



引线式多层瓷介电容器

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CC4型、CT4型引线式多层瓷介电容器

执行标准

- 总规范: GB/T 2693-2001《电子设备用固定电容器第1部分:总规范》
 分规范: GB/T5966-2011《电子设备用固定电容器第8部分:分规范1类瓷介固定电容器》
 GB/T5968-2011《电子设备用固定电容器第9部分:分规范2类瓷介固定电容器》
 详细规范: GB/T5967-2011《电子设备用固定电容器第8-1部分:1类瓷介固定电容器评定水平EZ》
 GB/T5969-2012《电子设备用固定电容器第9-1部分:2类瓷介固定电容器评定水平EZ》



产品应用

- CG: 属1类陶瓷介质, 电气性能最稳定, 基本上不随温度、时间、电压的改变而改变, 适用于稳定性、可靠性要求较严格的场合。由于电气性能稳定, 高频特性好, 可很好地工作在高频、特高频、甚高频频段。
 2X1、X5R: 属2类陶瓷介质, 电气性能稳定, 随温度、时间、电压的变化, 其特性变化并不明显, 适用于要求较高的耦合、旁路、滤波电路及10MHz以下的中频场合。
 2F4: 属2类陶瓷介质, 具有很高的介电系数, 常用于生产小体积、大电容的电容器, 其容量随温度改变比较明显, 抗恶劣环境能力较差, 但成本低, 仍广泛应用于要求不高的滤波、旁路等电路场合。

选用示例

CC4 CT4	0805 1206	CG 2X1	50V 100V	100pF 0.1 μF	J K			
型号	外形尺寸	温度特性	额定电压	标称容量	允许偏差	腿形	腿长	包装方式
①	②	③	④	⑤	⑥	⑦	⑧	⑨

如无特殊要求不填写

① 型号

- CC4: 引线式1类多层瓷介(独石)电容器(CG)
 CT4: 引线式2类多层瓷介(独石)电容器(2X1、X5R、2F4)

② 外形尺寸(以所选用的电容器芯片尺寸代码作为该电容器的外形代码)

单位: mm

外形代码	0805	0805	1206	1210	1812	2225
Wmax	4.85	4.85	5.86	5.86	7.14	8.62
Hmax	4.16	4.16	4.36	4.80	6.00	8.62
Tmax	3.70	3.70	4.10	4.20	4.20	4.20
F	2.54 ± 0.1	5.08 ± 0.1	5.08 ± 0.1	5.08 ± 0.1	5.08 ± 0.12	5.08 ± 0.12
d	0.5 ± 0.05	0.5 ± 0.05	0.5 ± 0.05	0.5 ± 0.05	0.6 ± 0.05	0.6 ± 0.05
腿长Lmin	25.4	25.4	25.4	25.4	25.4	25.4
外形图						
腿形代号	L 直腿	H 标准腿	H 标准腿	H 标准腿	H 标准腿	H 标准腿

说明: ①如需特别小颗粒的产品请附图联系特制。

②一旦提出要求, 可以提供本表以外的任何腿形、腿距。

③ 温度特性

组别	CG	2X1	X5R	2F4
温度特性	(0 ± 30)ppm/°C	± 15%	± 15%	+30% ~ -80%
温度范围	-55°C ~ 125°C	-55°C ~ 125°C	-55°C ~ 85°C	-30°C ~ 85°C

④ 额定电压: 直标法

6.3V 10V 16V 25V 50V(63V) 100V 200V
 250V 500V 630V 1kV 2kV 3kV

⑤ 标称容量

■ 采用直标法表示标称容量

例: 0.5pF 100pF 1000pF 0.01 μF 0.1 μF

■ 采用三位数表示法, 前二位数有效数, 第三位为“0”的个数, 单位: pF

例: 0R5 = 0.5pF 5R0 = 5pF 7R5 = 7.5pF (P或R代表小数点)
 100 = 10pF 101 = 100pF 104 = 100000pF = 0.1 μF

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⑥ 允许偏差

组别	CG						2X1/X5R			2F4	
	B(特选)*	C*	D*	F(特选)	G(特选)	J	J(特选)	K	M	S	Z
允许偏差	±0.1pF	±0.25pF	±0.5pF	±1%	±2%	±5%	±5%	±10%	±20%	+50~-20%	+80~-20%

*C_R≤10pF; 特殊精度产品请咨询火炬电子应用工程部

⑦ 腿形: L=直腿 H=标准腿

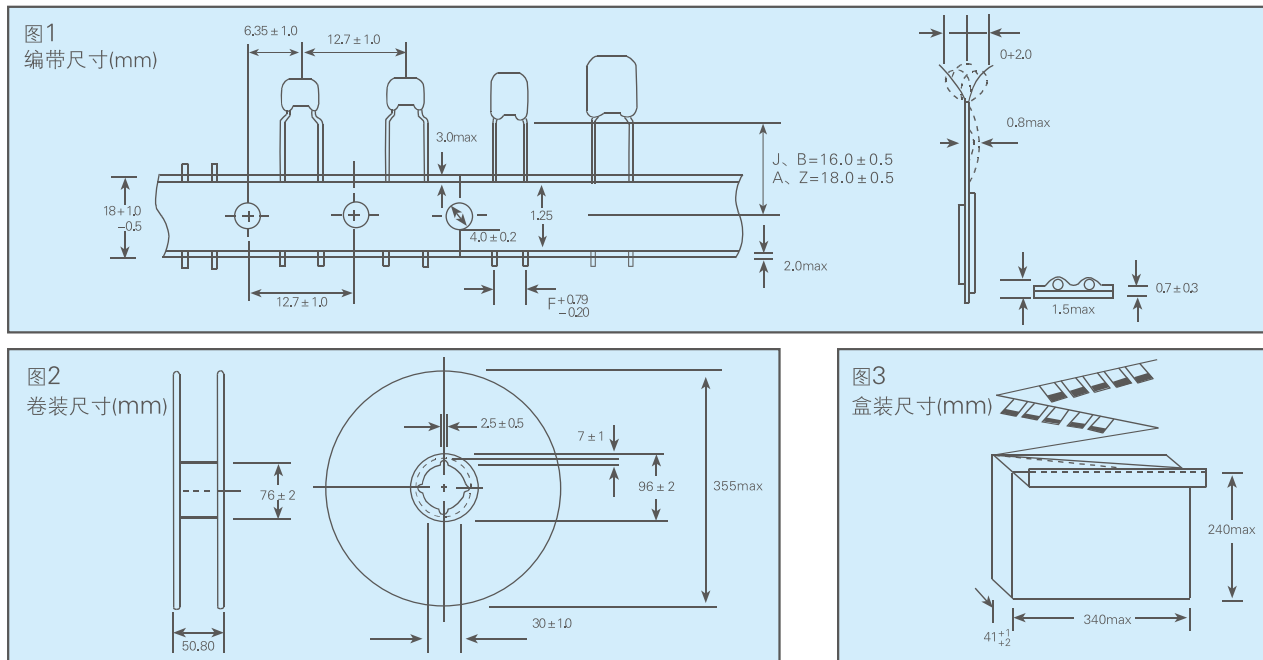
注: 如无特别说明出厂前以标准腿H制作。

⑧ 腿长: 优选腿长: 3=3.0±1mm 6=6.0±1mm 9=9.0±1mm

注: 如无特别说明出厂前腿长以L≥25.4mm制作, 特殊腿长要求, 以数字直标。

⑨ 包装方式

T=塑胶袋散装 500只/包 4000只/盒(8包)
 0805尺寸: 5000只/盒(10包), 2225尺寸: 400只/包
 A=卷装编带包装 2500只/盘(有J、A二种高度, 详见图1、图2)
 B=盒装折叠编带包装 2000只/盒(有B、Z二种高度, 详见图1、图3)
 注: 无特别说明, 出产前以500只/塑胶袋包装。



电气参数

特性	损耗角正切(C _R 单位: pF)	介质耐电压	25℃绝缘电阻(C _R 单位: μF)	类别温度范围
CG	C _R ≤30pF $\text{tg } \delta \leq \frac{1}{(400+20C_R)}$ C _R >30pF $\text{tg } \delta \leq 10 \times 10^{-4}$	U _R ≤200V 2.5U _R U _R =250V 2.0U _R U _R =500V 1.5U _R U _R ≥630V 1.2U _R	C _R ≤0.01μF IR≥10 ⁴ MΩ C _R >0.01μF IR≥ $\frac{100}{C_R}$ MΩ	-55℃~125℃
2X1	6.3V≤U _R <16V $\text{tg } \delta \leq 1000 \times 10^{-4}$ 16V≤U _R <25V $\text{tg } \delta \leq 700 \times 10^{-4}$ 25V≤U _R <50V $\text{tg } \delta \leq 500 \times 10^{-4}$ U _R ≥50V $\text{tg } \delta \leq 350 \times 10^{-4}$		C _R ≤0.025μF IR≥4GΩ C _R >0.025μF IR≥ $\frac{100}{C_R}$ MΩ	
X5R	10V≤U _R <16V $\text{tg } \delta \leq 1000 \times 10^{-4}$ 16V≤U _R <25V $\text{tg } \delta \leq 700 \times 10^{-4}$ 25V≤U _R <50V $\text{tg } \delta \leq 500 \times 10^{-4}$ U _R ≥50V $\text{tg } \delta \leq 500 \times 10^{-4}$			

注: 0603或0603以下尺寸的2X1、X5R、2F4产品, 或者容量大于等于1μF的2X1、X5R、2F4产品, 损耗角正切值 $\text{tg } \delta \leq 1000 \times 10^{-4}$

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容量范围

CC4型

外形尺寸	0805							1206							1210							1812							2225																																																																																																																																																																																																																																																																																																																																																
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额定电压(V)	50	100	200	250	500	630	1k	50	100	200	250	500	630	1k	2k	3k	50	100	200	250	500	630	1k	2k	3k	50	100	200	250	500	630	1k	2k	3k	25	50	100	200	250	500	630	1k	2k	3k																																																																																																																																																																																																																																																																																																																																	
cap (pF)	0.5	1.0						0.5	1.0	2.0	2.5	5.0	6.3	10	15	20	0.5	1.0	2.0	2.5	5.0	6.3	10	15	20	30	40	50	60	80	100	150	200	300	400	500	600	800	1000	1500	2000	3000	4000	5000	6000	8000	10000																																																																																																																																																																																																																																																																																																																														
	1.2	1.5						1.2	1.5	3.0	3.6	7.2	9.0	15	22	30	1.2	1.5	3.0	3.6	7.2	9.0	15	22	30	45	60	90	120	180	240	360	480	720	960	1440	1920	2880	3840	5760	7680	11520	15360	23040	30720	46080	61440	92160	122880	184320	245760	368640	491520	737280	983040	1474560	1966080	2949120	3932160	5898240	7864320	11796480	15728640	23592960	31457280	47185920	62914560	94371840	125829120	188743680	251658240	377486720	503315200	754972800	1006630400	1342176000	1782873600	2377164800	3168000000	4224000000	6336000000	8448000000	12672000000	16896000000	25344000000	33792000000	50688000000	67584000000	101376000000	135168000000	202752000000	270336000000	405504000000	540672000000	811008000000	1081344000000	1622016000000	2162688000000	3244032000000	4325376000000	6488064000000	8650752000000	12976128000000	17301504000000	25952256000000	34603008000000	51904320000000	69205632000000	103808448000000	138411264000000	207616896000000	276822528000000	415233792000000	553644960000000	830467440000000	1116956800000000	1498246200000000	2001025280000000	2668033760000000	4002050560000000	5336076800000000	8004153600000000	10672204800000000	14229273600000000	18902342400000000	28353504000000000	37804672000000000	56706912000000000	75609152000000000	113413728000000000	151218336000000000	226827504000000000	302436672000000000	453655008000000000	604873344000000000	907310016000000000	1210746688000000000	1816120032000000000	2415493376000000000	3220866752000000000	4831250176000000000	6431633600000000000	9647450400000000000	12863267200000000000	19294900800000000000	25726534400000000000	34302400000000000000	51453600000000000000	68604800000000000000	102907200000000000000	137210000000000000000	205815000000000000000	274420000000000000000	411630000000000000000	548840000000000000000	823260000000000000000	1107680000000000000000	1661520000000000000000	2215360000000000000000	2944000000000000000000	4416000000000000000000	5888000000000000000000	8832000000000000000000	11776000000000000000000	17664000000000000000000	23552000000000000000000	31440000000000000000000	47160000000000000000000	62880000000000000000000	94320000000000000000000	125760000000000000000000	188640000000000000000000	251520000000000000000000	334400000000000000000000	501600000000000000000000	668800000000000000000000	1003200000000000000000000	1337600000000000000000000	2006400000000000000000000	2675200000000000000000000	4012800000000000000000000	5350400000000000000000000	8025600000000000000000000	10700800000000000000000000	16051200000000000000000000	21401600000000000000000000	28512000000000000000000000	42768000000000000000000000	57024000000000000000000000	85536000000000000000000000	114048000000000000000000000	171072000000000000000000000	228096000000000000000000000	304128000000000000000000000	456192000000000000000000000	608256000000000000000000000	912384000000000000000000000	1216512000000000000000000000	1624640000000000000000000000	2436960000000000000000000000	3249280000000000000000000000	4873600000000000000000000000	6497920000000000000000000000	9747840000000000000000000000	12997760000000000000000000000	19496960000000000000000000000	25996160000000000000000000000	38994304000000000000000000000	51992448000000000000000000000	77988672000000000000000000000	103984900000000000000000000000	155977280000000000000000000000	207969600000000000000000000000	311961920000000000000000000000	415954240000000000000000000000	623931000000000000000000000000	831907840000000000000000000000	1247861760000000000000000000000	1663815680000000000000000000000	2495723520000000000000000000000	3327631360000000000000000000000	5003443200000000000000000000000	6679256000000000000000000000000	10018883200000000000000000000000	13334512000000000000000000000000	20001760000000000000000000000000	26688640000000000000000000000000	40032960000000000000000000000000	53377280000000000000000000000000	80064384000000000000000000000000	106751488000000000000000000000000	160127360000000000000000000000000	213503248000000000000000000000000	320280000000000000000000000000000	427056768000000000000000000000000	6405840000000000000000000000000000	8541112800000000000000000000000000	12811680000000000000000000000000000	17082256000000000000000000000000000	25623360000000000000000000000000000	34164464000000000000000000000000000	51246720000000000000000000000000000	68328976000000000000000000000000000	102492800000000000000000000000000000	136656640000000000000000000000000000	205004800000000000000000000000000000	273353000000000000000000000000000000	409920000000000000000000000000000000	546488000000000000000000000000000000	819731200000000000000000000000000000	1092974400000000000000000000000000000	1639462400000000000000000000000000000	2185950400000000000000000000000000000	3283920000000000000000000000000000000	4381890000000000000000000000000000000	6572832000000000000000000000000000000	8763774000000000000000000000000000000	13145664000000000000000000000000000000	17527552000000000000000000000000000000	26291200000000000000000000000000000000	35054848000000000000000000000000000000	52582400000000000000000000000000000000	70110000000000000000000000000000000000	105165000000000000000000000000000000000	140220000000000000000000000000000000000	210330000000000000000000000000000000000	280440000000000000000000000000000000000	420660000000000000000000000000000000000	560880000000000000000000000000000000000	841320000000000000000000000000000000000	1121760000000000000000000000000000000000	1682640000000000000000000000000000000000	2243520000000000000000000000000000000000	3365280000000000000000000000000000000000	4487040000000000000000000000000000000000	6730560000000000000000000000000000000000	8974080000000000000000000000000000000000	13461120000000000000000000000000000000000	17948160000000000000000000000000000000000	27435200000000000000000000000000000000000	36922240000000000000000000000000000000000	55383360000000000000000000000000000000000	73844480000000000000000000000000000000000	110766720000000000000000000000000000000000	147688960000000000000000000000000000000000	221532800000000000000000000000000000000000	295376640000000000000000000000000000000000	443062400000000000000000000000000000000000	590748200000000000000000000000000000000000	876121600000000000000000000000000000000000	1161495000000000000000000000000000000000000	1742240000000000000000000000000000000000000	2322984000000000000000000000000000000000000	3484416000000000000000000000000000000000000	4645848000000000000000000000000000000000000	6968736000000000000000000000000000000000000	9291624000000000000000000000000000000000000	13937440000000000000000000000000000000000000	18583240000000000000000000000000000000000000	27874880000000000000000000000000000000000000	37166520000000000000000000000000000000000000	55749760000000000000000000000000000000000000	74333000000000000000000000000000000000000000	111500800000000000000000000000000000000000000	148668800000000000000000000000000000000000000	222982400000000000000000000000000000000000000	297296000000000000000000000000000000000000000	446022400000000000000000000000000000000000000	594748800000000000000000000000000000000000000	882028800000000000000000000000000000000000000	1169308800000000000000000000000000000000000000	17534400	2337580800000000000000000000000000000000000000	3506112000000000000000000000000000000000000000	4674644000000000000000000000000000000000000000	6960976000000000000000000000000000000000000000	9247308000000000000000000000000000000000000000	13870912000000000000000000000000000000000000000	18494512000000000000000000000000000000000000000	277363200	369781200	554769600	739758000	1110022400	1480286400	2220550400	2960814400	4441078400	5921342400	8791606400	116618700	174947200	23327568000	35020416000	46713264000	69606112000	924989600	1387475200	1849960800	2774246400	3698531200	5547816000	7397100800	11100224000	14802864000	22205504000	29608144000	44410784000	59213424000	87916064000	1166187000	174947200	23327568000	35020416000	46713264000	69606112000	924989600	1387475200	1849960800	2774246400	3698531200	5547816000	7397100800	11100224000	14802

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