



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

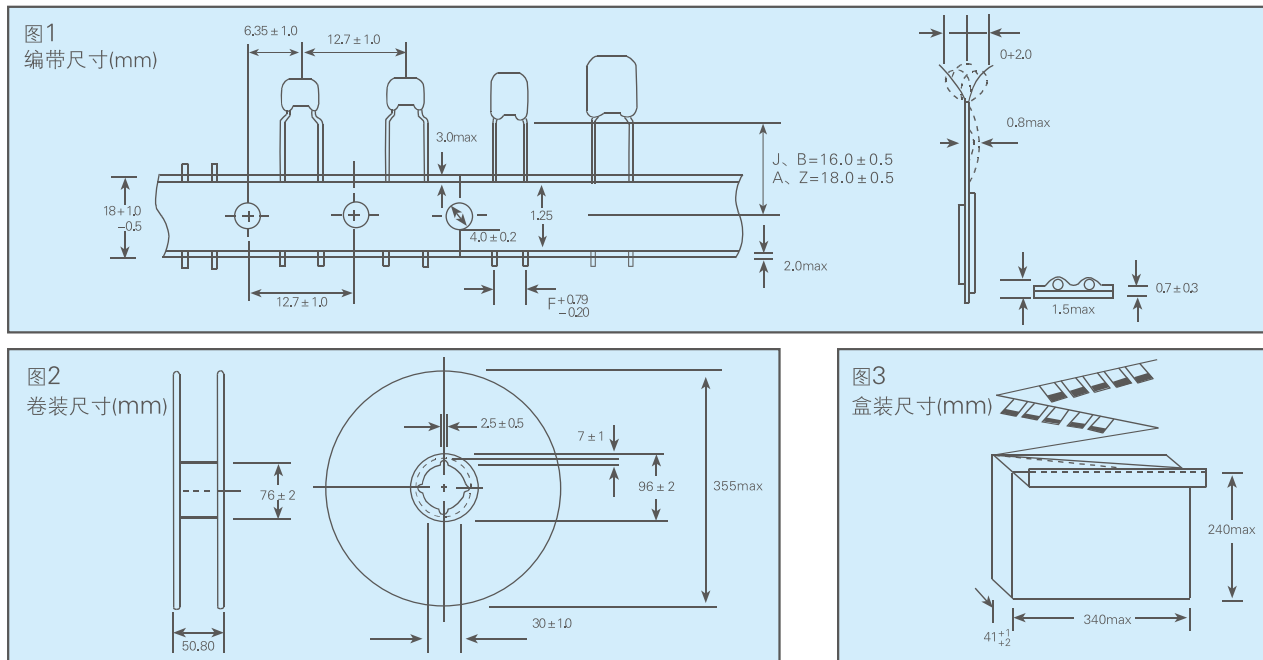
注: 如无特别说明出厂前以标准腿H制作。

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 $\text{tg } \delta \leq 500 \times 10^{-4}$			-30℃~85℃
2F4				

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	75	90	120	150	200	250	300	400	500	600	800	1000	1500	2000	3000	4000	5000	6000	8000	10000																																																																																																																																																																																																																																																																																																																																																																											
	1.8	2.2						1.8	2.2	4.5	5.4	10.8	13.5	22.5	33	45	1.8	2.2	4.5	5.4	10.8	13.5	22.5	33	45	67.5	90	112.5	135	180	225	300	375	450	600	750	900	1200	1500	2000	2500	3000	4000	5000	6000	8000	10000																																																																																																																																																																																																																																																																																																																																																																											
	2.7	3.3						2.7	3.3	6.75	8.1	16.2	20.25	33.75	50	67.5	2.7	3.3	6.75	8.1	16.2	20.25	33.75	50	67.5	101.25	135	168.75	202.5	270	337.5	427.5	540	675	900	1125	1350	1800	2250	2700	3600	4500	5400	7200	9000	10800	14400	18000	21600	28800	36000	45000	54000	72000	90000	108000	144000	180000	216000	288000	360000	450000	540000	720000	900000	1080000	1440000	1800000	2160000	2880000	3600000	4500000	5400000	7200000	9000000	10800000	14400000	18000000	21600000	28800000	36000000	45000000	54000000	72000000	90000000	108000000	144000000	180000000	216000000	288000000	360000000	450000000	540000000	720000000	900000000	1080000000	1440000000	1800000000	2160000000	2880000000	3600000000	4500000000	5400000000	7200000000	9000000000	10800000000	14400000000	18000000000	21600000000	28800000000	36000000000	45000000000	54000000000	72000000000	90000000000	108000000000	144000000000	180000000000	216000000000	288000000000	360000000000	450000000000	540000000000	720000000000	900000000000	1080000000000	1440000000000	1800000000000	2160000000000	2880000000000	3600000000000	4500000000000	5400000000000	7200000000000	9000000000000	10800000000000	14400000000000	18000000000000	21600000000000	28800000000000	36000000000000	45000000000000	54000000000000	72000000000000	90000000000000	108000000000000	144000000000000	180000000000000	216000000000000	288000000000000	360000000000000	450000000000000	540000000000000	720000000000000	900000000000000	1080000000000000	1440000000000000	1800000000000000	2160000000000000	2880000000000000	3600000000000000	4500000000000000	5400000000000000	7200000000000000	9000000000000000	10800000000000000	14400000000000000	18000000000000000	21600000000000000	28800000000000000	36000000000000000	45000000000000000	54000000000000000	72000000000000000	90000000000000000	108000000000000000	144000000000000000	180000000000000000	216000000000000000	288000000000000000	360000000000000000	450000000000000000	540000000000000000	720000000000000000	900000000000000000	1080000000000000000	1440000000000000000	1800000000000000000	2160000000000000000	2880000000000000000	3600000000000000000	4500000000000000000	5400000000000000000	7200000000000000000	9000000000000000000	10800000000000000000	14400000000000000000	18000000000000000000	21600000000000000000	28800000000000000000	36000000000000000000	45000000000000000000	54000000000000000000	72000000000000000000	90000000000000000000	108000000000000000000	144000000000000000000	180000000000000000000	216000000000000000000	288000000000000000000	360000000000000000000	450000000000000000000	540000000000000000000	720000000000000000000	900000000000000000000	1080000000000000000000	1440000000000000000000	1800000000000000000000	2160000000000000000000	2880000000000000000000	3600000000000000000000	4500000000000000000000	5400000000000000000000	7200000000000000000000	9000000000000000000000	10800000000000000000000	14400000000000000000000	18000000000000000000000	21600000000000000000000	28800000000000000000000	36000000000000000000000	45000000000000000000000	54000000000000000000000	72000000000000000000000	90000000000000000000000	108000000000000000000000	144000000000000000000000	180000000000000000000000	216000000000000000000000	288000000000000000000000	360000000000000000000000	450000000000000000000000	540000000000000000000000	720000000000000000000000	900000000000000000000000	1080000000000000000000000	1440000000000000000000000	1800000000000000000000000	2160000000000000000000000	2880000000000000000000000	3600000000000000000000000	4500000000000000000000000	5400000000000000000000000	7200000000000000000000000	9000000000000000000000000	10800000000000000000000000	14400000000000000000000000	18000000000000000000000000	21600000000000000000000000	28800000000000000000000000	36000000000000000000000000	45000000000000000000000000	54000000000000000000000000	72000000000000000000000000	90000000000000000000000000	108000000000000000000000000	144000000000000000000000000	180000000000000000000000000	216000000000000000000000000	288000000000000000000000000	360000000000000000000000000	450000000000000000000000000	540000000000000000000000000	720000000000000000000000000	900000000000000000000000000	1080000000000000000000000000	1440000000000000000000000000	1800000000000000000000000000	2160000000000000000000000000	2880000000000000000000000000	3600000000000000000000000000	4500000000000000000000000000	5400000000000000000000000000	7200000000000000000000000000	9000000000000000000000000000	10800000000000000000000000000	14400000000000000000000000000	18000000000000000000000000000	21600000000000000000000000000	28800000000000000000000000000	36000000000000000000000000000	45000000000000000000000000000	54000000000000000000000000000	72000000000000000000000000000	90000000000000000000000000000	108000000000000000000000000000	144000000000000000000000000000	180000000000000000000000000000	216000000000000000000000000000	288000000000000000000000000000	360000000000000000000000000000	450000000000000000000000000000	540000000000000000000000000000	720000000000000000000000000000	900000000000000000000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