SPEC NO.: D100-181121

Specification

TO:STE508
Model Name: Crystal Unit
PART NO: TA5C-27.000M-20-20-20-A
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 Email. Approved By Date: _____	

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History Record

Date	Part No.	SPEC No.	Description.	Remarks.
2018-11-17			Initial issue	
RoHS Compliant Lead free Lead-free soldering	ISO9001:2000 ISO14001:2004	**Approved by**	**Check by**	**Design by**
		Nov-17-2018	**NOV-17-2018**	**NOV-17-2018**
Reversions	**Total Page**	*Xu gang dong*	*Liu jun*	*Wang hon*

1．SCOPE

This specification shall cover the characteristics of the SMD quartz crystal unit with the type TA5C-27.000M-20-20-20-A

2．PART NO.

PART NUMBER	TA5C-27.000M-20-20-20-A
CUSTOMER PART NO	SPECIFICATION NO

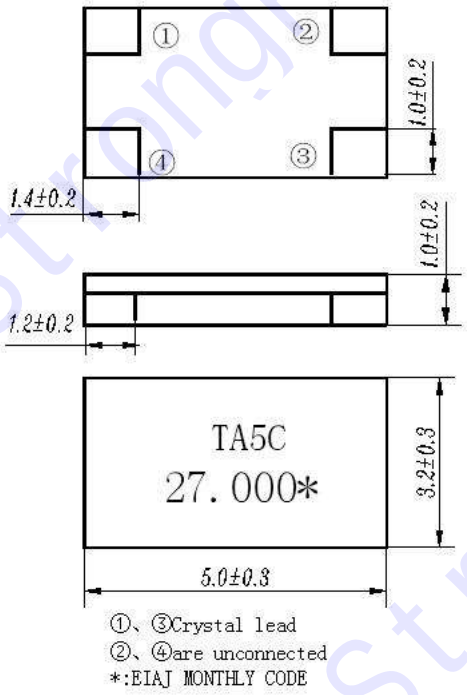
3．OUTLINE DIMENSIONS AND MARK

3.1 Appearance: No visible damage and dirt.

3.2 Construction: SMD ceramic packaged.

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
Insulation Resistance (MΩ) min.	500 (at DC 100V)
Operating Temperature Range (℃)	-20 ～ 70
Storage Temperature Range (℃)	-40 ～ 85

4.2 ELECTRICAL SPECIFICATIONS

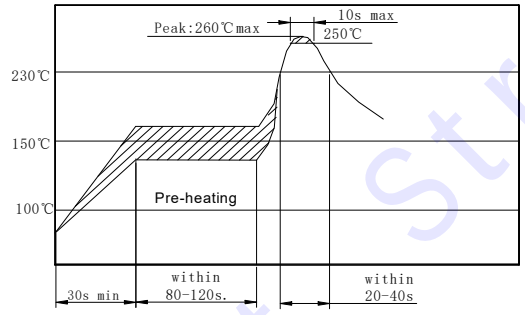
Items	Requirement
Nominal Frequency (MHz)	27.000M
Frequency Tolerance (ppm)	±20 (at 25℃)
Temperature Stability (Ref. To 25℃) (PPM)	±20 (-20℃～70℃)
Mode of Oscillation	Fundamental
Shunt Capacitance C_0 (pF) max.	7
Load Capacitance C_L (pF)	20
Equivalent Series Resistance (Ω) max.	10.000M-11.999M 120 12.000M-14.399M 80 14.400M-36.000M 50
Drive Level (μW) max.	100
Aging (PPM/year) max.	±10 (at 25℃)

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.

6 PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

No	Item	Condition of Test	Performance Requirements
6.1	Humidity Test	Stored in 90%～95% R.H. at 40℃±2℃ for 500h,and left at room temperature for 1h before measurement.	It shall fulfill the specifications in Table 1.
6.2	High Temp. Storage	Stored in 85±2℃ for 500h, and left at room temperature for 1h before measurement. .	It shall fulfill the specifications in Table 1.
6.3	Low Temp. Storage	Stored in –40±2℃ for 500h, and left at room temperature for 1h before measurement.	It shall fulfill the specifications in Table 1.
6.4	Temperature Cycling	Subject the Crystal Unit to －25℃ for 30 min. followed by a high temperature of 85℃ for 30 min. Cycling shall be repeated 5 times, and left at room temperature for 1h before measurement.	It shall fulfill the specifications in Table 1.
6.5	Vibration Test	Apply the vibration of sweep frequency (10 ～ 55)Hz/min,amplitude 0.75mm, duration 30 min in each direction of 3 planes	It shall fulfill the specifications in Table 1.
6.6	Drop Test	Free drop to the wooden plate from 0.75m height for 2 times.	No visible damage and it shall fulfill Table 1.
6.7	Resistance to Soldering Heat	Passed through the reflow oven under the following condition, and left at room temperature for 1 hour before measurement. 	It shall fulfill the specifications in Table 1.

6 PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS(To be continued)

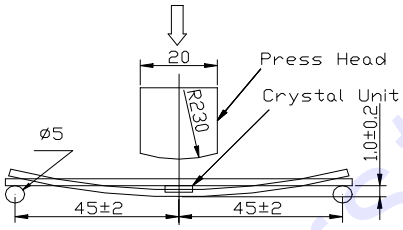
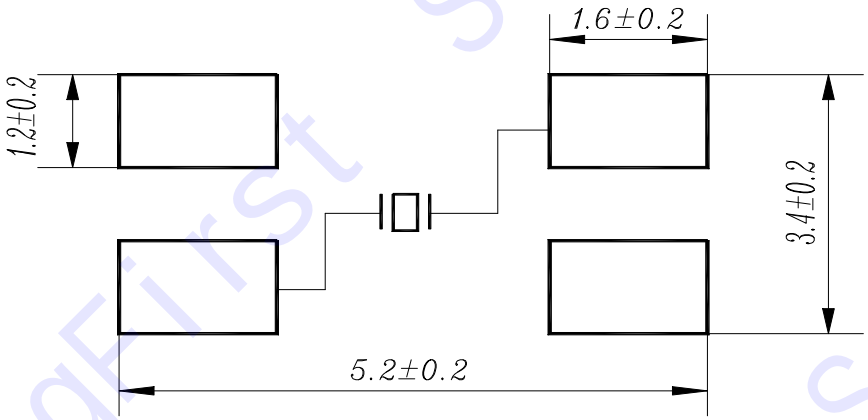
6.8	Solderability	Dipped in 235℃±5℃ solder bath for 3s± 0.5s with rosin flux (25wt% ethanol solution).	The terminals shall be at least 95% covered by solder
6.9	Terminal Strength And board Bending	Mount on a glass-epoxy board (100mm×50mm ×1.6mm),then bend it to 1mm diaplacement and keep it for 5s.(See the following figure) 	No visible damage and it shall fulfill the specifications in Table 1.

Table 1

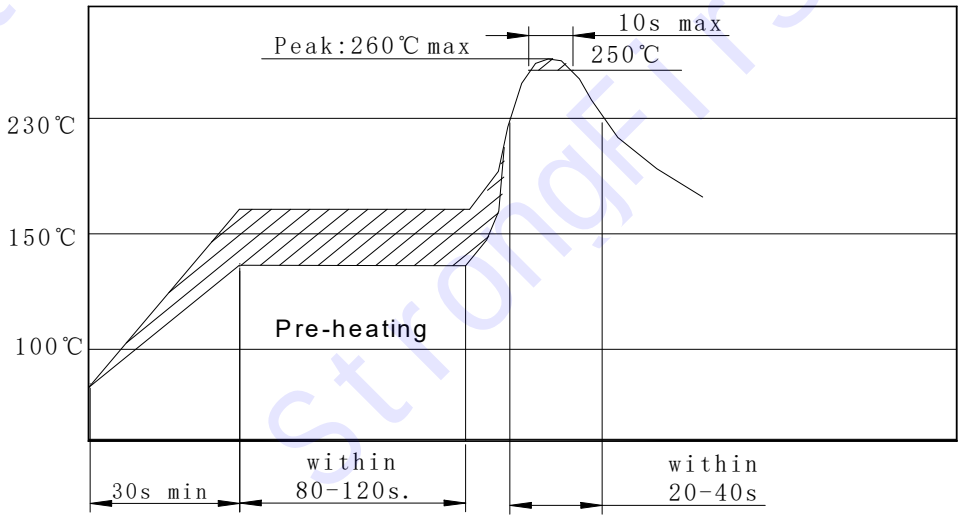
Item	Specification after test
Frequency Tolerance at 25℃(ppm)	±50
Equivalent Series Resistance(Ω)max	50

7 RECOMMENDED LAND PATTERN AND REFLOW SOLDERING STANDARD CONDITIONS

7.1 Recommended land pattern



7.2 Recommended reflow soldering standard conditions

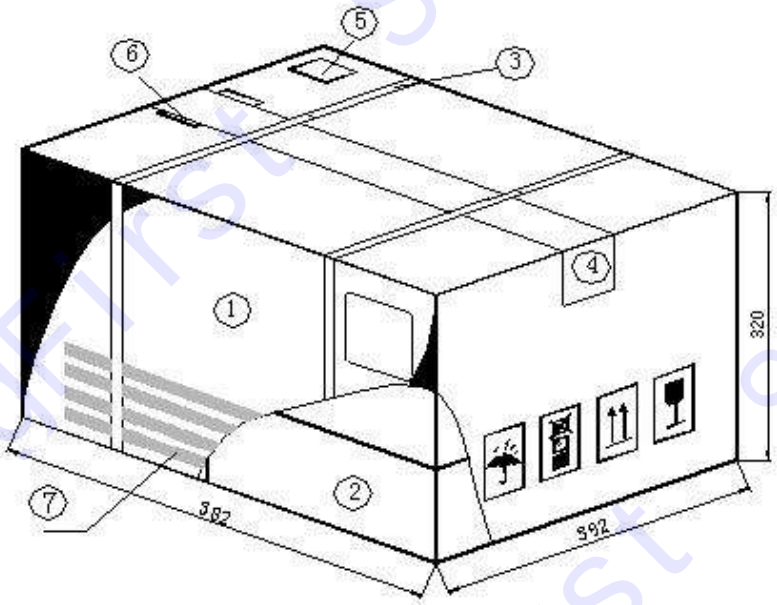


8. PACKAGE

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 12 inner boxes, each box has 4 reels (each reel for plastic bag).

8.1.3 Quantity of package

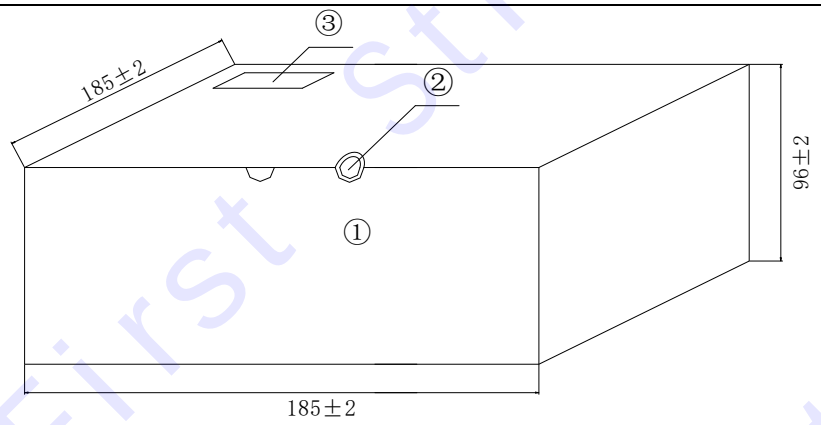
Per plastic reel 1000 pieces of SMD part

Per inner box 4 reels

Per package 12 inner boxes

（48000 pieces of SMD quartz crystal unit）

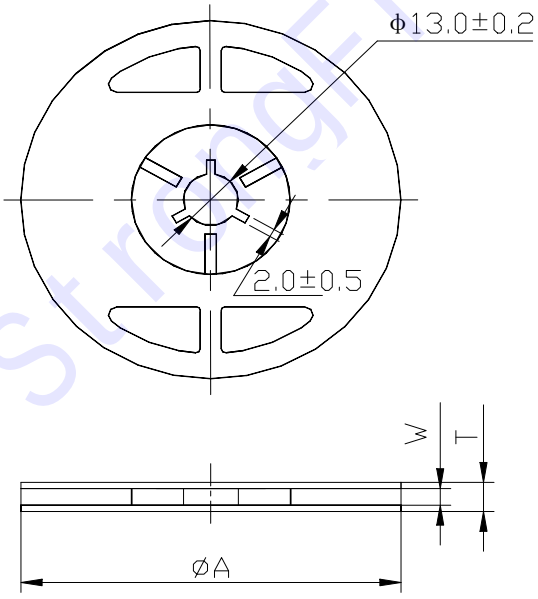
8.1.4 Inner Box Dimensions



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

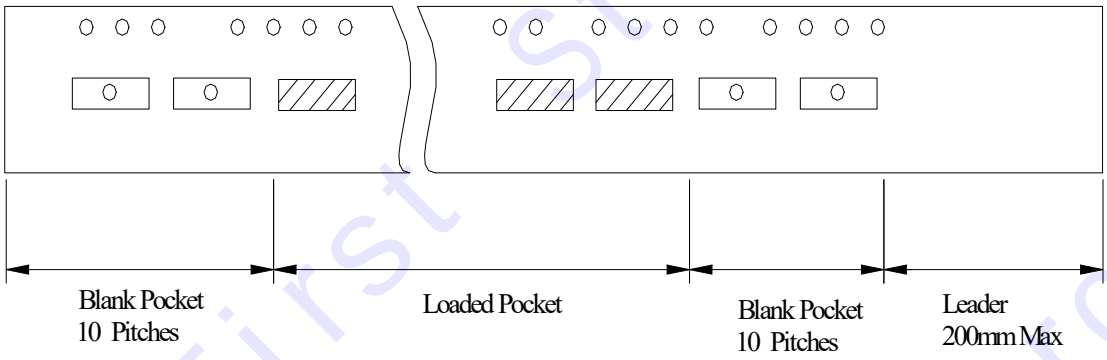
8.2 On reel pack, the following requirements are requested.

8.2.1 Reel

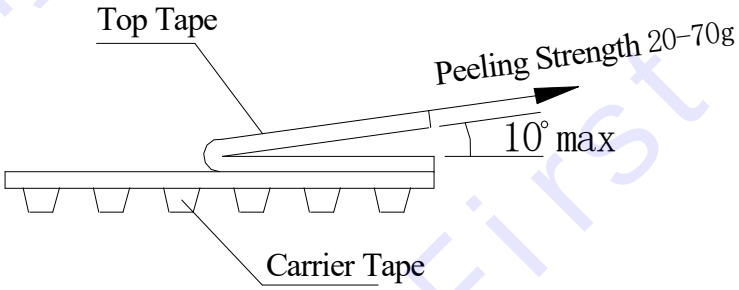


ΦA	W	T	Pieces per reel	Carrier tape size
180±3	16.4min	22.4max	1000typ.	16

8.2.3 Packing Method Sketch Map



8.2.4Test Condition Of Peeling Strength



9. EIAJ Monthly Code

2007 / 2009/2011/2013/2015		2006 / 2008 / 2010/2012/2014	
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

10. OTHER

10.1 Caution

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

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

10.1.3 Don’t be close to fire.

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

10.1.5 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.

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

10.2 Notice

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

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