JEC
ISO-9001

東莞市智旭電子有限公司
JYH HSU（JEC）ELECTRONICS LTD.,

文件编号：P009
版本：　　0
制订日期：2016.9.15

承　认　书
SPECIFICATION FOR APPROVAL
Description：Class II Dielectric Radial Leaded MLCC

客户名称
Customer： _____

品　名
Part Name： CT4 II 类径向引线独石电容器 Class II Dielectric Radial Leaded MLCC

客户料号
Customer Part No: _____

承认规格
Approve Item: X7R-332K/50V　F=5.08MM

供应商料号
Part Number： CT4-0805B332K500F3

日　期
Date： 2022-03-14

客户承认 Customer approval	供应商承认 Supplier admit that 东莞市智旭电子有限公司 品保部

规格目录中所列的产品，材料和尺寸其他内容如有更改，恕不另行通知。

Specifications of products, materials and dimensions listed in the specification catalog are subject to change without prior notice.

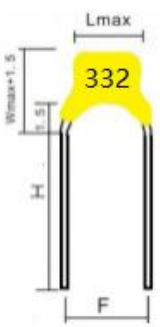
电性参数

规格型号 Product Name	容量范围 Capacitance	损耗(DF)	绝缘电阻(IR)	耐压范围 Breakdown Voltage	结果Result
CT4-0805B332K500F3	2.97～3.63nF	≤3.5%	≥5×10¹⁰Ω	≥2.5*UrVdc	OK

订货代码 Ordering Code

A	产品类别Product Type				B	本体外形尺寸规格（长×宽）Nominal Body Size（Length ×Width） A	
	CT4	CT4 II 类径向引线独石电容器 Class II Dielectric Radial Leaded MLCC				0805	0.20×0.12
C	温度特性Temperature Characteristic				D	标称容量Nominal Capacitance C	
	B	X7R	±15%	-50～+125 ℃		332	3.2nF
E	容量偏差Tolerance				F	额定电压Rated Voltage	
	K	±10%				500	50V
G	包装方式Packaging Style				H	脚距（单位：mm）Lead Space（Unit：mm）	
	Blank	散包装 1000PCS/包Bulk 1000PCS/BAG				F3	5.08mm

尺寸、工作电压及容量关系表 Size Code and Voltage VS Capacitance

尺寸规格SizeCode	外形Shape	尺寸（单位：mm）Dimensions（Unit：mm）					工作电压Voltage	标称容量范围Available Capacitance Range		
		F±0.5	H±0.5	Lmax	Wmax	Tmax		C0G (NP0)	X7R	Y5V/Z5U
0805		5.08	10	4.5	4.5	3.8	50V	0R5~332	101~105	102~105

通用型引线MLCC可靠性及测试方法
Reliability and Test Method for General Leaded MLCC

<table>
<tr><td>项目
Item</td><td colspan="3">技术要求
Technical Specification</td><td colspan="4">测试方法和备注
Test Method and Remarks</td></tr>
<tr><td rowspan="5">容量
Capacitance
(C)</td><td rowspan="3">I类
Class I</td><td rowspan="3" colspan="2">应符合指定的误差级别
within the specified tolerance.</td><td>标称容量
Capacitance</td><td>测试频率
Measuring Frequency</td><td>测试电压
Measuring Voltage</td></tr>
<tr><td>≤1000pF</td><td>1MHZ±10%</td><td rowspan="2">1.0±0.2V</td></tr>
<tr><td>＞1000 pF</td><td>1KHZ±10%</td></tr>
<tr><td rowspan="2">II类
Class II</td><td rowspan="2" colspan="2">应符合指定的误差级别
within the specified tolerance.</td><td colspan="3">对于II类电容器，测试前应先预处理
The capacitance should be pretreated before measured(only for classII).</td></tr>
<tr><td>测试频率
Measuring Frequency</td><td colspan="2">测试电压
Measuring Voltage</td></tr>
<tr><td rowspan="4">损耗角正切
Dissipation Factor
(DF)</td><td rowspan="2">I类
Class I</td><td rowspan="2" colspan="2">C_R≥50pF
DF≤0.15% C_R
＜50pF
DF≤1.5[(150/C_R)+7] X10^{-4}</td><td>1KHZ±10%</td><td>B:
1.0±0.2V</td><td>E/ Y(F)
0.3±0.2V</td></tr>
<tr><td colspan="3">对于II类电容器，测试前应先预处理
The capacitance should be pretreated before measured(only for classII).</td></tr>
<tr><td rowspan="2">II类
Class II</td><td>B</td><td>DF ≤3.5%</td><td colspan="3">测试频率: 1KHZ±10%; 测试电压: 1.0±0.2V
Measuring Frequency Measuring Voltage</td></tr>
<tr><td>E/
Y
(F)</td><td>≤7.5% (C_R≤0.1uF)
≤10.0%
(1uF ＞ C_R ＞0.1uF)
≤15% (C_R≥1uF)</td><td colspan="3">测试频率: 1KHZ±10%
Measuring Frequency
测试电压:0.3±0.2V
Measuring Voltage</td></tr>
<tr><td rowspan="2">绝缘电阻
Insulation Resistance</td><td>I类
Class I</td><td colspan="2">C≤10nF
IR≥10000MΩ
C>10nF
R.C≥100 ΩF</td><td colspan="3" rowspan="2">测试电压:额定电压
Measuring Voltage: Rated Voltage
测试时间: 60±5秒
Duration: 60±5s</td></tr>
<tr><td>II类
Class II</td><td colspan="2">C≤25nF
IR≥4000MΩ
C>25nF
R.C≥100 ΩF</td></tr>
</table>

<table>
<tr><th>项目
Item</th><th>技术要求
Technical Specification</th><th>测试方法和备注
Test Method and Remarks</th></tr>
<tr><td rowspan="2">耐电压
Withstanding Voltage</td><td rowspan="2">不应有介质被击穿或损伤
No breakdown or damage.</td><td>端子间Between terminals：
测试电压: 持续时间: 5±1秒
Measuring Voltage ： Duration: 5±1s
Ⅰ类:300%额定电压
ClassⅠ:300% Rated voltage
Ⅱ类:250%额定电压
ClassⅡ:250% Rated voltage
充/放电电流不应超过50mA
The charge/ discharge current is less than 50mA.</td></tr>
<tr><td>端子与外装间Between terminals and body：
施加电压：2.5U_R 持续时间： 1~5s
Voltage: 2.5 times rated voltage Duration： 1~5s
金属制小球法 Small metallic ball method
将电容器本体插入盛满直径为1mm的金属小球的容器中，但保留距端头处2mm的本体不插入。试验电压施加在短路回路端子和金属小球之间。
Small metallic balls with 1mm diameters shall be put in a vessel and the test capacitor shall be submerged except 2mm from the top of its component body and the terminals. The test voltage shall be applied between the short-circuited terminals and the metallic balls.</td></tr>
<tr><td>可焊性
Solder ability</td><td>上锡率应大于75%
Lead wire shall be at least 75% covered with a new solder coating.</td><td>将电容器引线浸入含有2 5 % 松香的酒精溶液中， 然后浸入温度为: 230±5℃的金属焊锡（63Sn/37Pb）中 2±0.5秒，注意：电容器本体底面距离锡面约1.5~2mm，
The terminal of capacitor is dipping into a 25% rosin solution of ethanol and then into molten solder(63Sn/37Pb） of 230±5℃ for 2±0.5s. In both cases the depth of dipping is up to about 1.5~2mm from the terminal body.</td></tr>
<tr><td>耐焊接热
Resistance to Soldering Heat</td><td><table><tr><th>项目
Item</th><th>ΔC/C≤</th></tr><tr><td>Class I</td><td>± 2.5% or ± 0.25pF</td></tr><tr><td>B</td><td>±10%</td></tr><tr><td>E / Y(F)</td><td>±20%</td></tr></table>外观无可见损伤
No significant abnormality in appearance.</td><td>锡温：260 ±5℃ 时间： 10 ±1s
Solder temperature: 260 ±5℃ Duration: 10 ±1s
浸入条件：将电容器插入厚度为1.6mm，孔径为1.0mm的PC板。
Immersed conditions: Inserted into the PC board (with t=1.6mm, hole=1.0mm diameter)
对于I类介质，试验后，应在标准条件下恢复4~24小时后才测试。
Recovery: For class I, 4 to 24 hours of recovery under the standard condition after test.
对于II类介质，在试验前应先进行如下预处理： 150(-10,+0) ℃，1小时，接着在标准条件下恢复48 ±4 小时。
Preconditioning（Class II）: 1 hour of preconditioning at 150(-10,+0) ℃, followed by 48 ±4 hours of recovery under the standard condition.
恢复：对于II类介质试验后，应在标准条件下恢复48 ±4小时后才测试。
Recovery（ Class II） : 48 ±4 hours of recovery under the standard condition after test.</td></tr>
</table>

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<tr><th>项目
Item</th><th>技术要求
Technical Specification</th><th>测试方法和备注
Test Method and Remarks</th></tr>
<tr><td rowspan="4">高温负荷
High Temperatu-re Loading Test</td><td>外观无可见损伤
No significant abnormality in appearance.</td><td>温度Temperature</td></tr>
<tr><td>容量变化Capacitance Change:
I类介质Class I:
≤ ±3% or ±0.3pF
取较大值Whichever is larger.
II类介质Class II:
B:≤ ±12.5%
E / F(Y): ≤ ±30%</td><td><table><tr><td>CG（N）/</td><td>X7R</td><td>Y5V</td><td>Z5U</td></tr><tr><td colspan="2">125(-0,+3)℃</td><td colspan="2">85(-0,+3) ℃</td></tr></table></td></tr>
<tr><td>损耗角正切Dissipation Factor:
I类介质：小于原始值的两倍
Class I：Not more than twice of initial value.
II类介质Class II：
B: ≤ 5.0%
E / F(Y):
≤12.5% ($C_R \leq 0.1uF$)
≤15.0%(1uF ＞ C_R ＞0.1uF)
≤17.5% ($C_R \geq 1uF$)</td><td rowspan="2">电压：1.5倍额定电压
Applied voltage: 1.5 times rated voltage
充放电流不超过50mA
The charge/ discharge current is less than 50mA.
时间：1000（-0，+48）小时
Duration: 1000（-0，+48）hours
恢复时间：
Recovery Time：
I类介质：24 ±2小时，
Class I Dielectric : 24 ±2 hours
II类介质；48 ±4小时
Class II Dielectric: 48 ±4 hours</td></tr>
<tr><td>绝缘电阻Insulation Resistance:
≥ 500MΩ or 25 Ω.F
取较小值Whichever is smaller.</td></tr>
<tr><td>耐溶剂性
Solvent Resistance</td><td>外观无可见损伤或异常,标记清晰。
No defects or abnormalities in appearance and legible marking.</td><td>溶剂温度：23±5℃
Solvent temperature:
将样品浸在溶剂中1分钟，用脱脂棉在样品有标志部位刷10次，重复3次.
put the sample into solvent 1 Min, and then take it out and brush sample’s notation area 10 times with pledget , repeat 3 times.</td></tr>
</table>

以上所示“标准条件”解释如下：

温度：5~35℃， 湿度：45~85%， 气压：86~106kPa

* Note on standard condition: " standard condition " referred to herein should be defined as follows:

5 to 35℃ of temperature, 45 to 75% of relative humidity, and 86 to 106kPa of atmospheric pressure.

若测试结果有争议时，仲裁试验用标准大气条件为：

温度：25±1℃， 相对湿度：48%~52%， 气压：86~106kPa

* When there are questions concerning measurement results:

In order to provide correlation data, the test should be conducted under a condition of 25 degrees plus/minus 1 centigrade of temperature, 48% through 52% of relative humidity and 86 through 106 kPa of atmospheric pressure.