StrongFirst

SPEC NO.: CR-008HDIP

Specification

TO:STE527
Model Name: Ceramic Resonator
PART NO: ZTTCE8.00MG
CUSTOMER PART NO.:

Approval sheet:

Approved	Yes
	No.
Customer's comments are welcomed here. Pls return this copy as a certificate of your approval by Fax. Approved By Date: ______________	

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History Record

Date	**Part No.**	**SPEC No.**	**Discription.**	**Remarks.**
RoHS Compliant Lead free Lead-free soldering	ISO9001:2000 ISO14001:2004	**Approved by**	**Check by**	**Design by**
		May-15-2007	**May-10-2005**	**Jan-16-1999**
Reversions	**Total Page**	Xu gang dong	Liu jun	Wang hon
CR-012HDIP				

1. SCOPE

This specification shall cover the characteristics of the ceramic resonator with STRONG P/N: ZTTCE8.00MG

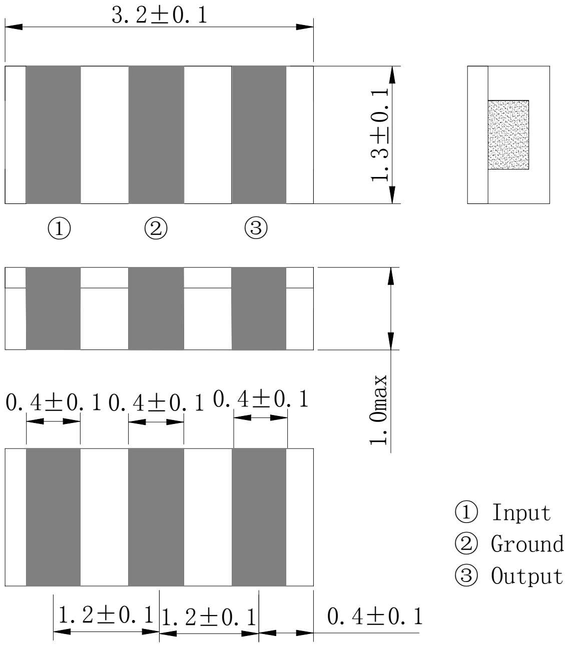
2. OUTLINE DIMENSIONS AND MARK

2.1 Appearance: No visible damage and dirt.

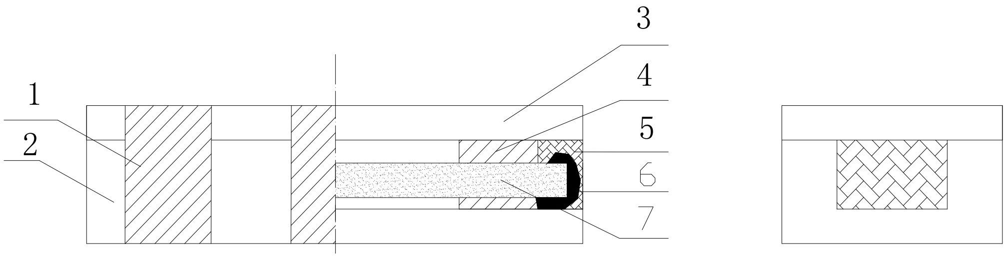
2.2 Construction: SMD ceramic packaging.

2.3 The products conform to the RoHS directive and national environment protection law.

2.4 Dimensions and mark



3. STRUCTURE



NO.	Components	Materials
1	Outer Electrodes	Top and Bottom Electrodes Ag+Ni(under plating)+Sn(over plating) Side Electrodes Ni+Cu+Ag(under plating)+Sn(over plating)

2	Ceramic Box	Insulation Box
3	Cover	Dielectric Material
4	Inner Electrodes	Ag
5	Glue	Epoxy Resin
6	Conductive Adhesive	Ag+Epoxy Resin
7	Ceramic Element	Piezoelectric Ceramics (PZT)

4．ELECTRICAL SPECIFICATIONS

4.1 RATING

Items	Requirement
Withstanding Voltage (V)	50 (DC，1min)
Insulation Resistance Ri,（MΩ）min.	100 （10V，1min）
Operating temperature	-25℃～+85℃
Storage temperature	-55℃～+85℃
Rating Voltage U_R（V）	6V DC
	15V p-p

4.2 ELECTRICAL SPECIFICATIONS

Items	Requirement
Oscillation Frequency Fosc (MHz)	8.000
Frequency Accuracy (%)	±0.5
Resonant Impedance Ro (Ω)max.	40
Temperature Coefficient of Oscillation Frequency (%) max.	±0.3 (Oscillation Frequency drift，-25℃～+85℃)
Aging Rate （%）max. *	±0.2 （From initial value）

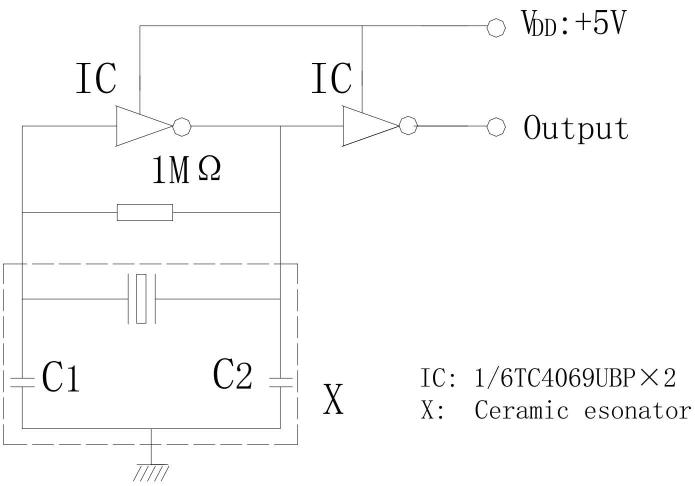
*Components shall be left in a chamber of +85±2℃ for 1000 hours, then measured after leaving in natural condition for 1 hours.

5．TEST

5.1 Test Conditions

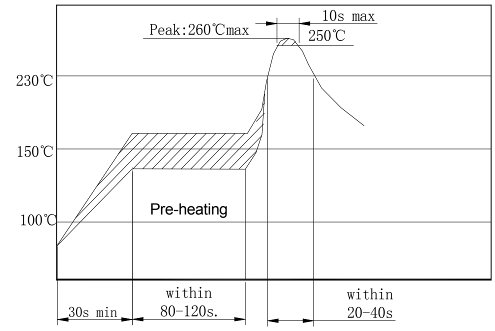
Parts shall be tested under the condition (Temp.: 20±15℃,Humidity ： 65±20% R.H.) unless the standard condition(Temp.: 25±3℃,Humidity ： 65±10% R.H.) is regulated to measure.

5.2 Test Circuit



6 PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

No	Item	Condition of Test	Performance Requirements
6.1	Humidity	Keep the resonator at 40℃±2℃ and 90%-95% RH for 96h. Then Release the resonator into the room Condition for 1h prior to the Measurement.	It shall fulfill the specifications in Table 1.
6.2	High Temperature Exposure	Subject the resonator to 85±2℃ for 96h, then release the resonator into the room conditions for 1h prior to the measurement.	It shall fulfill the specifications in Table 1.
6.3	Low Temperature Exposure	Subject the resonator to -55±2℃ for 96h, then release the resonator into the room conditions for 1h prior to the measurement.	It shall fulfill the specifications in Table 1.
6.4	Temperature Cycling	After temperature cycling of blow table was performed 5 times, resonator shall be measured after being placed in natural conditions for 1h. Temperature / Time –25±3℃ / 30±3 min 85±3℃ / 30±3 min	It shall fulfill the specifications in Table 1.
6.5	Vibration	Subject the resonator to vibration for 2h each in x、 y and z axis With the amplitude of 1.5mm,	It shall fulfill the

		the frequency shall be varied uniformly between the limits of 10 Hz—55Hz.	specifications in Table 1.
6.6	Mechanical Shock	Drop the resonator randomly onto a wooden floor from the height of 100cm 3 times.	It shall fulfill the specifications in Table 1.
6.7	Soldering Test	Passed through the re-flow oven under the following condition and left at room temperature for 1h before measurement.  	It shall fulfill the specifications in Table 1.

（To be continued）

6 PHYSICAL AND ENVIRONMENAL CHARACTERISICS

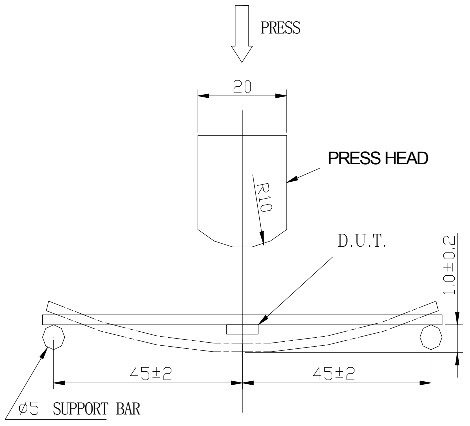
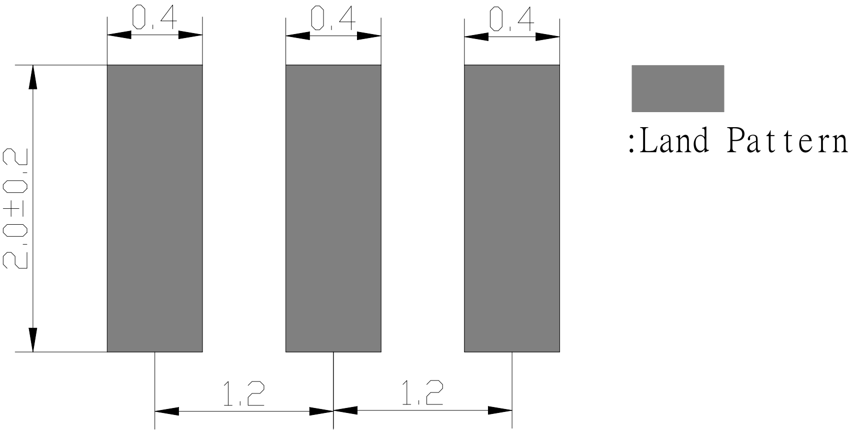
No	Item	Condition of Test	Performance Requirements
6.8	Solder Ability	Dipped in 245 ℃ ±5 ℃ solder bath for 3s±0.5 s with rosin flux (25wt% ethanol solution.)	The terminals shall be at least 95% covered by solder.
6.9	Board Bending	Mount a glass-epoxy board (Width=40mm,thickness=1.6mm),then bend it to 1mm displacement and keep it for 5s. (See the following figure)  	Mechanical damage such as breaks shall not occur.

Table 1

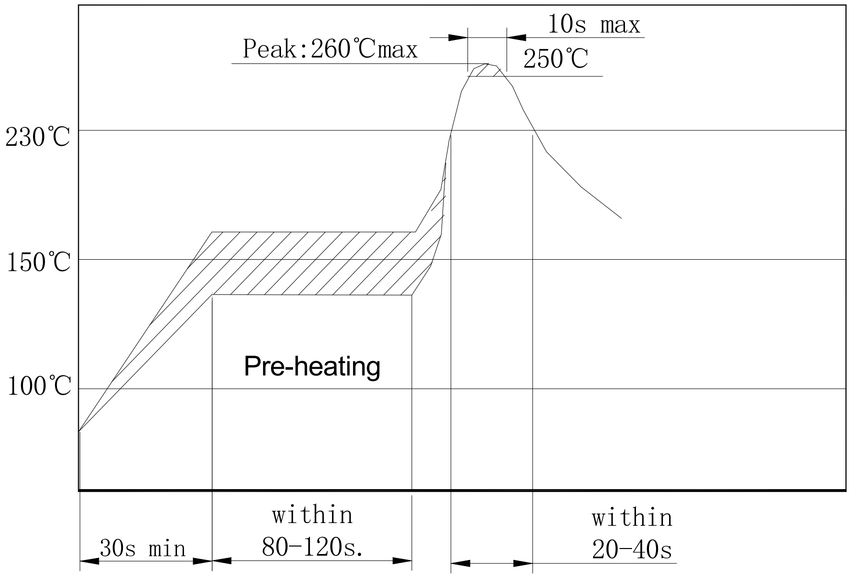
Item	Specification after test
Oscillation Frequency Change △Fosc/Fosc (%) max	±0.3
Resonant Impedance (Ω) max	40
The limits in the above table are referenced to the initial measurements.	

7 RECOMMENDED LAND PATTERN AND REFLOW SOLDERING STANDARD CONDITIONS

7.1Recommended land pattern



7.2Recommended reflow soldering standard conditions

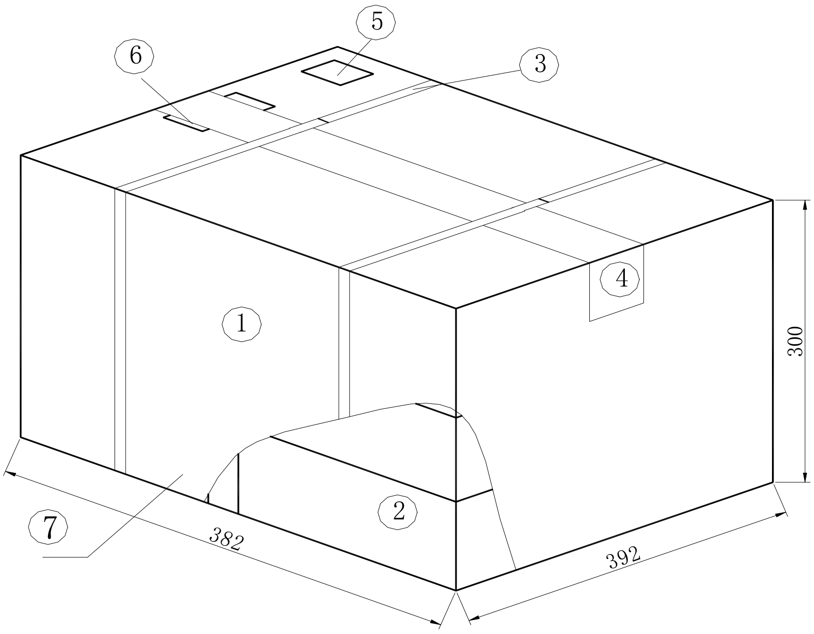


8．PACKAGE

To protect the products in storage and transportation， it is necessary to pack them（outer and inner package）.

8.1 On paper pack, the following requirements are requested.

8.1.1 Dimensions and Mark



NO.	Name	Quantity
①	Package	1
②	Inner Box	12
③	Belt	2.9 m
④	Adhesive tape	1.2 m
⑤	Label	1
⑥	Certificate of approval	1
⑦	Company name ,Address etc.	

8.1.2 Section of package

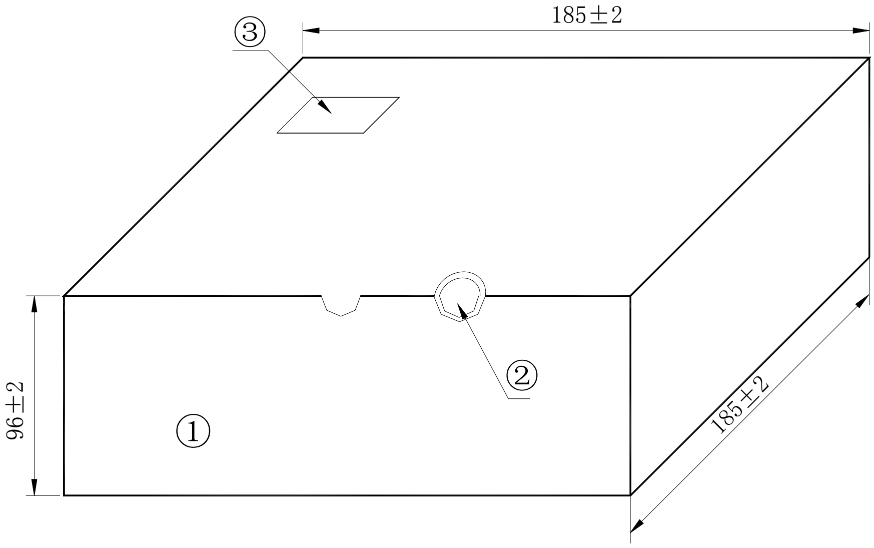
Package is made of corrugated paper with thickness of 0.8cm.Package has 10 inner boxes, each box has 1 reel(each reel for plastic bag)

8.1.3 Quantity of package

Per plastic reel	3000pieces of piezoelectric ceramic part
Per inner box	5 reels
Per package	12 inner boxes

（180000 pieces of piezoelectric ceramic part ）

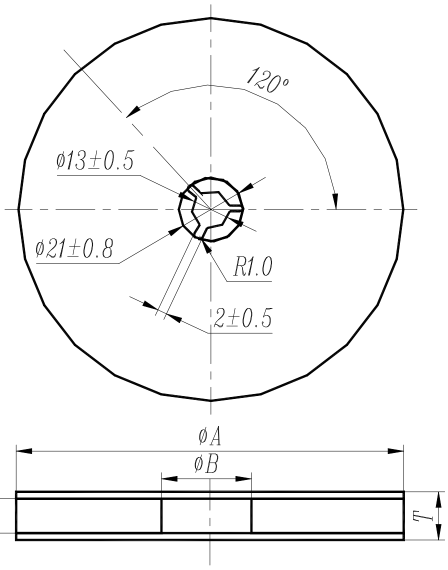
8.1.4 Inner Box Dimensions



NO.	Name	Quantity
①	Inner Box	1
②	QC Label	1
③	Label	1

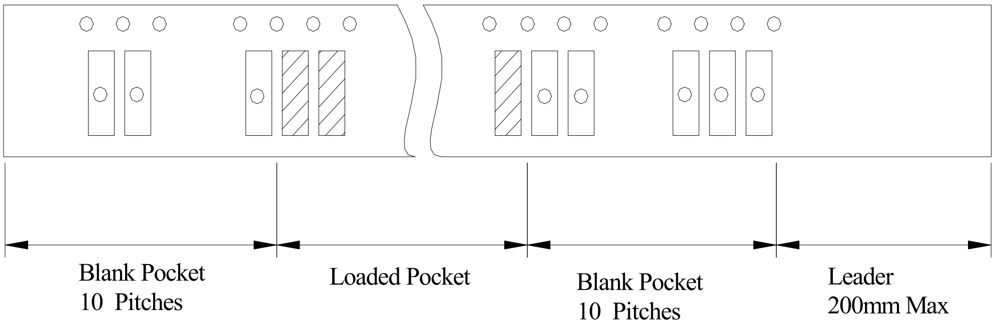
8.2 On reel pack, the following requirements are requested.

8.2.1 Reel Dimensions

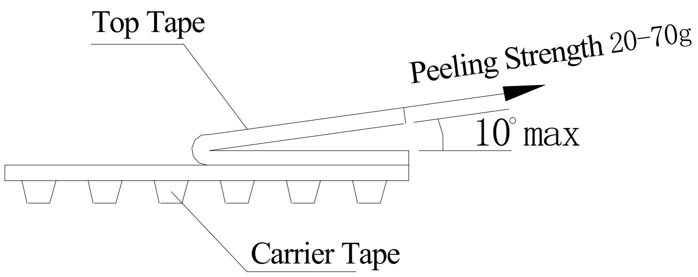


ΦA	ΦB	W	T	Pieces per reel	Carrier tape size
180±3	60min	8.4min	12.4max	3000typ.	8

8.2.3 Packing Method Sketch Map



8.2.4Test Condition Of Peeling Strength



9．OTHER

9.1 Caution

9.1.1 Don’t apply excess mechanical stress to the component and terminals at soldering. Do not use this product with bend.

9.1.2 Do not clean or wash the component for it is not hermetically sealed.

9.1.3 Do not use strong acidity flux， more than 0.2wt% chlorine content， in flow soldering.

9.1.4 Don’t be close to fire.

9.1.5 This specification mentions the quality of the component as a single unit. Please insure the component is thoroughly evaluated in your application circuit

9.1.6 Expire date (Shelf life) of the products is six months after delivery under the conditions of a sealed and an unopened package. Please use the products within six months after delivery. If you store the products for a long time (more than six months), use carefully because the products may be degraded in the solderability or rusty. Please confirm solderability and characteristics for the products regularly.

9.1.7 Please contact us before using the product as automobile electronic component.

9.2 Notice

9.2.1 Please return one of this specification after your signature of acceptance.

9.2.2 When something gets doubtful with this specifications, we shall jointly work to get an agreement.