规 格 承 认 书

SPECIFICATION SHEET FOR APPROVE

CUSTOMER: QISDA

部品名称 PARTS NAME	安规瓷介电容器 SAFETY STANDARD RECOGNIZED CERAMIC CAPACITORS
客户部品号 CLIENT PART No.	OH.10216.35W OH.22216.35W OH.33216.35W
部品型号 PARTS TYPE	CT7-Y1-250V-10e-E-102M 10UH CT7-Y1-250V-12e-E-222M 10UH CT7-Y1-250V-13e-E-332M 10UH
额定电压 RATED VOLTAGE	Y1 250V~
万盛版本号 WANSHENG Ver. No.	D

客户承认栏:
ACCEPTED BY:

批准 ACCEPTED BY	审核 CHECKED BY	拟制 DESIGNED	
		左桂芳	昆山万盛电子有限公司 KUNSHAN WANSHENG ELECTRONIC CO., LTD

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客户料号与万盛规格型号对照一览表
PRODUCT LIST

No.	客户料号 CUSTOMER PN	万盛规格型号 WANSHENG SPECIFICATION	电容量 CAP.	容量允差 CAP. TOL.	温度特性 T.C.	尺寸（单位：mm） DIMENSION (UNIT: mm)					本体颜色 BODY CILOUR	引线形式 LEAD STYLE
						D max.	T max.	F	d	L		
1	OH.10216.35W	CT7-Y1-250V-10e-E-102M 10UH	1000 pF	±20%	E	10.0	6.0	10.0±0.8	0.6±0.06	/	蓝色 BLUE	Y 脚编带 10e-U
2	OH.22216.35W	CT7-Y1-250V-12e-E-222M 10UH	2200 pF	±20%	E	12.5	6.0	10.0±0.8	0.6±0.06	/	蓝色 BLUE	Y 脚编带 10e-U
3	OH.33216.35W	CT7-Y1-250V-13e-E-332M 10UH	3300 pF	±20%	E	13.0	6.0	10.0±0.8	0.6±0.06	/	蓝色 BLUE	Y 脚编带 10e-U

更 改 记 录 表
RECORD OF REVISION

版本 Edition	修订日期 Update date	主要更改内容 Main update item	更改者 Design	确认人 Approve
A	2014.05.16	新版发行 Issue new edition	程传波	石怡
B	2014.11.18	1.QISDA要求将编带尺寸P0=12.7mm变更为P0=15.0mm; Update taping dimension P0: from 12.7mm to 15.0mm 2.增加定义KINK角度，详见P12. Define taping dimension: α, See P12	房双杰	石怡
C	2021.03.05	修改 Y1 332M 直径尺寸，由 14.0mm max 变更为 13.0mm max Modify Y1 332M diameter size from 14.0mm Max to 13.0mm Max	房双杰	石怡
D	2023.04.20	本体标识中北欧四国认证符号变更为欧洲 ENEC 认证符号,见 P12 页 Change D,N,FI,S marking to ENEC marking, see P12	左桂芳	石怡

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一：万盛瓷介电容器编码说明：

1: HOW TO ORDER CERAMIC CAPACITOR:

Example: CT7-Y1-250V-10 e- E-102 M 1 0 U H
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

①瓷介电容器类型:
Ceramic capacitor type:

代号 Code	产品名称 Product type
CT7	安规瓷介电容器 Safety standard recognized ceramic capacitor

②额定电压:
Rated voltage:

代号 Code	额定电压 Rated voltage
Y1 250V	X1 400V~,Y1 250V~ (原 AC400V)

③产品直径:
Product diameter:

代号 Code	Dmax (mm)
10	10.0
12	12.5
13	13.0

④引线形式:
Lead style:

代号 Code	脚型 Shape
e	直引线 Y 型脚 Straight "Y" shape

⑤温度特性:
Temperature characteristic:

代号 Code	温度特性 TC
E	Y5U (+22~-56%)

⑥标称静电容量:
Rated capacitance:

代号 Code	电容量 Capacitance
102	1000 pF
222	2200 pF
•••	•••

⑦静电容量允许偏差:
Capacitance tolerance:

代号 Code	容量偏差 Cap. Tol.
M	±20%

⑧引线间距:
Lead spacing(pitch):

代号 Code	间距 Spacing (mm)
1	10.0

⑨引线长度:
Lead length:

代号 Code	长度 Length
0	编带 Taping

⑩包装类型:
Packing style:

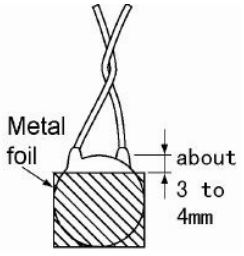
代号 Code	包装种类 Packing style
U	P=15.0mm 编带品 Taping for P=15.0mm

⑪产品环保类型:
Product environmental style:

代号 Code	环保类型 Style
H	RoHS + HF product

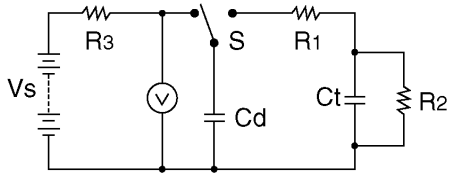
二：产品性能：

2: PRODUCT CAPABILITY:

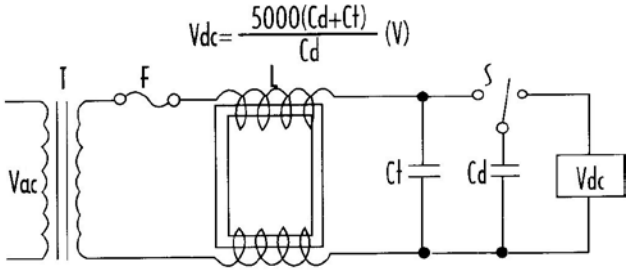
<table>
<tr><th>No.</th><th colspan="2">项 目
Item</th><th>试验结果（规格值）
Standard</th><th>试 验 条 件
Test condition</th></tr>
<tr><td>1</td><td colspan="2">使用温度范围
Operating temperature range</td><td>-40 ~+125℃</td><td>可在此温度范围内连续使用
Can use in this temperature range for continuum</td></tr>
<tr><td>2</td><td colspan="2">外观尺寸检查
Appearance and dimension</td><td>元件表面清洁，无异物附着，标志清晰，无可见损伤，尺寸符合规定要求
Clean surface, marking shall be legible, no visible damage. Dimension according to ordain requirement</td><td>目测产品外观、标志，尺寸用游标卡尺检查。
Visual check, vernier caliper</td></tr>
<tr><td>3</td><td colspan="2">温度特性
Temperature characteristic</td><td>-56%~+22%</td><td>在下列阶段温度下测量容量值：
Capacitance is measured under the under-temperature
TC(%)=【(C_T-C_{T3})/ C_{T3}】*100%
<table>
<tr><th>阶段
Step</th><th>温度 Temperature (℃)</th></tr>
<tr><td>T1</td><td>20±2</td></tr>
<tr><td>T2</td><td>-25±2</td></tr>
<tr><td>T3</td><td>20±2</td></tr>
<tr><td>T4</td><td>85±2</td></tr>
</table></td></tr>
<tr><td>4</td><td colspan="2">静电容量 (C)
Rated capacitance</td><td>在允许的偏差等级范围内
To be within the specified tolerance.</td><td rowspan="2">测量频率：f = 1KHz±20%，测量电压：1±0.2Vrms。
To be measured at 1KHz±20%, 1±0.2 Vrms.</td></tr>
<tr><td>5</td><td colspan="2">损耗角正切(tgδ)
Dissipation Factor(tgδ)</td><td>tgδ≤0.025</td></tr>
<tr><td rowspan="2">6</td><td rowspan="2">耐电压 (UT)
Withstand voltage</td><td>端子之间
Between Terminals</td><td>无击穿飞弧
No failure or no arcing

</td><td colspan="2">
<table>
<tr><th>类别
Type</th><th>测试电压
Test voltage (UT)</th><th>测试时间
Test time</th><th>充放电流
Charge or discharge current</th></tr>
<tr><td>X1 400V~, Y1 250V~</td><td>AC4000V</td><td>60s</td><td>≤0.05A</td></tr>
</table></td></tr>
<tr><td>端子与外壳之间
Between Terminals and enclosure</td><td colspan="2">使用金属小球法
Using metallic small ball method.
<table>
<tr><th>类别
Type</th><th>测试电压
Test voltage (UT)</th><th>测试时间
Test time</th><th>充放电流
Charge or discharge current</th></tr>
<tr><td>X1 400V~, Y1 250V~</td><td>AC4000V</td><td>60s</td><td>≤0.05A</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>No.</th><th colspan="2">项 目
Item</th><th>试验结果（规格值）
Standard</th><th>试 验 条 件
Test condition</th></tr>
<tr><td>7</td><td colspan="2">绝缘电阻（IR）
Insulation Resistance</td><td>IR≥10000MΩ</td><td><table><tr><th>类别
Type</th><th>测试电压
Test voltage (UT)</th><th>测试时间
Test time</th><th>充放电流
Charge or discharge current</th></tr><tr><td>X1 400V~,
Y1 250V~</td><td>DC500V</td><td>1min±5s</td><td>≤0.05A</td></tr></table></td></tr>
<tr><td rowspan="4">8</td><td rowspan="4">耐湿性
Humidity Resistance Test</td><td>外观检查
Appearance</td><td>无可见损伤，标志清晰
No remarkable damage, clear marking</td><td rowspan="4"><table><tr><td>温度
Temperature</td><td>40±2℃</td></tr><tr><td>相对湿度
Relative humidity</td><td>90%~95%</td></tr><tr><td>时间
Test time</td><td>500(+24/-0)h</td></tr></table>试验后：标况下恢复 24 ±2 小时测量。
After test: Capacitors shall be measured after leaving it under ambient Condition for 24 ±2h</td></tr>
<tr><td>容量变化率
Capacitance change</td><td>±20% max</td></tr>
<tr><td>损耗角正切
Dissipation Factor (tgδ)</td><td>0.050 max</td></tr>
<tr><td>绝缘电阻
Insulation Resistance</td><td>1000MΩ min</td></tr>
<tr><td rowspan="4">9</td><td rowspan="4">耐湿负荷
Humidity Resistance Load Test</td><td>外观检查
Appearance</td><td>无可见损伤，标志清晰
No remarkable damage, clear marking</td><td rowspan="4"><table><tr><td>温度
Temperature</td><td>40±2℃</td></tr><tr><td>相对湿度
Relative humidity</td><td>90%~95%</td></tr><tr><td>电压
Apply voltage</td><td>AC400V</td></tr><tr><td>时间
Test time</td><td>500(+24/-0)h</td></tr></table>试验后：标况下恢复 24 ±2 小时测量。
After test: Capacitors shall be measured after leaving it under ambient Condition for 24 ±2h</td></tr>
<tr><td>容量变化率
Capacitance change</td><td>±20% max</td></tr>
<tr><td>损耗角正切
Dissipation Factor (tgδ)</td><td>0.050 max</td></tr>
<tr><td>绝缘电阻
Insulation Resistance</td><td>500MΩ min</td></tr>
<tr><td rowspan="4">10</td><td rowspan="4">寿命试验
(耐久性试验)
Life test</td><td>外观检查
Appearance</td><td>无可见损伤，标志清晰
No remarkable damage, clear marking</td><td rowspan="4"><table><tr><td>温度 Temperature</td><td>125±2℃</td></tr><tr><td>电压 Apply voltage</td><td>AC800V</td></tr><tr><td>时间 Test time</td><td>1000(+48/-0)h</td></tr></table>每隔1小时将电压升高到1600V(有效值)，持续时间 0.1s，如此循环。
Throughout the test, the capacitors are subjected to an AC800V alternating voltage of mains frequency, except that once each hour the voltage is increased to 1600Vrms for 0.1sec.
试验后：标况下恢复 24 ±2 小时测量。
After test: Capacitors shall be measured after leaving it under ambient Condition for 24 ±2h</td></tr>
<tr><td>容量变化率
Capacitance change</td><td>±20% max</td></tr>
<tr><td>损耗角正切
Dissipation Factor (tgδ)</td><td>0.050 max</td></tr>
<tr><td>绝缘电阻
Insulation Resistance</td><td>1000MΩ min</td></tr>
</table>

<table>
<tr><th>No.</th><th colspan="2">项 目
Item</th><th>试验结果（规格值）
Standard</th><th>试 验 条 件
Test condition</th></tr>
<tr><td rowspan="2">11</td><td rowspan="2">温度快速变化（温度循环）
Temperature cycling</td><td>外观检查
Appearance</td><td>无可见损伤，标志清晰
No remarkable damage, clear marking</td><td rowspan="2">以下步骤为 1 个循环，循环 5 次
Temperature cycle shall be carried out 5 times consecutively
<table><tr><th>步骤
Step</th><th>温度（℃）
Temperature</th><th>时间（分）
Duration (min)</th></tr><tr><td>1</td><td>-40±2</td><td>30</td></tr><tr><td>2</td><td>25±2</td><td>2</td></tr><tr><td>3</td><td>125±2</td><td>30</td></tr><tr><td>4</td><td>25±2</td><td>2</td></tr></table></td></tr>
<tr><td>容量变化率
Capacitance change</td><td>±20% max</td></tr>
<tr><td rowspan="2">12</td><td rowspan="2">引出端强度
Strength of Terminals</td><td>拉力试验
Tensile Strength</td><td>无可见损伤
Lead wire shall not be disconnected.</td><td>标称横截面面积相对的直径（d）:
Lead diameter (d):
<table><tr><th>d</th><th>拉力
Load</th><th>时间
Duration</th></tr><tr><td>0.5<d≤0.8</td><td>10N</td><td>10±1S</td></tr></table></td></tr>
<tr><td>弯曲试验
Bending Strength</td><td>无可见损伤
Lead wire shall not be disconnected.</td><td>在每个方向上连续进行两次弯曲 90°，拉力 F=5 牛。
The body shall be rotated 90° from the lead egress; then, 180° in the opposite direction, and then back to the original position. Repeat once. F=5N</td></tr>
<tr><td>13</td><td>振动试验
Vibration Resistance</td><td>外观检查
Appearance</td><td>无可见损伤，标志清晰
No remarkable damage, clear marking</td><td>频率：10-55-10Hz；振幅：1.5mm；方向：上下、左右、前后 3 方向；时间：各 2 小时；状态：正弦波振动；
Frequency: 10-55-10Hz; Swing: 1.5mm; Shall be given in XYZ three directions for 2 hours in each direction. (total 6 hours)
State: sine wave vibration</td></tr>
<tr><td>14</td><td colspan="2">可焊性
Solderability</td><td>引线沾锡面积大于浸锡面积的 90%
At least 90 percent of peripheral surface is covered with new solder to the point immersed</td><td>不预先干燥，采用焊槽法，引线浸助焊剂插入 t=1.6mm，孔径 Φ=1.0mm 电路板中
The lead wire for a capacitor shall be insert into PCB(t=1.6mm) holes(Φ=1.0mm), then dipped into soldering flux for 3s max., and then dipped into molten solder of 235±5℃ for 2±0.5s.
<table><tr><th>焊锡温度
Soldering Temperature</th><th>浸锡时间
Dipping Time</th></tr><tr><td>235±5℃</td><td>2±0.5s</td></tr></table></td></tr>
</table>

<table>
<tr><th>No.</th><th colspan="2">项 目
Item</th><th>试验结果（规格值）
Standard</th><th>试 验 条 件
Test condition</th></tr>
<tr><td rowspan="4">15</td><td rowspan="4">耐焊接热
Resistance to soldering heart</td><td>外观检查
Appearance</td><td>无可见损伤，标志清晰
No remarkable damage, clear marking</td><td rowspan="4">不预先干燥，采用焊槽法，引线在焊锡料中浸渍 10±0.5S(260±2℃) 或 3.5±0.5s (350±10℃)，插入 t=1.6mm，孔径Φ=1.0mm 电路板中
Lead are insert into PCB(t=1.6mm) holes(Φ=1.0mm) ,then dipped into molten solder of 260±2℃ for 10±0.5s(or 350±10℃ for 3.5±0.5s). Flux shall be used
<table><tr><td>焊锡温度
Soldering Temperature</td><td>260±2℃</td><td>350±10℃</td></tr><tr><td>焊锡时间
Dipping Time</td><td>10±0.5s</td><td>3.5±0.5s</td></tr></table>试验后：标况下恢复 24 ±2 小时测量。
After test: Capacitors shall be measured after leaving it under ambient Condition for 24 ±2h</td></tr>
<tr><td>容量变化率
Capacitance change</td><td>±15% max</td></tr>
<tr><td>绝缘电阻
Insulation Resistance</td><td>在初期规格范围之内
In initial range</td></tr>
<tr><td>耐电压
Withstand voltage</td><td>在初期规格范围之内
In initial range</td></tr>
<tr><td rowspan="4">16</td><td rowspan="4">充放电试验 I
Charge and discharge I</td><td>外观检查
Appearance</td><td>无可见损伤，标志清晰
No remarkable damage, clear marking</td><td rowspan="4">如图，由 Cd 经 Vs 充电后向被测电容 Ct 放电，充放电时间为 5 秒，一共 50 次。
As in figure, discharge is made 50 times at 5 sec. intervals from the capacitor (Cd) charged at DC voltage of specified.


Ct:被测电容 Capacitor under test
S:高压开关 High-voltage switch
R1:1000Ω±10%
R2:100MΩ
R3:浪涌电阻 Surge resistance
Cd:1nF
Vs:10KVDC</td></tr>
<tr><td>绝缘电阻
Insulation Resistance</td><td>1000MΩ min</td></tr>
<tr><td>耐电压
Withstand voltage</td><td>无击穿飞弧
No failure or no arcing</td></tr>
</table>

<table>
<tr><th>No.</th><th colspan="2">项 目
Item</th><th>试验结果（规格值）
Standard</th><th>试 验 条 件
Test condition</th></tr>
<tr><td>17</td><td>充放电试验 II
Charge and discharge II</td><td>耐电压
Withstand voltage</td><td>无击穿飞弧，且试验完成后包裹在电容器上的单层薄布不会被点燃
No failure or no arcing , the gauze shall not glow or flame.</td><td>把单层的干布包裹在被测电容器上，用可变直流电压源：Vdc=5000*(Cd+Ct)/Cd 对 Ct 进行四次试验，每个电容充电 5 秒/次，之后将 240V，50/60Hz 电压加在被测电容器上持续 30 秒。
The capacitor wrapped in a layer of cheesecloth shall withstand four discharges from a dump capacitor charged to a voltage value that when discharged places a voltage of Vdc across the capacitor under test, with an interval of 5 seconds between successive discharges. A voltage of 240Vrms having frequency of 50/60Hz is applied across the capacitor under test. After the 4th discharge the voltage applied is maintained for 30 sec.


Vdc：可变直流电压源 Variable direct current voltage source；
S：高压开关 High-voltage switch；
L：扼流圈 choke coil 3mH，0.03Ω；
F ：保险丝 Plug fuse 30A，250V；
Vac：240V，50/60Hz，30A；
Ct：被测电容器 Capacitor under test；
Cd：冲击电容器 Dump capacitor
<table>
<tr><td>Capacitance of Ct</td><td>0~0.005uF</td><td>0.0051uF~0.05uF</td></tr>
<tr><td>Capacitance of Cd</td><td>0.005uF</td><td>0.05uF</td></tr>
<tr><td>Dissipation Factor of Cd</td><td>0.5% max</td><td>0.5% max</td></tr>
</table></td></tr>
</table>

注：上述测试均在标况下进行，“标况”解释如下：
Note: Unless otherwise specified, test and measurement shall be made at the standard conditions:

常规温度 Ordinary temperature	常规湿度 Ordinary humidity	常规气压 Ordinary atmospheric pressure
15 ~ 35℃	45 ~ 85%	86 ~ 106kPa。

当测试结果有争议时，仲裁标况为：
If the validity of measurement value determined under the standard condition is questioned or if there occurs a special need of evaluating the test results, capacitors shall be tested and measured at the determinant ambient conditions:

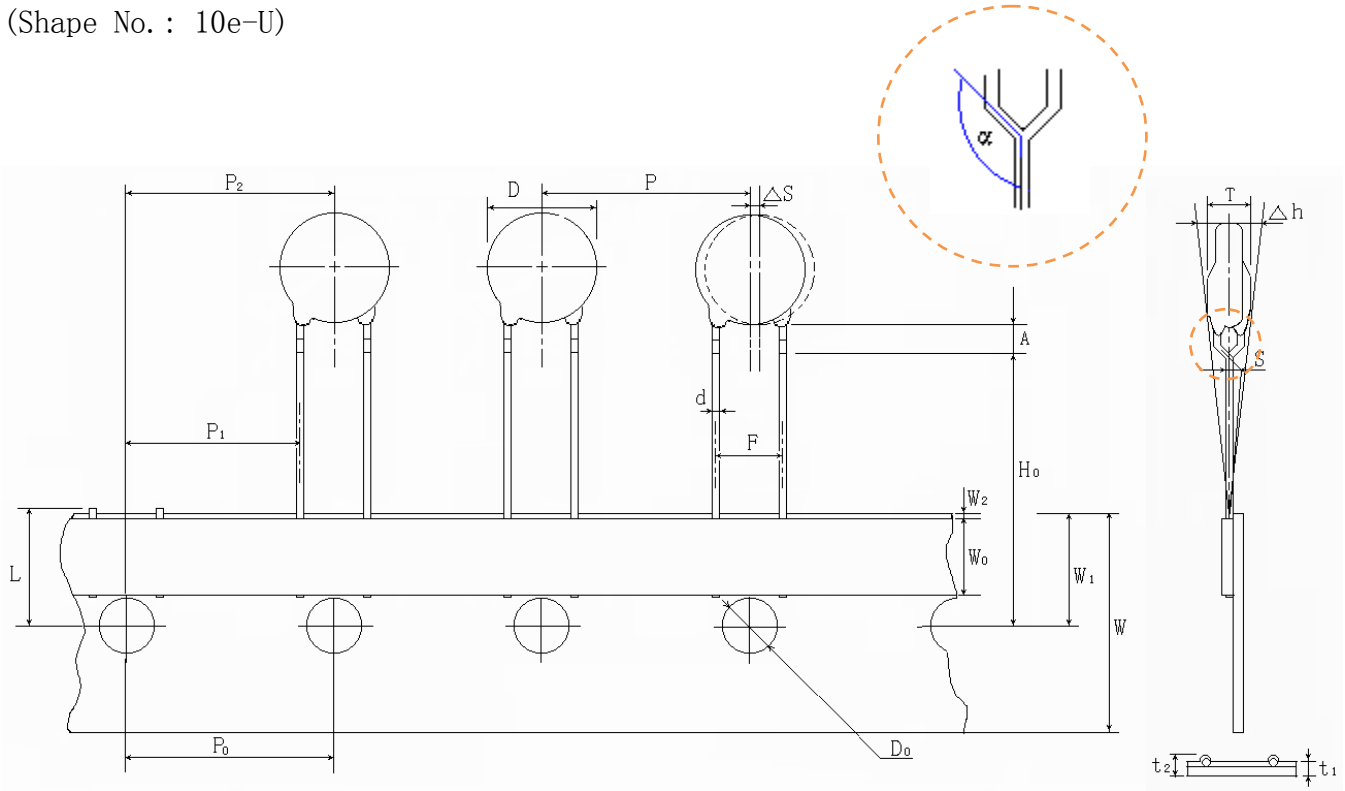
温度 Temperature	相对湿度 Humidity	气压 Atmospheric pressure
21±1℃	48 ~ 52%	86 ~ 106kPa。

三：外形尺寸：

3: FIGURE AND DIMENSION:

引线间距 F=10mm，零件间距 P=15.0mm，引线形式为 e 式编带品（形状图：10e-U）

Lead pitch: F=10mm, component pitch: P=15.0mm, shape e taping figure: (Shape No.: 10e-U)

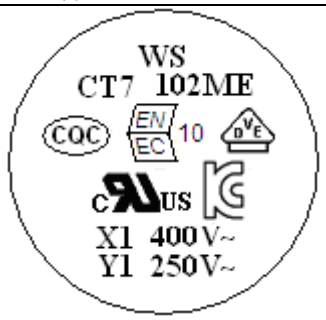


单位 Unit: mm

符 号 Code	尺 寸 Dimension	公 差 Tolerance
P	15.0	±1.0
P0	15.0	±0.3
P1	5.0	±1.0
P2	15.0	±1.5
d	Φ0.6	±0.06
F	10.0	±0.8
Δh	0	±2.0
W	18.0	+1.0/-0.5
W0	8.0	+1.0/-0.5
A	4.0	max.
S	2.0	max.

符 号 Code	尺 寸 Dimension	公 差 Tolerance
W1	9.0	±0.5
W2	0~1.5	
H0	18.0	+2.0/-0
D0	Φ4.0	+0.6/-0.2
t1	0.6	±0.3
t2	1.3	±0.3
L	11.0	+0/-1.0
T	See P2 “PRODUCT LIST”	
D	See P2 “PRODUCT LIST”	
ΔS	0	±1.0
α	90~105°	

四：标志：
4: MARKING (EXAMPLE) :

项目 Marking items		代码 Code	标识 Marking
批准标志	Approve marking	如下表 View next sheet	
商标	Trade mark	WS	
产品型号	Product style	CT7	
标称静电容量	Rated Cap.	102	
容量等级	Cap. Tol.	M	
温度特性	Temp. Char.	E	
安规类别	Safety type	X1 400V~, Y1 250V~	

Safety certification approve marking and Recognized No.:

Safety Standard	Standard No.	Rated Vol.	Marking	Recognized No.
VDE	IEC 60384-14:2013 IEC60384-14:2013/AMD1:2016 DIN EN 60384-14(VDE0565-1-1):2014-04;EN 60384-14:2013-08	X1 400V~,Y1 250V~		40012143
ENEC	DIN EN 60384-14/A1(VDE0565-1-1/A1):2017-04;EN 60384-14:2013/A1:2016	X1 400V~,Y1 250V~		40012143
CQC	GB/T6346.14-2015	X1 400V~,Y1 250V~		CQC04001011063
UL/CUL	UL 60384-14 CSA E60384-14	X1 400V~,Y1 250V~		E249006
KC	K60384-14	X1 400V~, Y1 250V~		SU03024-6001B

五：包装：
5:PACKING:

5.1 包装箱应该牢固、可靠，最高堆码层数为 8 层，保证内装产品不因受挤压而变形。
Packing box: fastness ,trustiness, at the highest layer is 8.

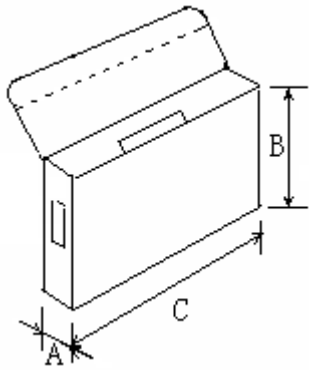
5.2 采用包装 Packing style: ■编带盒装 Taping

5.3 包装要求：
Packing requirement:

5.3.1 包装数量要求按下表执行：
Packing quantity requirement:

	盒装数量 Quantity for inner box	箱装数量 Quantity for out box
机插件（编带） Taping	1000 (PCS)	10000 (PCS)

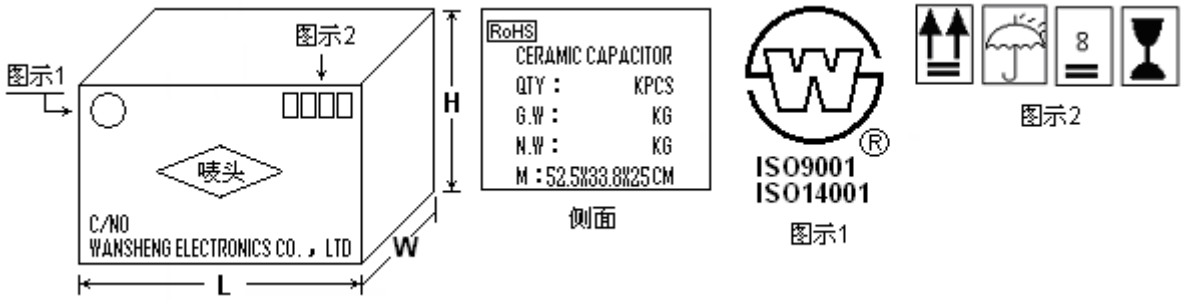
5.3.2 以盒装方式包装瓷介电容器，包装盒的外形尺寸符合下表尺寸要求：(单位：mm)
The requirement of inner packing box: (Unit: mm)



	A	B	C
标准装 Standard packing box	46±3	255±3	335±3

5.3.3.3 一定数量的包装盒集装成一整箱，并用胶带粘贴，防止运输损坏和生产车间使用造成混料。
One out box is maked up of several inner boxes, and sealed with adhesive tape.

5.4.4 大包装箱外形尺寸符合下图、下表的要求：(单位：mm)
The requirement of out packing box: (Unit: mm)



	L (mm)	W (mm)	H (mm)
编带外包装箱 Out box for taping	525	338	275

六：运输要求：
6: TRANSPORT CONDITION:

公路、铁路、航空、海运视情况而定，在运输过程中避免雨雪侵蚀。

Highway, railway, aviation, shipping which is applicable, avoid rain and snow in transportation.

七：瓷介电容器使用注意事项：
7: USE CAUTIONS & NOTICES:

7.1 储存条件:

STORAGE CONDITION:

环境温度 Ambient temperature: -25℃——+50℃

相对湿度 Relative humidity: 40℃, 90% max.

气　　压 Atmospheric pressure: 40——106KPA

储存环境不应有酸性或碱性或其他化学腐蚀气体，且不允许阳光直射。

Avoid acidity or alkalescence or another chemical corrode gas, avoid direct sunshine.

7.2 使用条件:

USE CONDITION:

温度范围 Temperature range: 见产品性能表 See product capability sheet

相对湿度 Relative humidity: 40℃, 90% max.

气　　压 Atmospheric pressure: 40——106KPA

八：附件：
8: ATTCHMENT:



万盛 RoHS 标识（WANSHENG RoHS Mark）



万盛无卤标识（WANSHENG HF Mark）