3NJ*	
							±20%	V474M0201X5R6R3NJ*	
				0.4(max)	1 μF	±10%	V105K0201X5R6R3NX*		
		±20%	V105M0201X5R6R3NX*						
			2.2 μF	±20%	V225M0201X5R6R3NX*				

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代 码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number	
0402	X5R	X5R	50	0.55(max)	12nF	±10%	V123K0402X5R500NB*	
						±20%	V123M0402X5R500NB*	
					15nF	±10%	V153K0402X5R500NB*	
						±20%	V153M0402X5R500NB*	
					18nF	±10%	V183K0402X5R500NB*	
						±20%	V183M0402X5R500NB*	
					0.6(max)	22nF	±10%	V223K0402X5R500NB*
							±20%	V223M0402X5R500NB*
				27nF		±10%	V273K0402X5R500NB*	
						±20%	V273M0402X5R500NB*	
					0.7(max)	47nF	±10%	V473K0402X5R500NB*
							±20%	V473M0402X5R500NB*
				35	0.7(max)	100nF	±10%	V104K0402X5R500NC*
							±20%	V104M0402X5R500NC*
					0.55(max)	100nF	±10%	V104K0402X5R350NB*
							±20%	V104M0402X5R350NB*
					0.7(max)	1 μF	±10%	V105K0402X5R350NC*
							±20%	V105M0402X5R350NC*
				25	0.55(max)	22nF	±10%	V223K0402X5R250NB*
							±20%	V223M0402X5R250NB*
						27nF	±10%	V273K0402X5R250NB*
							±20%	V273M0402X5R250NB*
						33nF	±10%	V333K0402X5R250NB*
							±20%	V333M0402X5R250NB*
	47nF	±10%	V473K0402X5R250NB*					
		±20%	V473M0402X5R250NB*					
	56nF	±10%	V563K0402X5R250NB*					
		±20%	V563M0402X5R250NB*					
	68nF	±10%	V683K0402X5R250NB*					
		±20%	V683M0402X5R250NB*					
	0.6(max)	82nF	±10%	V823K0402X5R250NB*				
			±20%	V823M0402X5R250NB*				
		100nF	±10%	V104K0402X5R250NB*				
			±20%	V104M0402X5R250NB*				
		220nF	±10%	V224K0402X5R250NB*				
			±20%	V224M0402X5R250NB*				
		470nF	±10%	V474K0402X5R250NB*				
			±20%	V474M0402X5R250NB*				

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number		
0402	X5R	X5R	25	0.55(max)	68nF	±10%	V683K0402X5R250NB*		
						±20%	V683M0402X5R250NB*		
					82nF	±10%	V823K0402X5R250NB*		
						±20%	V823M0402X5R250NB*		
					100nF	±10%	V104K0402X5R250NB*		
						±20%	V104M0402X5R250NB*		
				0.6(max)	220nF	±10%	V224K0402X5R250NN*		
						±20%	V224M0402X5R250NN*		
					470nF	±10%	V474K0402X5R250NN*		
						±20%	V474M0402X5R250NN*		
					1μF	±10%	V105K0402X5R250NB*		
						±20%	V105M0402X5R250NB*		
				0.70(max)	2.2μF	±10%	V225K0402X5R250NC*		
						±20%	V225M0402X5R250NC*		
					16	0.55(max)	100nF	±10%	V104K0402X5R160NB*
								±20%	V104M0402X5R160NB*
							220nF	±10%	V224K0402X5R160NN*
							±20%	V224M0402X5R160NN*	
			0.6(max)	470nF		±10%	V474K0402X5R160NN*		
						±20%	V474M0402X5R160NN*		
			10	0.55(max)	1μF	±10%	V105K0402X5R160NB*		
						±20%	V105M0402X5R160NB*		
					2.2μF	±10%	V225K0402X5R160NN*		
					±20%	V225M0402X5R160NN*			
				0.70(max)	4.7μF	±10%	V475K0402X5R160NC*		
						±20%	V475M0402X5R160NC*		
			10μF		±10%	V106K0402X5R100NC*			
				±20%	V106M0402X5R100NC*				
			6.3	0.55(max)	1μF	±10%	V105K0402X5R6R3NB*		
						±20%	V105M0402X5R6R3NB*		
					2.2μF	±10%	V225K0402X5R6R3NB*		
					±20%	V225M0402X5R6R3NB*			

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number			
0402	X5R	X5R	6.3	0.70(max)	4.7μF	±10%	V475K0402X5R6R3NC*			
						±20%	V475M0402X5R6R3NC*			
					10μF	±10%	V106K0402X5R6R3NC*			
						±20%	V106M0402X5R6R3NC*			
					22μF	±10%	V106K0402X5R4R0NC*			
						±20%	V106M0402X5R4R0NC*			
			0603	X5R	X5R	50	0.9(max)	1.0μF	±10%	V105K0603X5R500ND*
									±20%	V105M0603X5R500ND*
								2.2μF	±10%	V225K0603X5R500NK*
								±20%	V225M0603X5R500NK*	
							1.0(max)	1.0μF	±10%	V105K0603X5R350ND*
									±20%	V105M0603X5R350ND*
2.2μF	±10%	V225K0603X5R350NK*								
	±20%	V225M0603X5R350NK*								
35	0.9(max)	1.0μF				±10%	V105K0603X5R350ND*			
						±20%	V105M0603X5R350ND*			
		2.2μF				±10%	V225K0603X5R350NK*			
		±20%				V225M0603X5R350NK*				
	1.0(max)	4.7μF				±10%	V475K0603X5R350NK*			
						±20%	V475M0603X5R350NK*			
10μF		±10%				V106K0603X5R250NK*				
	±20%	V106M0603X5R250NK*								
25	X5R	X5R				25	0.9(max)	1.0μF	±10%	V105K0603X5R250ND*
									±20%	V105M0603X5R250ND*
			2.2μF	±10%	V225K0603X5R250ND*					
				±20%	V225M0603X5R250ND*					
			1.0(max)	4.7μF	±10%		V475K0603X5R250NK*			
					±20%		V475M0603X5R250NK*			
				10μF	±10%	V106K0603X5R250NK*				
				±20%	V106M0603X5R250NK*					
			16	0.9(max)	2.2μF	±10%	V225K0603X5R160ND*			
						±20%	V225M0603X5R160ND*			
					4.7μF	±10%	V475K0603X5R160NK*			
					±20%	V475M0603X5R160NK*				
1.0(max)	10μF	±10%		V106K0603X5R160NK*						
		±20%		V106M0603X5R160NK*						
	2.2μF	±10%	V225K0603X5R100ND*							
	±20%	V225M0603X5R100ND*								
10	0.9(max)	4.7μF	±10%	V475K0603X5R100NK*						
			±20%	V475M0603X5R100NK*						
		10μF	±10%	V106K0603X5R100NK*						
		±20%	V106M0603X5R100NK*							
	1.05(max)	22μF	±10%	V226K0603X5R100N4*						
			±20%	V226M0603X5R100N4*						
4.7μF		±10%	V475K0603X5R6R3ND*							
	±20%	V475M0603X5R6R3ND*								

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0603	X5R	X5R	6.3	1.0(max)	10 μF	±10%	V106K0603X5R6R3NK*
						±20%	V106M0603X5R6R3NK*
					22 μF	±10%	V226K0603X5R6R3NK*
						±20%	V226M0603X5R6R3NK*
					10 μF	±10%	V106K0603X5R4R0NK*
						±20%	V106M0603X5R4R0NK*
			22 μF	±10%	V226K0603X5R4R0NK*		
				±20%	V226M0603X5R4R0NK*		
			4	1.0(max)	47 μF	±10%	V476K0603X5R4R0NK*
						±20%	V476M0603X5R4R0NK*
					10 μF	±10%	V106M0805X5R500NH*
						±20%	V475M0805X5R250NY*
4.7 μF	±20%	V475M0805X5R250NH*					
	±20%	V106M0805X5R250NY*					
25	1.45(max)	10 μF	±20%	V106M0805X5R250NH*			
			±20%	V226M0805X5R250NH*			
		22 μF	±20%	V475M0805X5R160NY*			
			±20%	V475M0805X5R160NH*			
16	1.45(max)	4.7 μF	±20%	V106M0805X5R160NY*			
			±20%	V106M0805X5R160NH*			
		10 μF	±20%	V106M0805X5R100NY*			
			±20%	V106M0805X5R100NH*			
0805	X5R	X5R	10	1.0(max)	±20%	V226M0805X5R100NY*	
					±20%	V226M0805X5R100NH*	
				22 μF	±20%	V476M0805X5R100NH*	
					±20%	V106M0805X5R6R3NY*	
			6.3	1.45(max)	10 μF	±20%	V106M0805X5R6R3NH*
						±20%	V226M0805X5R6R3NY*
				22 μF	±20%	V226M0805X5R6R3NH*	
					±20%	V476M0805X5R6R3NH*	

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
1206	X5R	X5R	50	1.0(max)	4.7 μF	±20%	V475M1206X5R500NY*
				1.8(max)	10 μF	±20%	V106M1206X5R500NL*
			35	1.0(max)	2.2 μF	±20%	V225M1206X5R350NY*
					4.7 μF	±20%	V475M1206X5R350NY*
			25	1.8(max)	4.7 μF	±20%	V475M1206X5R250NL*
					10 μF	±20%	V106M1206X5R250NL*
					22 μF	±20%	V226M1206X5R250NL*
			16	1.0(max)	10 μF	±20%	V106M1206X5R160NY*
						±20%	V106M1206X5R160NL*
					22 μF	±20%	V226M1206X5R160NY*
						±20%	V226M1206X5R160NL*
			10	1.35(max)	22 μF	±20%	V226M1206X5R100NO*
						±20%	V226M1206X5R100NL*
				1.8(max)	47 μF	±20%	V476M1206X5R100NL*
						±20%	V226M1206X5R6R3NO*
			6.3	1.35(max)	22 μF	±20%	V226M1206X5R6R3NL*
						±20%	V476M1206X5R6R3NO*
				1.35(max)	47 μF	±20%	V476M1206X5R6R3NL*
						±20%	V107M1206X5R6R3NL*

高介电常数型片式多层陶瓷电容器系列 X7R High Dielectric MLCC (X7R)

温度特性 T.C. Code	微容系列代码 VIIYONG Type Code	尺寸范围(EIA) Size	额定电压范围 Rated Voltage	静电容量范围 Capacitance
X7R	X7R	01005~0402	16~50Vdc	100pF~100nF

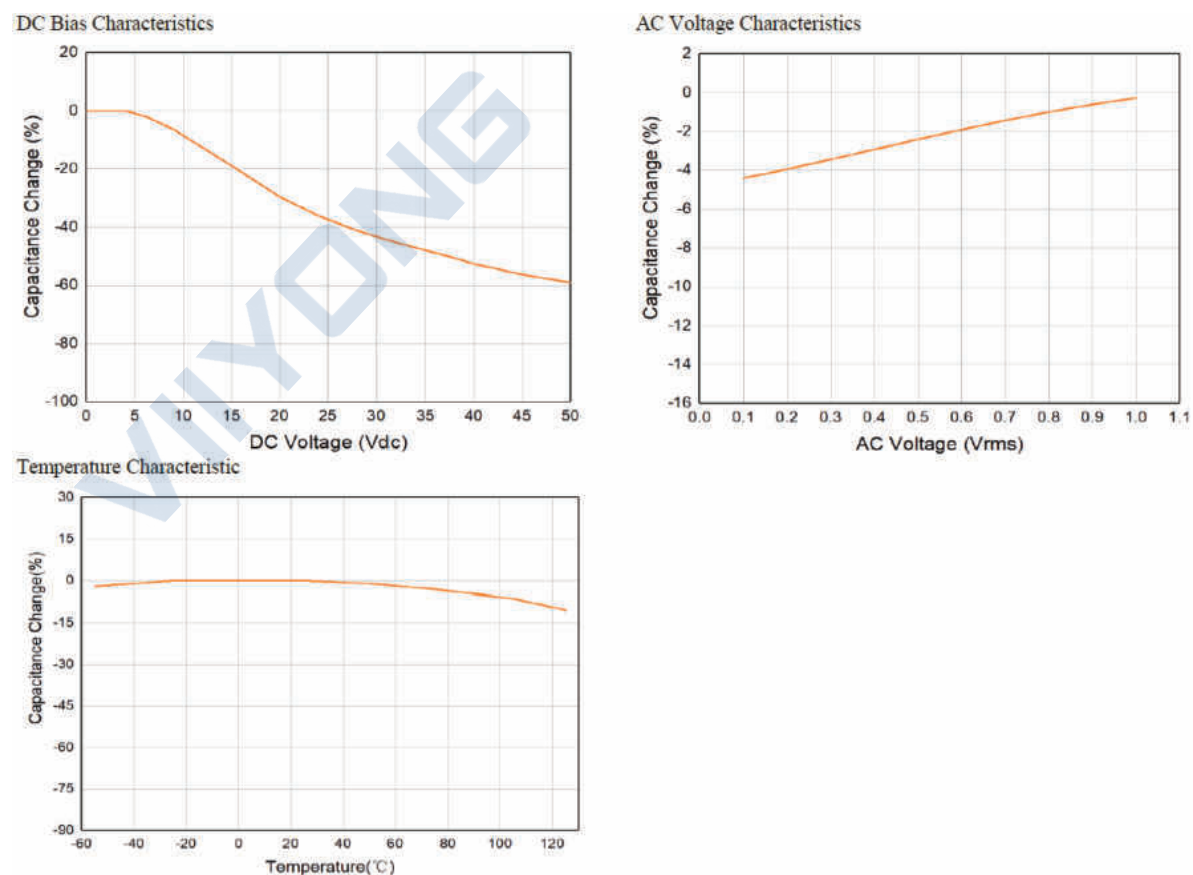
X7R特点 Characteristics

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特曲线 Characteristics Curve



注:上图为X7R, 1nF的部分特性。

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

规格型号及品名 Product Range and Part Number

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 Ur(Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number				
01005	X7R	X7R	25	0.22(max)	100pF	± 10%	V101K0105X7R250NZ*				
						± 20%	V101M0105X7R250NZ*				
					120pF	± 10%	V121K0105X7R250NZ*				
						± 20%	V121M0105X7R250NZ*				
					150pF	± 10%	V151K0105X7R250NZ*				
						± 20%	V151M0105X7R250NZ*				
					180pF	± 10%	V181K0105X7R250NZ*				
						± 20%	V181M0105X7R250NZ*				
					200pF	± 10%	V201K0105X7R250NZ*				
					± 20%	V201M0105X7R250NZ*					
			220pF		± 10%	V221K0105X7R250NZ*					
					± 20%	V221M0105X7R250NZ*					
			270pF		± 10%	V271K0105X7R250NZ*					
					± 20%	V271M0105X7R250NZ*					
			330pF		± 10%	V331K0105X7R250NZ*					
					± 20%	V331M0105X7R250NZ*					
			0201		X7R	X7R	16	0.33(max)	470pF	± 10%	V471K0105X7R250NZ*
										± 20%	V471M0105X7R250NZ*
560pF	± 10%	V561K0105X7R160NZ*									
	± 20%	V561M0105X7R160NZ*									
680pF	± 10%	V681K0105X7R160NZ*									
	± 20%	V681M0105X7R160NZ*									
820pF	± 10%	V821K0105X7R160NZ*									
	± 20%	V821M0105X7R160NZ*									
1.0nF	± 10%	V102K0105X7R160NZ*									
	± 20%	V102M0105X7R160NZ*									
150pF				50			0.33(max)		± 10%	V151K0201X7R500NA*	
									± 20%	V151M0201X7R500NA*	
			180pF		± 10%	V181K0201X7R500NA*					
					± 20%	V181M0201X7R500NA*					
			220pF		± 10%	V221K0201X7R500NA*					
					± 20%	V221M0201X7R500NA*					
270pF	± 10%	V271K0201X7R500NA*									
	± 20%	V271M0201X7R500NA*									
330pF	± 10%	V331K0201X7R500NA*									
	± 20%	V331M0201X7R500NA*									

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0201	X7R	X7R	50	0.33(max)	470pF	± 10%	V471K0201X7R500NA*
						± 20%	V471M0201X7R500NA*
					560pF	± 10%	V561K0201X7R500NA*
						± 20%	V561M0201X7R500NA*
					680pF	± 10%	V681K0201X7R500NA*
						± 20%	V681M0201X7R500NA*
					820pF	± 10%	V821K0201X7R500NA*
						± 20%	V821M0201X7R500NA*
					1.0nF	± 10%	V102K0201X7R500NA*
						± 20%	V102M0201X7R500NA*
					1nF	± 10%	V102K0201X7R500NA*
						± 20%	V102M0201X7R500NA*
			1.2nF		± 10%	V122K0201X7R250NA*	
					± 20%	V122M0201X7R250NA*	
			1.5nF		± 10%	V152K0201X7R250NA*	
					± 20%	V152M0201X7R250NA*	
			1.8nF		± 10%	V182K0201X7R250NA*	
					± 20%	V182M0201X7R250NA*	
			2.2nF		± 10%	V222K0201X7R250NA*	
					± 20%	V222M0201X7R250NA*	
			2.7nF		± 10%	V272K0201X7R250NA*	
					± 20%	V272M0201X7R250NA*	
			3.3nF		± 10%	V332K0201X7R250NA*	
					± 20%	V332M0201X7R250NA*	
4.7nF	± 10%	V472K0201X7R250NA*					
	± 20%	V472M0201X7R250NA*					
5.6nF	± 10%	V562K0201X7R250NA*					
	± 20%	V562M0201X7R250NA*					
6.8nF	± 10%	V682K0201X7R250NA*					
	± 20%	V682M0201X7R250NA*					
10nF	± 10%	V103K0201X7R250NA*					
	± 20%	V103M0201X7R250NA*					
0402	X7R	X7R	50	0.55(max)	1.2nF	± 10%	V122K0402X7R500NB*
						± 20%	V122M0402X7R500NB*
					1.5nF	± 10%	V152K0402X7R500NB*
						± 20%	V152M0402X7R500NB*
					1.8nF	± 10%	V182K0402X7R500NB*
						± 20%	V182M0402X7R500NB*

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0402	X7R	X7R	50	0.55(max)	2.2nF	± 10%	V222K0402X7R500NB*
						± 20%	V222M0402X7R500NB*
					2.7nF	± 10%	V272K0402X7R500NB*
						± 20%	V272M0402X7R500NB*
					3.3nF	± 10%	V332K0402X7R500NB*
						± 20%	V332M0402X7R500NB*
					3.9nF	± 10%	V392K0402X7R500NB*
						± 20%	V392M0402X7R500NB*
					4.7nF	± 10%	V472K0402X7R500NB*
						± 20%	V472M0402X7R500NB*
					6.8nF	± 10%	V682K0402X7R500NB*
						± 20%	V682M0402X7R500NB*
			10nF	± 10%	V103K0402X7R500NB*		
				± 20%	V103M0402X7R500NB*		
			12nF	± 10%	V123K0402X7R500NB*		
				± 20%	V123M0402X7R500NB*		
			15nF	± 10%	V153K0402X7R500NB*		
				± 20%	V153M0402X7R500NB*		
			22nF	± 10%	V223K0402X7R500NB*		
				± 20%	V223M0402X7R500NB*		
			27nF	± 10%	V273K0402X7R500NB*		
				± 20%	V273M0402X7R500NB*		
			33nF	± 10%	V333K0402X7R500NB*		
				± 20%	V333M0402X7R500NB*		
47nF	± 10%	V473K0402X7R500NB*					
	± 20%	V473M0402X7R500NB*					
25	X7R	X7R	25	0.55(max)	100nF	± 10%	V104K0402X7R500NC*
						± 20%	V104M0402X7R500NC*
					22nF	± 10%	V223K0402X7R250NB*
						± 20%	V223M0402X7R250NB*
					27nF	± 10%	V273K0402X7R250NB*
						± 20%	V273M0402X7R250NB*
33nF	± 10%	V333K0402X7R250NB*					
	± 20%	V333M0402X7R250NB*					
47nF	± 10%	V473K0402X7R250NB*					
	± 20%	V473M0402X7R250NB*					
56nF	± 10%	V563K0402X7R250NB*					
	± 20%	V563M0402X7R250NB*					

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0402	X7R	X7R	25	0.55(max)	68nF	± 10%	V683K0402X7R250NB*
						± 20%	V683M0402X7R250NB*
					100nF	± 10%	V104K0402X7R250NB*
						± 20%	V104M0402X7R250NB*

高温型片式多层陶瓷电容器系列 X6S *High Temperature MLCC (X6S)*

温度特性 T.C. Code	微容系列代码 VIIYONG Type Code	尺寸范围(EIA) Size	额定电压范围 Rated Voltage	静电容量范围 Capacitance
X6S	X6S	0201~0805	4~50Vdc	12nF~47μF

X6S特点 **Characteristics**

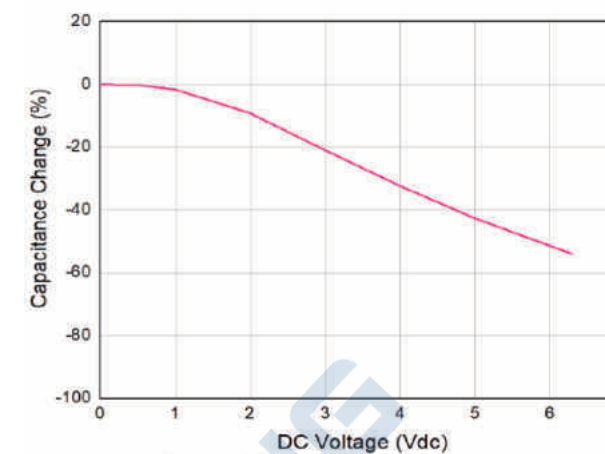
高容值 High capacitance
最高工作温度可达105°C The maximum working temperature can reach 105 °C

X6S应用领域 **Application Field**

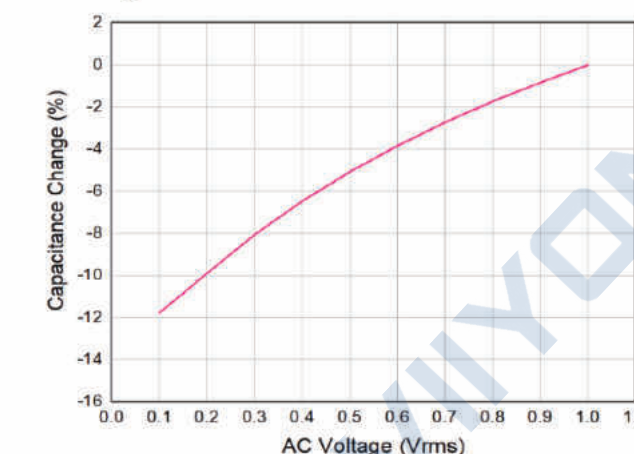
CPU、芯片外围、户外安防摄像头等高温工作电路
High-temperature working circuit such as CPU, Chip periphery and outdoor security camera etc.

X6S特曲线 **Characteristics Curve**

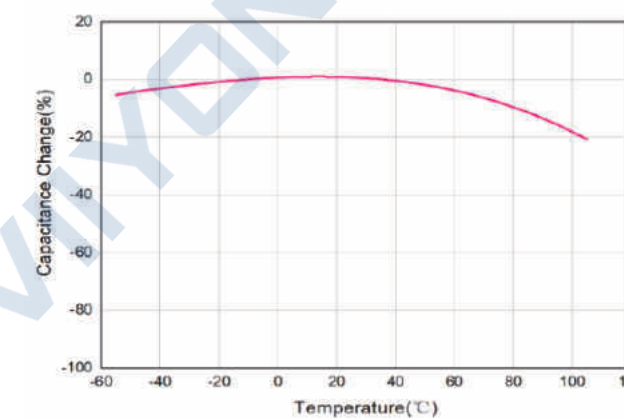
DC Bias Characteristics



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.

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0201	X6S	X6S	16	0.35(max)	100nF	± 10%	V104K0201X6S160NJ*
						± 20%	V104M0201X6S160NJ*
					12nF	± 10%	V123K0201X6S100NA*
						± 20%	V123M0201X6S100NA*
					15nF	± 10%	V153K0201X6S100NA*
						± 20%	V153M0201X6S100NA*
			18nF	± 10%	V183K0201X6S100NA*		
				± 20%	V183M0201X6S100NA*		
			22nF	± 10%	V223K0201X6S100NA*		
				± 20%	V223M0201X6S100NA*		
			27nF	± 10%	V273K0201X6S100NA*		
				± 20%	V273M0201X6S100NA*		
			33nF	± 10%	V333K0201X6S100NA*		
				± 20%	V333M0201X6S100NA*		
			47nF	± 10%	V473K0201X6S100NA*		
				± 20%	V473M0201X6S100NA*		
			56nF	± 10%	V563K0201X6S100NA*		
				± 20%	V563M0201X6S100NA*		
			100nF	± 10%	V104K0201X6S100NA*		
				± 20%	V104M0201X6S100NA*		
			0.35(max)	220nF	± 10%	V224K0201X6S100NJ*	
					± 20%	V224M0201X6S100NJ*	
			6.3	0.33(max)	12nF	± 10%	V123K0201X6S6R3NA*
						± 20%	V123M0201X6S6R3NA*
					15nF	± 10%	V153K0201X6S6R3NA*
						± 20%	V153M0201X6S6R3NA*
					18nF	± 10%	V183K0201X6S6R3NA*
						± 20%	V183M0201X6S6R3NA*
					22nF	± 10%	V223K0201X6S6R3NA*
						± 20%	V223M0201X6S6R3NA*
27nF	± 10%	V273K0201X6S6R3NA*					
	± 20%	V273M0201X6S6R3NA*					

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0201	X6S	X6S	6.3	0.33(max)	33nF	± 10%	V333K0201X6S6R3NA*
						± 20%	V333M0201X6S6R3NA*
					47nF	± 10%	V473K0201X6S6R3NA*
						± 20%	V473M0201X6S6R3NA*
					56nF	± 10%	V563K0201X6S6R3NA*
						± 20%	V563M0201X6S6R3NA*
				100nF	± 10%	V104K0201X6S6R3NA*	
					± 20%	V104M0201X6S6R3NA*	
				0.35(max)	220nF	± 10%	V224K0201X6S6R3NJ*
						± 20%	V224M0201X6S6R3NJ*
				0.4(max)	470nF	± 10%	V474K0201X6S6R3NX*
						± 20%	V474M0201X6S6R3NX*
			1.0 μ F	100nF	± 10%	V105K0201X6S6R3NX*	
					± 20%	V105M0201X6S6R3NX*	
			4	0.33(max)	100nF	± 10%	V104K0201X6S4R0NA*
						± 20%	V104M0201X6S4R0NA*
					220nF	± 10%	V224K0201X6S4R0NJ*
						± 20%	V224M0201X6S4R0NJ*
470nF	± 10%	V474K0201X6S4R0NJ*					
	± 20%	V474M0201X6S4R0NJ*					
1.0 μ F	± 10%	V105K0201X6S4R0NX*					
	± 20%	V105M0201X6S4R0NX*					
0402	X6S	X6S	50	0.70(max)	100nF	± 10%	V104K0402X6S500NC*
						± 20%	V104M0402X6S500NC*
					100nF	± 10%	V104K0402X6S350NC*
						± 20%	V104M0402X6S350NC*
					100nF	± 10%	V104K0402X6S250NC*
						± 20%	V104M0402X6S250NC*
			220nF	± 10%	V224K0402X6S250NC*		
				± 20%	V224M0402X6S250NC*		
			25	0.63(max)	1.0 μ F	± 10%	V105K0402X6S250NN*
						± 20%	V105M0402X6S250NN*
					100nF	± 10%	V104K0402X6S160NN*
						± 20%	V104M0402X6S160NN*
220nF	± 10%	V224K0402X6S160NC*					
	± 20%	V224M0402X6S160NC*					

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number	
0402	X6S	X6S	16	0.70(max)	470nF	± 10%	V474K0402X6S160NC*	
					± 20%	V474M0402X6S160NC*		
				0.55(max)	1.0 μ F	± 10%	V105K0402X6S160NB*	
					± 20%	V105M0402X6S160NB*		
				10	0.63(max)	100nF	± 10%	V104K0402X6S100NN*
							± 20%	V104M0402X6S100NN*
						220nF	± 10%	V224K0402X6S100NN*
							± 20%	V224M0402X6S100NN*
			470nF			± 10%	V474K0402X6S100NN*	
						± 20%	V474M0402X6S100NN*	
			0.55(max)		1.0 μ F	± 10%	V105K0402X6S100NB*	
					± 20%	V105M0402X6S100NB*		
					0.63(max)	2.2 μ F	± 10%	V225K0402X6S100NN*
						± 20%	V225M0402X6S100NN*	
					0.70(max)	4.7 μ F	± 10%	V475K0402X6S100NC*
						± 20%	V475M0402X6S100NC*	
			6.3	0.63(max)	100nF	± 10%	V104K0402X6S6R3NN*	
						± 20%	V104M0402X6S6R3NN*	
					220nF	± 10%	V224K0402X6S6R3NN*	
						± 20%	V224M0402X6S6R3NN*	
					470nF	± 10%	V474K0402X6S6R3NN*	
						± 20%	V474M0402X6S6R3NN*	
				0.55(max)	1.0 μ F	± 10%	V105K0402X6S6R3NB*	
					± 20%	V105M0402X6S6R3NB*		
					0.63(max)	2.2 μ F	± 10%	V225K0402X6S6R3NN*
						± 20%	V225M0402X6S6R3NN*	
					0.70(max)	4.7 μ F	± 10%	V475K0402X6S6R3NC*
						± 20%	V475M0402X6S6R3NC*	
			4	0.55(max)	1.0 μ F	± 10%	V105K0402X6S4R0NB*	
						± 20%	V105M0402X6S4R0NB*	
					2.2 μ F	± 10%	V225K0402X6S4R0NB*	
						± 20%	V225M0402X6S4R0NB*	
0.70(max)	4.7 μ F	± 10%		V475K0402X6S4R0NC*				
		± 20%		V475M0402X6S4R0NC*				
	10 μ F	± 10%		V106K0402X6S4R0NC*				
		± 20%		V106M0402X6S4R0NC*				
0603	X6S	X6S	35	0.90(max)	1.0 μ F	± 20%	V105M0603X6S350ND*	
				1.0(max)	2.2 μ F	± 20%	V225M0603X6S350NK*	

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number
0603	X6S	X6S	25	1.0(max)	2.2 μ F	± 20%	V225M0603X6S250NK*
					4.7 μ F	± 20%	V475M0603X6S250NK*
				0.90(max)	2.2 μ F	± 20%	V225M0603X6S160ND*
					4.7 μ F	± 20%	V475M0603X6S160NK*
			16	1.0(max)	10 μ F	± 20%	V106M0603X6S160NK*
					2.2 μ F	± 20%	V225M0603X6S100ND*
				0.90(max)	4.7 μ F	± 20%	V475M0603X6S100NK*
					10 μ F	± 20%	V106M0603X6S100NK*
			10	1.0(max)	2.2 μ F	± 20%	V225M0603X6S6R3ND*
					4.7 μ F	± 20%	V475M0603X6S6R3ND*
				0.90(max)	10 μ F	± 20%	V106M0603X6S6R3NK*
					22 μ F	± 20%	V226M0603X6S6R3NK*
			6.3	0.90(max)	4.7 μ F	± 20%	V475M0603X6S4R0ND*
					10 μ F	± 20%	V106M0603X6S4R0NK*
				1.0(max)	2.2 μ F	± 20%	V226M0603X6S4R0NK*
					4.7 μ F	± 20%	V475M0805X6S250NH*
			4	0.90(max)	1.0 μ F	± 20%	V105M0805X6S160NH*
						± 20%	V225M0805X6S160NH*
					4.7 μ F	± 20%	V475M0805X6S160NH*
						± 20%	V106M0805X6S160NH*
					10 μ F	± 20%	V106M0805X6S100NH*
						± 20%	V226M0805X6S100NH*
				1.45(max)	4.7 μ F	± 20%	V475M0805X6S6R3NY*
						± 20%	V475M0805X6S6R3NH*
10 μ F	± 20%	V106M0805X6S6R3NY*					
	± 20%	V106M0805X6S6R3NH*					
22 μ F	± 20%	V226M0805X6S6R3NH*					
	± 20%	V476M0805X6S6R3NH*					
0805	X6S	X6S	25	1.0(max)	4.7 μ F	± 20%	V475M0805X6S250NH*
					± 20%	V105M0805X6S160NH*	
				1.45(max)	2.2 μ F	± 20%	V225M0805X6S160NH*
					4.7 μ F	± 20%	V475M0805X6S160NH*
			16	1.0(max)	10 μ F	± 20%	V106M0805X6S160NH*
					4.7 μ F	± 20%	V475M0805X6S100NH*
				1.45(max)	10 μ F	± 20%	V106M0805X6S100NH*
					22 μ F	± 20%	V226M0805X6S100NH*
			10	1.0(max)	4.7 μ F	± 20%	V475M0805X6S6R3NY*
					± 20%	V475M0805X6S6R3NH*	
				1.45(max)	10 μ F	± 20%	V106M0805X6S6R3NY*
					± 20%	V106M0805X6S6R3NH*	
6.3	1.0(max)	4.7 μ F	± 20%	V475M0805X6S6R3NY*			
			± 20%	V475M0805X6S6R3NH*			
		1.45(max)	10 μ F	± 20%	V106M0805X6S6R3NY*		
			± 20%	V106M0805X6S6R3NH*			
	1.45(max)	22 μ F	± 20%	V226M0805X6S6R3NH*			
			± 20%	V476M0805X6S6R3NH*			
		47 μ F	± 20%	V476M0805X6S6R3NY*			
			± 20%	V476M0805X6S6R3NH*			
4	1.0(max)	4.7 μ F	± 20%	V475M0805X6S6R3NY*			
			± 20%	V475M0805X6S6R3NH*			
		1.45(max)	10 μ F	± 20%	V106M0805X6S6R3NY*		
			± 20%	V106M0805X6S6R3NH*			
	1.45(max)	22 μ F	± 20%	V226M0805X6S6R3NY*			
			± 20%	V226M0805X6S6R3NH*			
		47 μ F	± 20%	V476M0805X6S6R3NY*			
			± 20%	V476M0805X6S6R3NH*			

高温型片式多层陶瓷电容器系列 X7T High Temperature MLCC (X7T)

温度特性 T.C. Code	微容系列代码 VIIYONG Type Code	尺寸范围(EIA) Size	额定电压范围 Rated Voltage	静电容量范围 Capacitance
X7T	X7T	0201~0805	4~50Vdc	100nF~10μF

X7T特点 Characteristics

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.

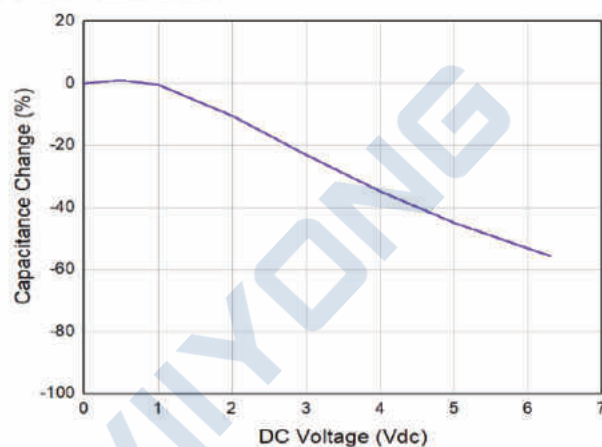
X7T应用领域 Application Field

CPU、芯片外围、户外安防摄像头等高温工作电路

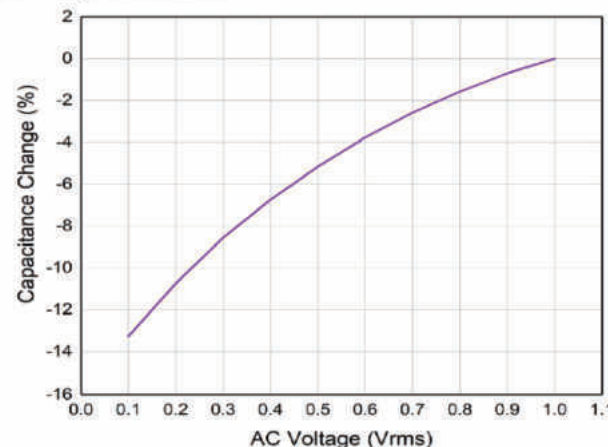
High-temperature working circuit such as CPU, Chip periphery and outdoor security camera etc.

X7T特性曲线 Characteristics Curve

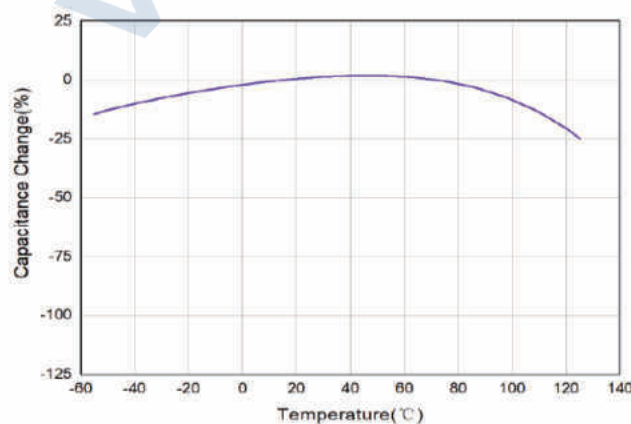
DC Bias Characteristics



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.

规格型号及品名 Product Range and Part Number

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number					
0201	X7T	X7T	10	0.35(max)	100nF	± 10%	V104K0201X7T100NJ*					
						± 20%	V104M0201X7T100NJ*					
					100nF	± 10%	V104K0201X7T6R3NA*					
						± 20%	V104M0201X7T6R3NA*					
					100nF	± 10%	V104K0201X7T4R0NA*					
						± 20%	V104M0201X7T4R0NA*					
			4	0.35(max)	220nF	± 10%	V224K0201X7T4R0NJ*					
						± 20%	V224M0201X7T4R0NJ*					
					1 μ F	± 10%	V105K0201X7T4R0NX*					
						± 20%	V105M0201X7T4R0NX*					
					0402	X7T	X7T	50	0.70(max)	100nF	± 10%	V104K0402X7T500NC*
											± 20%	V104M0402X7T500NC*
100nF	± 10%	V104K0402X7T350NC*										
	± 20%	V104M0402X7T350NC*										
220nF	± 10%	V224K0402X7T250NC*										
	± 20%	V224M0402X7T250NC*										
16	0.55(max)	1.0 μ F	± 10%	V105K0402X7T160NB*								
			± 20%	V105M0402X7T160NB*								
		220nF	± 10%	V224K0402X7T100NC*								
			± 20%	V224M0402X7T100NC*								
		1.0 μ F	± 10%	V105K0402X7T100NB*								
			± 20%	V105M0402X7T100NB*								
6.3	X7T	X7T	6.3	0.63(max)	220nF	± 10%	V224K0402X7T6R3NN*					
						± 20%	V224M0402X7T6R3NN*					
					470nF	± 10%	V474K0402X7T6R3NN*					
						± 20%	V474M0402X7T6R3NN*					
					1.0 μ F	± 10%	V105K0402X7T6R3NB*					
						± 20%	V105M0402X7T6R3NB*					
			4	0.55(max)	100nF	± 10%	V104K0402X7T4R0NB*					
						± 20%	V104M0402X7T4R0NB*					
					220nF	± 10%	V224K0402X7T4R0NN*					
						± 20%	V224M0402X7T4R0NN*					
					470nF	± 10%	V474K0402X7T4R0NN*					
						± 20%	V474M0402X7T4R0NN*					
1.0 μ F	± 10%	V105K0402X7T4R0NB*										
	± 20%	V105M0402X7T4R0NB*										
2.2 μ F	± 10%	V225K0402X7T4R0NB*										
	± 20%	V225M0402X7T4R0NB*										

规格型号及品名 *Product Range and Part Number*

尺寸 Size	应用特性代码 Application Code	温度特性代码 T.C. Code	额定电压 U _R (Vdc)	厚度 Thickness(mm)	静电容量 Cap.	允许偏差 Tolerance	品名 Part Number	
0402	X7T	X7T	4	0.70(max)	4.7 μ F	± 10%	V475K0402X7T4R0NC*	
						± 20%	V475M0402X7T4R0NC*	
0603	X7T	X7T	16	0.90(max)	1.0 μ F	± 20%	V105M0603X7T160ND*	
				1.0(max)	2.2 μ F	± 20%	V225M0603X7T160NK*	
				10	0.90(max)	1.0 μ F	± 20%	V105M0603X7T100ND*
					2.2 μ F	± 20%	V225M0603X7T100ND*	
					4.7 μ F	± 20%	V475M0603X7T100NK*	
					10 μ F	± 20%	V106M0603X7T100NK*	
			6.3	0.90(max)	± 20%	V105M0603X7T6R3ND*		
				2.2 μ F	± 20%	V225M0603X7T6R3ND*		
			4	1.0(max)	± 20%	V475M0603X7T6R3NK*		
				0.90(max)	± 20%	V225M0603X7T4R0ND*		
				4.7 μ F	± 20%	V475M0603X7T4R0NK*		
				10 μ F	± 20%	V106M0603X7T4R0NK*		
0805	X7T	X7T	16	1.0(max)	1.0 μ F	± 20%	V105M0805X7T160NY*	
					± 20%	V105M0805X7T160NH*		
				2.2 μ F	± 20%	V225M0805X7T160NH*		
				4.7 μ F	± 20%	V475M0805X7T160NH*		
				10	2.2 μ F	± 20%	V225M0805X7T100NH*	
					4.7 μ F	± 20%	V475M0805X7T100NH*	
					10 μ F	± 20%	V106M0805X7T100NH*	
				6.3	2.2 μ F	± 20%	V225M0805X7T6R3NH*	
					4.7 μ F	± 20%	V475M0805X7T6R3NH*	
			10 μ F		± 20%	V106M0805X7T6R3NH*		
			4	1.0(max)	± 20%	V225M0805X7T4R0NY*		
				1.45(max)	± 20%	V225M0805X7T4R0NH*		
				4.7 μ F	± 20%	V475M0805X7T4R0NY*		
				1.45(max)	± 20%	V475M0805X7T4R0NH*		
				1.0(max)	± 20%	V106M0805X7T6R3NY*		
10 μ F	± 20%	V106M0805X7T6R3NY*						

*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. Which 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 over time.

The aging process is predictable and follows a logarithmic decay. This aging process is also reversible. When the capacitor is heated to a temperature above its Curie point for a certain period of time, de-aging will occur and the capacitor will regain the capacitance lost during the aging process.

The de-aging outcome depends on both the operating temperature and time at that temperature. In general, exposure to 150°C for one-half hour is sufficient to return the capacitor to its initial capacitance value as the capacitance changes rapidly and 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.

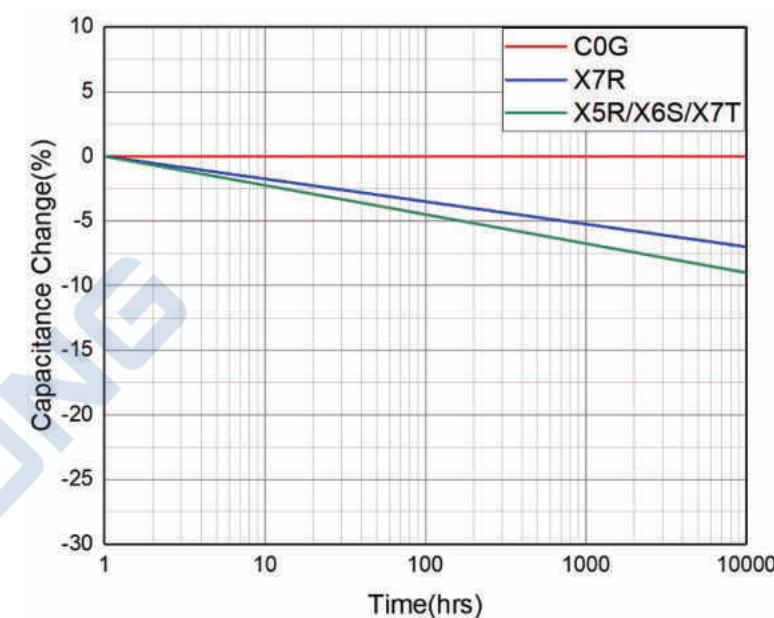


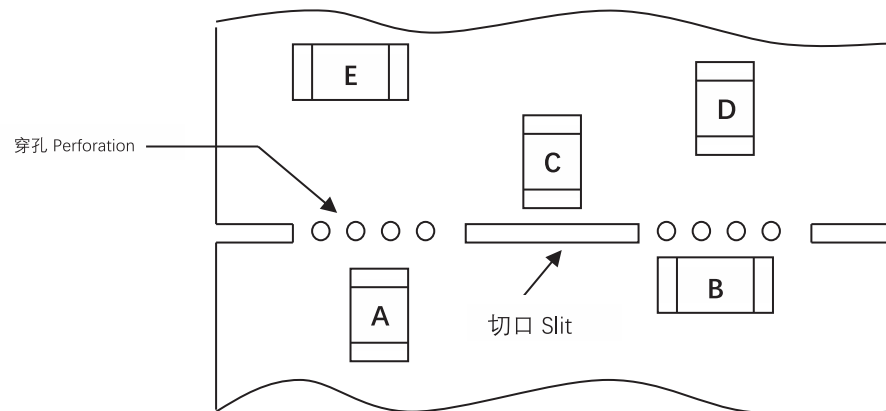
图:MLCC各种材料老化曲线

应用技术要求 Application of technical requirements

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.



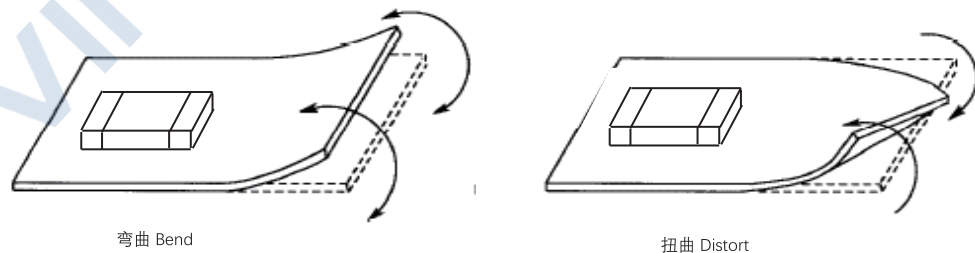
施加在电容器上的应力大小如下： $A > B = C > D > E$

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

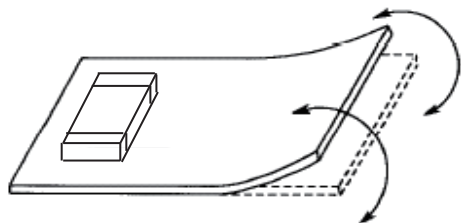
注意：不要弯曲或扭曲PCB，否则电容器会发生断裂。请参考下面的例子：

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

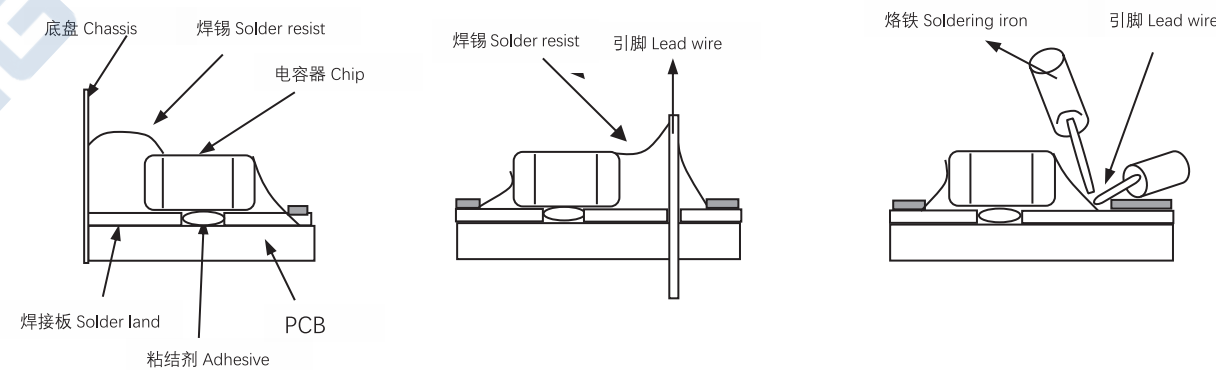


b. 建议的操作方式 Recommended

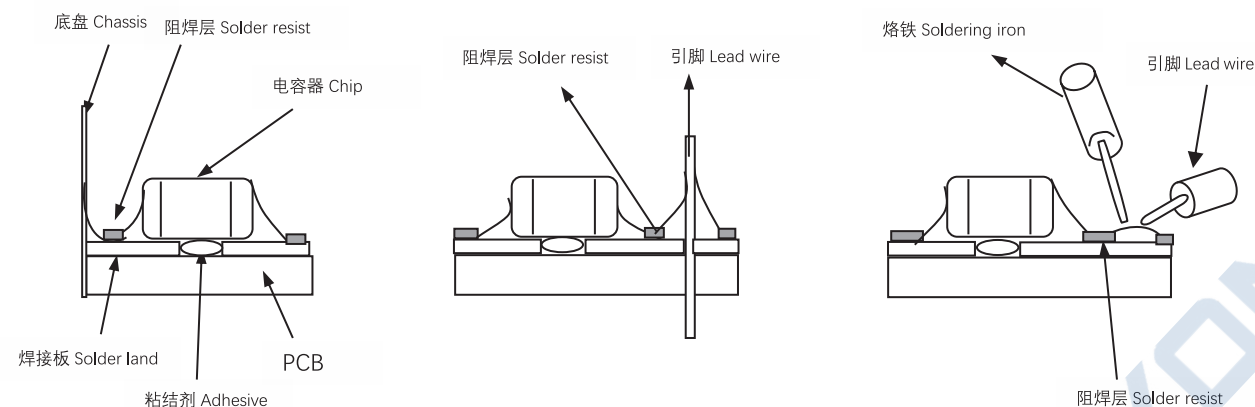


焊锡的应用以及焊接方式 Solder Buildup and Soldering Methods

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；

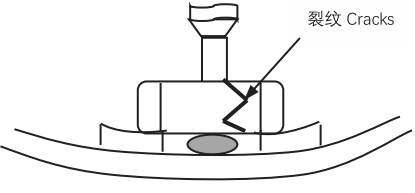
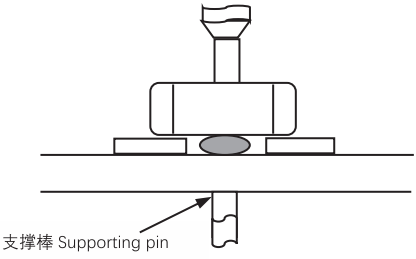
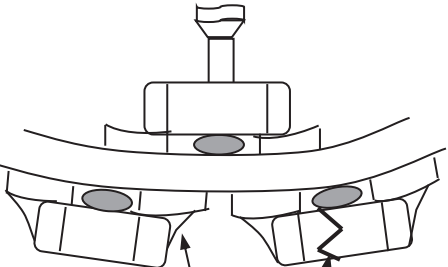
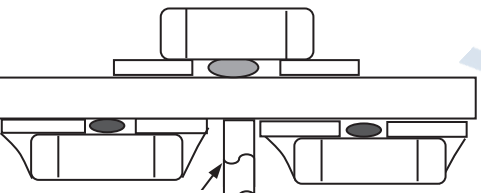
Adjust the bottom dead center of the mounting head to reach on the PCB surface and not press it;

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	 裂纹 Cracks	 支撑棒 Supporting pin
双面贴装 Double-sided Mounting	 焊层脱落 Solder peeling 裂纹 Cracks	 支撑棒 Supporting pin

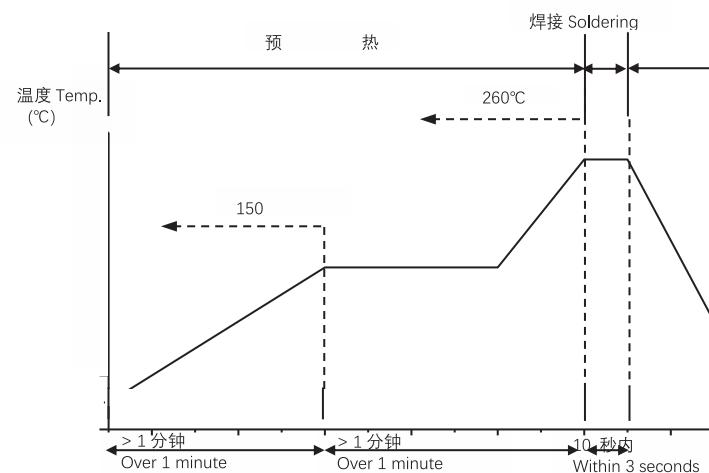
焊接要求 Soldering

焊剂的选择 Flux Selection:

- a. 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.
- b. 请使用适量的焊剂, 避免过量。
Please provide proper amount of flux. Excessive flux must be avoided.
- c. 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.

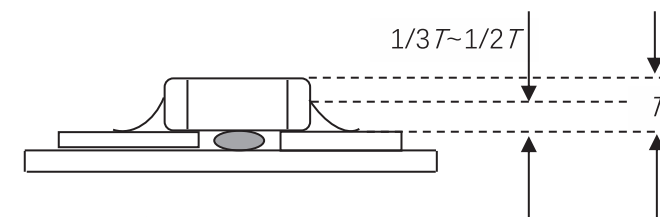
焊接曲线的设计 Recommended Soldering Profile:

回流焊条件 Reflow Soldering Condition



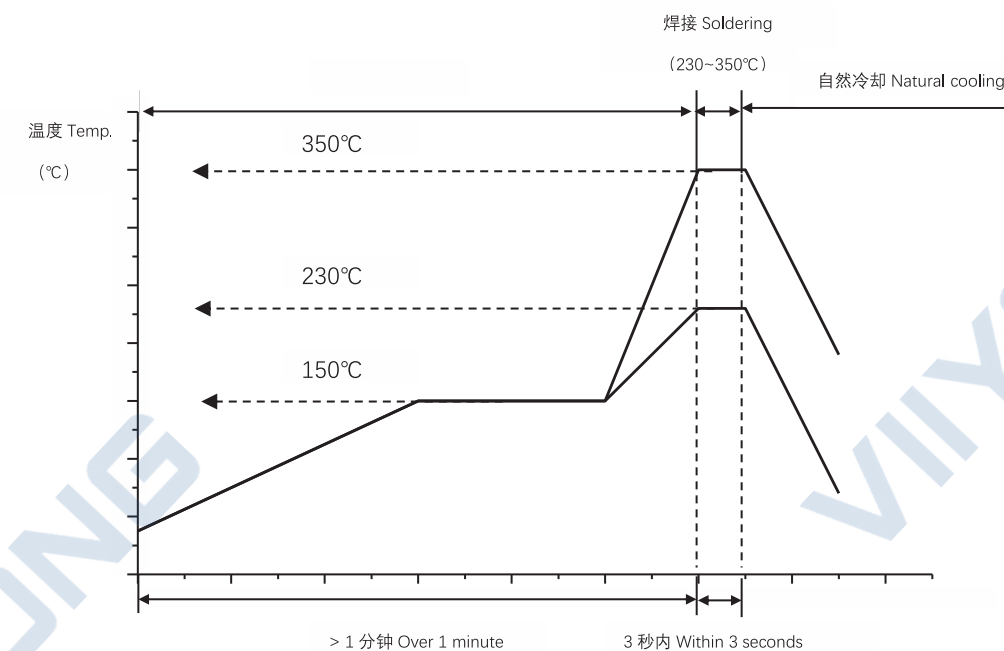
注意 Cautions:

- 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1/3~1/2, 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:



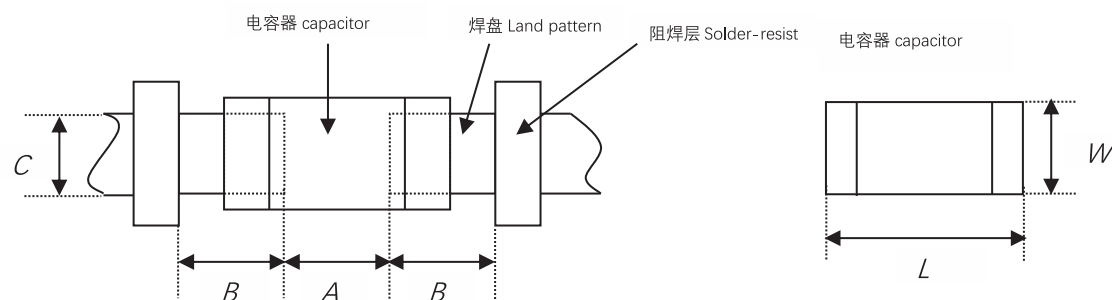
注意 Cautions:

- 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

- a. 产品贮存周期为12个月, 超过12个月需重新提交检验。
Product storage period is 12 months, more than 12 months need to be re-submitted for inspection.
- b. 贮存温度需小于35°C, 相对湿度需小于RH70%。
Storage temperature should be less than 35°C and relative humidity should be less than RH70%

工作温度 Operating Temperature

- a. 电容器使用过程中避免超过其上限定类别温度。
Do not use capacitor above the maximum allowable operating temperature.
- b. 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.

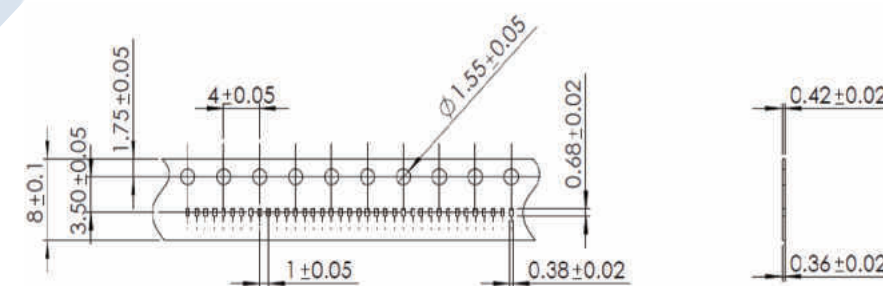
工作电压 Operating Voltage

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

VIIYONG

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