Shoulder 好达

SHOULDER ELECTRONICS LIMITED

CERAMIC RESONATOR Data Sheet

PRODUCT 产 品: CERAMIC RESONATOR

MODEL NO 型 号: ZTA…MG

PREPARED 编 制: Fengyu

CHECKED 审 核: York

APPROVED 批 准: Lijiating

DATE 日 期: 2008-01-25

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1 SCOPE

This specification shall cover the characteristics of the ceramic resonator 1.84−6.00MHZ.

2 PART NO.

PART NUMBER	CUSTOMER PART NO	SPECIFICATION NO
ZTA…MG		

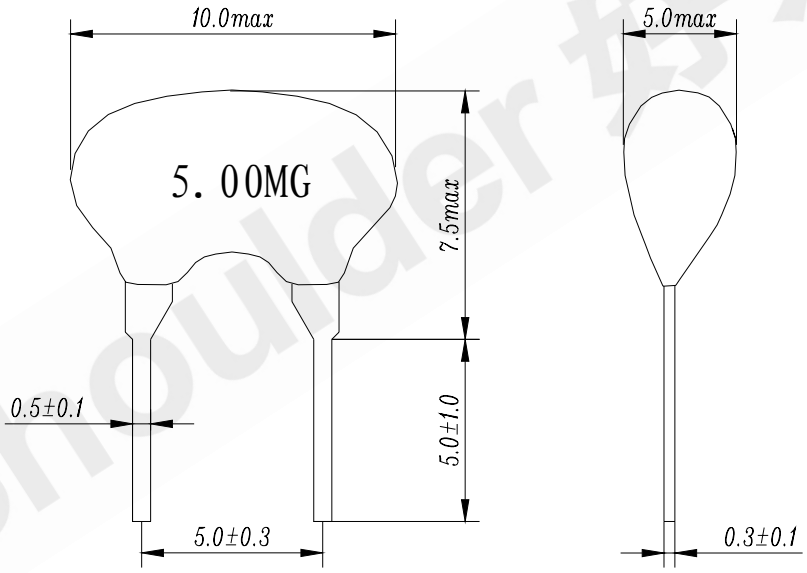
3．OUTLINE DIMENSIONS AND MARK

3.1 Appearance: No visible damage and dirt.

3.2 Construction: Leads are soldered on electrode and body is molded by resin.

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

3.4 Dimensions and mark



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 UR（V）	6V DC
	15V p-p

4.2 ELECTRICAL SPECIFICATIONS

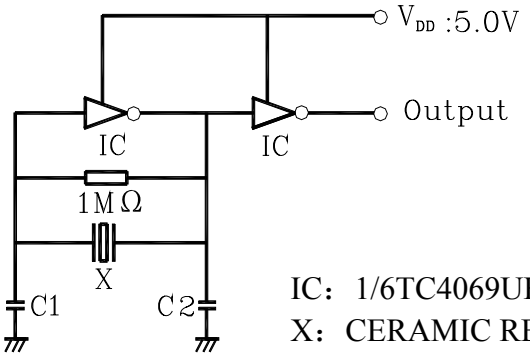
Items	Requirement
Oscillation Frequency Fosc（MHz）	1.84~6.00
Frequency Accuracy （%）	±0.5
Resonant Impedance Ro（Ω）max.	80
Temperature Coefficient of Oscillation Frequency （%） max.	±0.3（Oscillation Frequency drift，-25℃～+85℃）
Aging Rate （%）max.	±0.3 （For Ten Years）

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±2℃,Humidity ： 65±5% R.H.) is regulated to measure.

5.2 Test Circuit



IC：1/6TC4069UBP×2
X：CERAMIC RESONATOR
C1 C2：30pF

6 PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

No.	Item	Condition of Test	Performance Requirement
6.1	Humidity	Subject the resonator at 40±2℃ and 90%-95% R.H. for 500h, resonator shall be measured after being placed in natural conditions for 1h.	It shall fulfill Table 1.
6.2	High Temperature Exposure	Subject the resonator to 85±2℃ for 500h, resonator shall be measured after being placed in natural conditions for 1h.	It shall fulfill Table 1.
6.3	Low Temperature Exposure	Subject the resonator to -25±2℃ for 500h, resonator shall be measured after being placed in natural conditions for 1h.	It shall fulfill 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.	It shall fulfill Table 1.

		Temperature	Time	
		–25±3℃	30±3 min	
		85±3℃	30±3 min	
6.5	Vibration	Subject the resonator to vibration for 2h.Each in x y and z axis with the amplitude of 1.5mm, The frequency shall be varied uniformly between the limits of 10Hz-55Hz-10Hz and then resonator shall be measured.		It shall fulfill Table 1.
6.6	Mechanical Shock	Resonator shall be measured after 3 times random dropping from the height of 1m on concrete floor.		No visible damage and it shall fulfill Table 1.
6.7	Resistance to Soldering Heat	Lead terminals are immersed up to 2 mm from resonator's body in soldering bath of 260℃±5℃ for 10s±1s and then resonator shall be measured after being placed in natural conditions for 1h.		It shall fulfill Table 1.
6.8	Solderability	Lead terminals are immersed up to 2mm from resonator's body in soldering bath of 250℃±5℃ for 3s±0.5s.		More than 95% of the terminal surface of the filter shall be covered with fresh solder.

6. ENVIRONMENTAL TEST

No.	Item	Condition of Test	Performance Requirements
6.9 6.9.1 6.9.2	Terminal Strength Terminal Pulling Terminal Bending	Force of 5N is applied to each lead in axial direction for 10s±1s. When force of 5N is applied to each lead in axial direction,the lead shall folded up 90° from the axial direction and folded back to the axial direction. The speed of folding shall be each 3s.	No visible damage and it shall fulfill Table 1.

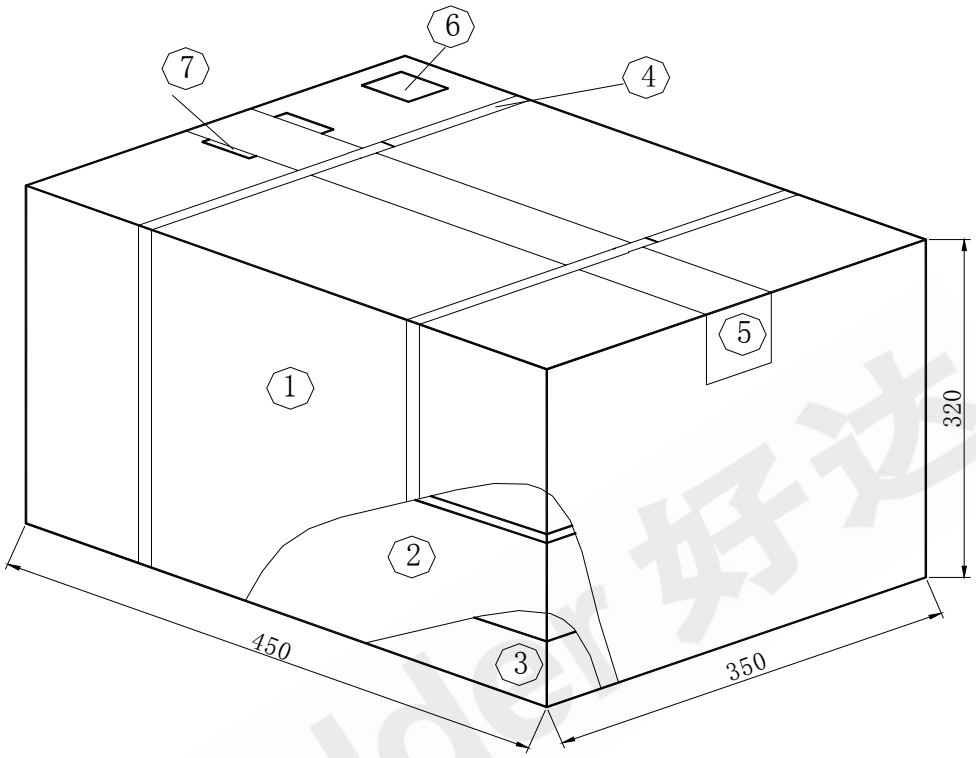
Table 1

Item	Specification after test
Oscillation Frequency Change Δfosc/fosc （%）max.	±0.3
Resonant Impedance Ro（Ω）max.	80
The limits in the above table are referenced to the initial measurements.	

7．PACKAGE

To protect the products in storage and transportation，it is necessary to pack them（outer and inner package）.On paper pack, the following requirements are requested.

7.1 Dimensions and Mark



NO.	Name	Quantity
①	Package	1
②	Box	2
③	Inner Box	40
④	Belt	2.9 m
⑤	Adhesive tape	1.2 m
⑥	Label	1
⑦	Certificate of approval	1

7.2 Section of Package

Package is made of corrugated paper with thickness of 0.8cm.Package has 2 boxes, each has 20 inner boxes.

7.3 Quantity of Package

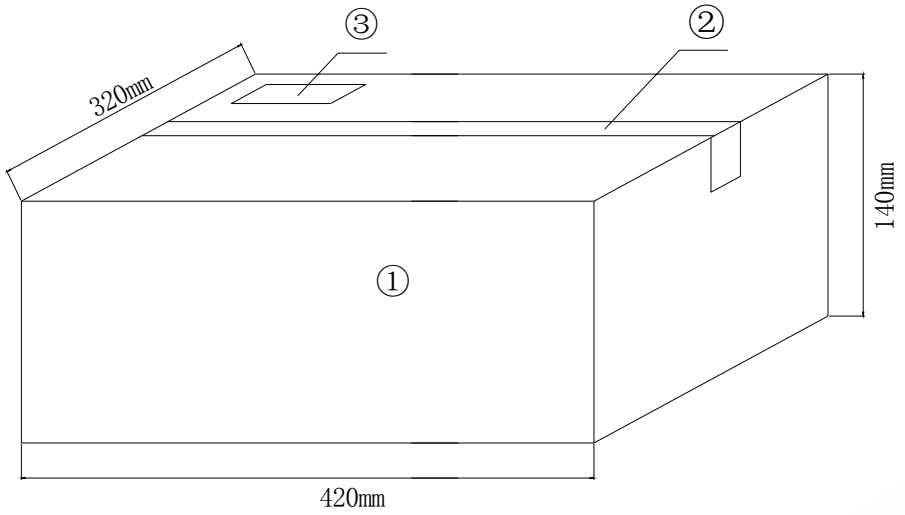
Per plastic bag 500 pieces

Per inner box 3 plastic bag

Per package 40 inner boxes

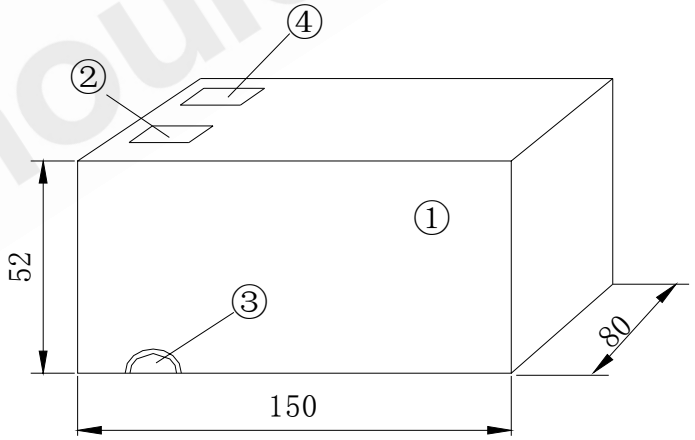
（60000 pieces of piezoelectric ceramic part ）

7.4 Inner Package



NO.	Name	Quantity
①	Inner package	1
②	Adhesive tape	1.2 m
③	Label	1

7.5 Inner Box Dimensions



NO.	Name	Quantity
①	Inner Box	1
②	RoHS Label	1
③	QC Label	1
④	Label	1

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8．EIAJ Monthly Code

2005 / 2007 / 2009		2006 / 2008 / 2010	
MONTH	CODE	MONTH	CODE
JAN	A	JAN	N
FEB	B	FEB	P
MAR	C	MAR	Q
APR	D	APR	R
MAY	E	MAY	S
JUN	F	JUN	T
JUL	G	JUL	U
AUG	H	AUG	V
SEP	J	SEP	W
OCT	K	OCT	X
NOV	L	NOV	Y
DEC	M	DEC	Z

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 All kinds of re-flow soldering must not be applied on the component.

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

9.1.7 Expire date (Shelf life) of the products is 12 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.

9.1.8 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.

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