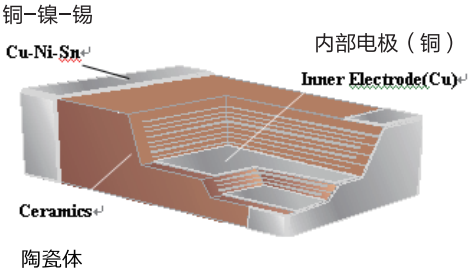
C0G高频高Q值产品 High Q Value Ceramic Capacitor

■ 产品优势 Product Advantage

C0G高频高Q值陶瓷电容器：此类介质材料的电容器为I类电容器。以导电性更好的铜作为内电极。具有在VHF、UHF、微波时高Q值和低ESR的特性。主要可以提高移动通信设备的功能降低其功耗（基站、终端等）。主要适用于高频电路（移动通信设备）

High Q Value Ceramic Capacitor: belongs to Class I dielectric material with better conductivity Cu for inner electrode. While VHF，UHF，microwave，high Q and low ESR. It mailnly can improve the performance of mobile telecom equipments and lower the power (Base stations，terminals,etc.).It mainly applies for high frequency circuit (mobile telecom equipments).

■ 产品结构



■ 产品规格型号命名 Part Number

HQ	0603	C0G	100	J	500	N	T	D
产品类型 Product Type	尺寸规格 Size Type Code	温度系数 T.C.	电容值 Capacitance	允许偏差 Tolerance	额定电压 Rate Voltage	端头类型 Terminal Type	包装 Packaging	厚度 Thickness
高Q值贴片电容 MLCC	0201 0402 0603 0805	C0G	1R5=1.5pF 100=10pF 222=2200pF	A=±0.05pF B=±0.1pF C=±0.25pF D=±0.5pF F=±1.0% G=±2.0% J=±5.0% K=±10%	250=25V 500=50V 101=100V 251=250V	N=Ag（or Cu）/Ni/Sn 3-layer construction	T=编带 Taping B=袋散装 Bulk	Z=0.20±0.02mm A=0.30±0.03mm B=0.50±0.05mm E=0.60±0.10mm D=0.80±0.10mm

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■ 高Q产品容量范围 High Q Capacitance Range

背景色代表：可生产型号

C0G											
	0201		0402		0603				0805		
Cp \ VDC	25	50	25	50	25	50	100	250	25	50	100
0R2											
0R3											
0R47											
0R5											
0R56											
0R68											
0R75											
0R82											
1R0											
1R2											
1R5											
1R8											
2R0											
2R2											
2R7											
3R0											
3R3											
3R9											
4R0											
4R7											
5R0											
5R6											
6R0											
6R8											
7R0											
8R0											
8R2											
9R0											
100											
120											
150											
180											
200											
220											
270											
300											
330											
390											
470											
560											
680											
820											
101											

■ 技术指标和试验方法 Specifications and Test Methods

NO	项目 Item	技术指标 Specification	试验方法 Test Method
1	外观 Appreance	外观无异常 No abnormalities	通过显微镜视觉检测（X10） On microscope
2	尺寸 Dimension	在要求的范围内 Within the specified dimensions	采用精度不低于0.01mm用千分尺 Using calipers on micrometer with tolerance no less than 0.01mm
3	容量 Capactance (c)	在要求的容值容差范围内 Within the specified tolerance	频率：1±0.1MHz 电压：0.5-5.0Vrms 25℃±2℃ Frequency：1±0.1MHz Voltage：0.5-5.0Vrms
4	损耗 Dissipation Factor (Q)	0201：Q≥1000 0402：Cp≥30pF Q≥1000 1pF＜Cp≤30pF Q≥400＋20C Cp≤1pF Q≥300 0603、0805： Cp≥30pF Q≥1000 1pF＜Cp≤30pF Q≥800＋20C Cp≤1pF Q≥600	频率：1±0.1MHz 电压：0.5-5.0Vrms 25℃±2℃ Frequency：1±0.1MHz Voltage：0.5-5.0Vrms 25℃±2℃
5	绝缘电阻 Insulation Resistance (Ri)	Ri＞10 GΩ 或 500Ω·F (取较小值) Ri＞10 GΩ or 500Ω·F whichever is smaller	U测=U_R； 充电时间:60±5秒 温度：25℃±2℃ 相对湿度：25%～80% RH Charge time:60±5sec Temperature:25℃±2℃ Humidity: 25%～80% RH
6	耐电压 Dielectric Strength	无介质击穿和材料裂缝 No dielectric breakdown or mechanical breakdown	施加额定电压的300%(额定250V时为250%)，1分钟，最大电流不超过50mA Force 300% rated voltage (250% for 250V) for 1min, max current should not exceed 50mA.
7	电容量温度系数 Capatiance Temperature Coefficient	温度系数≤0±30ppm/℃ Temperature coefficient within 0±30ppm/℃	按系列温度顺序测试电容容量 Measure capacitance under follow table list 步骤 Step / C0G 1 / 25 ±2℃ 2 / -55±3℃ 3 / 25 ±2℃ 4 / 125 ±3℃ 5 / 25 ±2℃ 预先干燥：16～24小时 与步骤3 的电容容量相比较，电容容量在温度范围内的变化在要求的范围之内。 Prelinminary Drying for 16～24hrs； The ranges of capacitance change compared with step 3 at the above 25℃ value over the temperature ranges shall be within the specified ranges.

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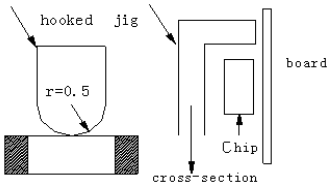
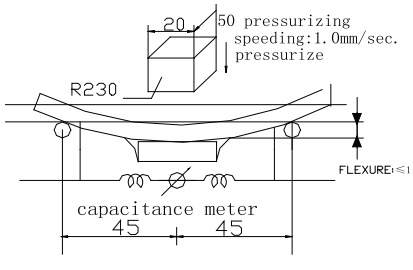
NO	项目 Item	技术指标 Specification	试验方法 Test Method
8	附着力 Adhesion	端电极无松动，也无其它不良现象 removal of the terminations or other defect shall occur	施加5N的压力（0201：2N），并保持10±1秒 The pressurizing force shall be 5N (=500g*f)（0201：2N）and the duration of application shall be 10±1sec 
9	可焊性 Solderability of Termination	端电极挂锡面积不小于95%，针孔或粗糙面积小于5% 95% min.coverage of both terminal electrodes and less than 5% have pin holes or rough spots.	锡炉温度：245±5℃ 浸入时间：2±1秒 两侧端电极完全浸入焊锡炉 Solder temperature: 245±5℃ Dipping time: 2±1 seconds. Completely soak both terminal electrodes in solder
10	端电极结合强度 Bending	无可见损伤； 容量变化≤±5%或±0.5pF (取较大值) No remarkable visual damage Cp change ≤ ±5% or ±0.5 pF whichever is larger	将片状电容器安装在测试夹具上，按图所示方向以1.0mm/s的速率施加压力，弯曲1.0mm。 Solder the capacitor on testing substrate and put on testing stand. The middle part of substrate shall successively be pressurized by pressuring rod at a rated of about 1.0mm/sec. Until the deflection become means of the 1.0mm. 

<table>
<tr><th>NO</th><th>项目
Item</th><th>技术指标
Specification</th><th>试验方法
Test Method</th></tr>
<tr><td rowspan="2">11</td><td rowspan="2">耐焊接热
Resistance
to
Soldering Heat</td><td>端电极挂锡面积不小于95%，针孔或粗糙面积小于5%, 无明显可见损伤
95% min.coverage of both terminal electrodes and less than 5% have pin holes or rough spots. No remarkable visual damage.</td><td rowspan="2">/
预热: 120～150℃ 60秒
焊接温度: 270±5℃
浸入时间: 10±1秒

在室温下放置24±2 小时以后测量

Preheating: 120～150℃ 60sec.
Soldering temperature: 270±5℃
Dipping time: 10±1 seconds.
Measurement to be made after being kept at room temperature for 24±2 hrs.</td></tr>
<tr><td>容量变化≤±2.5%或±0.25pF（取较大值）
IR ≥10GΩ
Q：0201：Q≥1000
0402：
Cp≥30pF Q≥1000
1pF＜Cp≤30pF Q≥400＋20C
Cp≤1pF Q≥300
0603、0805：
Cp≥30pF Q≥1000
1pF＜Cp≤30pF Q≥800＋20C
Cp≤1pF Q≥600
Cp change within ±2.5% or ±0.25pF whichever is larger.</td></tr>
<tr><td>12</td><td>温度快速循环
Temperature
Cycle</td><td>无明显可见损伤
容量变化≤±2.5%或 ±0.25pF（取较大值）
DF满足产品初始值的要求
IR满足产品初始值的要求

No remarkable visual damage
Cp change within ±2.5% or ±0.25pF, whichever is larger.
DF meets initial standard value.
IR meets initial standard value</td><td>按下列步骤进行5次循环:
To perform 5 cycles of the stated environment
<table>
<tr><th>步骤
Step</th><th>温度
Temperature</th><th>时间
Time</th></tr>
<tr><td>1</td><td>下限类别温度+0/−3℃
Min.operating Temp.+0/−3℃</td><td>30min</td></tr>
<tr><td>2</td><td>25℃</td><td>2～3 min</td></tr>
<tr><td>3</td><td>上限类别温度+3/−0℃
Max.operating Temp.+3/−0℃</td><td>30min</td></tr>
<tr><td>4</td><td>25℃</td><td>2～3 min</td></tr>
</table>
在室温下放置24±2 (C0G) 或48±4(X7R、X5R、Y5V) 小时以后测量
Measurement to be made after being kept at room temperature for 24±2hrs (C0G) or 48±4hrs (X7R, X5R, Y5V), then measure.</td></tr>
<tr><td>13</td><td>耐湿负荷
Damp heat
with load</td><td>外观无明显可见损伤
容量变化≤±7.5%或±0.75pF（取较大值）
Cp＜30pF, Q≥100+10/3*Cp
Cp≥30pF, Q≥200
IR ＞500MΩ或25Ω·F(取较小值)
No remarkable visual damage
Cp change≤±7.5% or ±0.75pF, whichever is larger.
Cp＜30pF, Q≥100+10/3*Cp
Cp≥30pF, Q≥200
IR＞500MΩ or 25Ω·F whichever is smaller</td><td>测试温度: 60±2℃
相对湿度: 90～95% RH
电压: 额定电压
测试时间: 500 ±12hrs

Test temperature: 60±2℃
Humidity: 90～95% RH
Voltage: 100% of the rated voltage
Testing time: 500 ± 12hrs</td></tr>
</table>

NO	项目 Item	技术指标 Specification	试验方法 Test Method
14	耐久性 Life Test	外观无明显可见损伤 容量变化≤±3%或±0.5pF（取较大值） Q≥350 (Cp≥30 pF) Q≥275+（2.5* Cp）(10 pF≤Cp＜30 pF) Q≥200+（10*Cp）(Cp＜10 pF) IR＞1000MΩ或50Ω·F(取较小值) No remarkable visual damage Cp change≤±3% or ±0.5pF whichever is larger. Q≥350 (Cp≥30 pF) Q≥275+（2.5* Cp）(10 pF≤Cp＜30 pF) Q≥200+（10*Cp）(Cp＜10 pF) IR＞1000MΩ or 50Ω·F whichever is smaller	测试温度：上限类别温度±3℃ 电压： 2倍额定电压 测试时间: 1000 小时 Test temperature: Max. Operating Temp. ±3℃ Voltage: 200% of the rated voltage Testing time ： 1000hrs 在室温下放置24±2 小时以后测量 Measurement to be made after being kept at room temperature for 24±2hrs