



# TXC CORPORATION

4F, NO. 16, Sec. 2 Chung Yang S Rd., Peitou, Taipei, Taiwan.

TEL : 886-2-2894-1202 , 886-2-2895-2201 FAX : 886-2-2894-1206 , 886-2-2895-6207

www.txccorp.com

## SPECIFICATION FOR APPROVAL

CUSTOMER	:	_____
PRODUCT TYPE	:	SMD GLASS SEALING XTAL 5.0*3.2
NOMINAL FREQ.	:	9.216000MHz
TXC P/N	:	AA09200001
REVISION	:	S1
CUSTOMER P/N	:	_____
PM / SALES	:	_____
DATE	:	_____
CUSTOMER SIGNATURE & Date	:	_____
		_____

- (1) TXC requires one copy returned with signature and title of authorized individual that signifies acceptance of the attached specifications.
- (2) Orders received and accepted by TXC after return of signed copy of specification will be produced per these specifications.
- (3) Any changes to these specifications must be agreed upon by both parties and new revision of the Product Specification Sheet will be issued.
- (4) Any issuance of purchase order prior to consigning back the Approval page of "Specification Sheets" from customers will be regarded as the agreement on the contents of these specifications.

**MSL:Level 1  
RoHS Compliant**

Pb used in sealing glass material is exempt from EU directive



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# PRODUCT SPECIFICATION SHEET

PRODUCT TYPE : SMD GLASS SEALING XTAL 5.0\*3.2

NOMINAL FREQ. : 9.216000MHz

TXC P/N : AA09200001

REVISION : S1

PE/RD	QA	MFG
<i>Wu Zhonglin</i>		
<i>11-Nov-11</i>		

**NOTE:**

- (1)Lead Free Products are "Directive 2002/95/EC of The European Parliament of 27 January 2003 on the restriction of the use of certain hazardous substances (RoHS) in electrical and electronic equipment" Compliant (Attachment: SGS Test Report).
- (2)Revision "Sx" is for engineering samples only. PE/RD's approval required.
- (3)Revision "Ax" is production ready. PE, QA and MFG's approval required

**MSL:Level 1  
RoHS Compliant**

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## Spec Sheet Contents

No.	Content	Page
1	ELECTRICAL SPECIFICATIONS	P.3
2	FACTORY LOCATION	P.3
3	DIMENSIONS	P.4
4	MARKING	P.4
5	SUGGESTED REFLOW PROFILE& MANUAL SOLDER CONDITION	P.4
6	STRUCTURE ILLUSTRATION	P.5
7	EMBOSS CARRIER TAPE & REEL	P.6
8	PACKING	P.7
9	RELIABILITY SPECIFICATIONS	P.8~9



## ■ ELECTRICAL SPECIFICATIONS

### Standard atmospheric conditions

Unless otherwise specified, the standard range of atmospheric conditions for making measurement and tests are as follow:

Ambient temperature : 25±5  
Relative humidity : 40%~70%

If there is any doubt about the results, measurement shall be made within the following limits:

Ambient temperature : 25±3  
Relative humidity : 40%~70%

### Measure equipment

Electrical characteristics measured by S&A250B or equivalent.

### Crystal cutting type

The crystal is using AT CUT (thickness shear mode).

### Unit Weight:

0.054±0.05 g/pcs

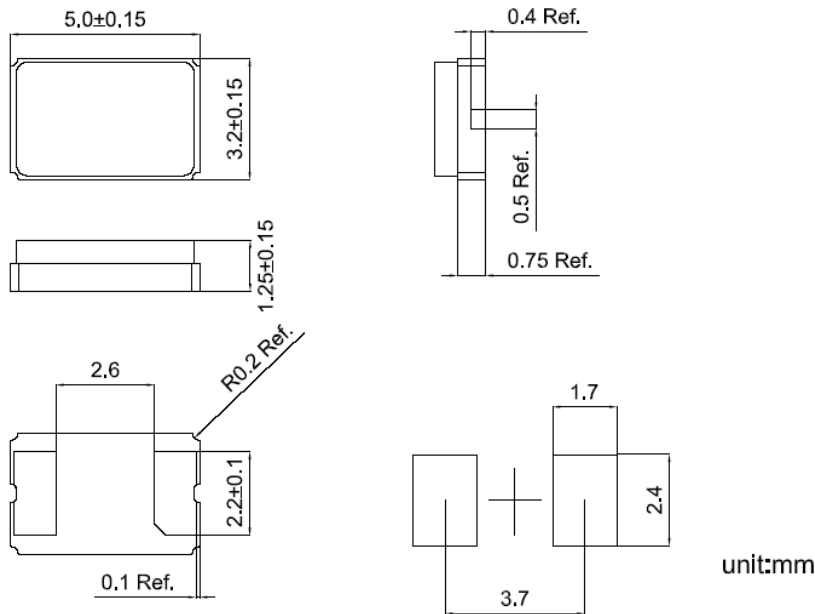
	Parameters	SYM.	Electrical Spec.				Notes
			MIN	TYP	MAX	UNITS	
1	Nominal Frequency	FL	9.216000			MHz	-
2	Oscillation Mode	-	Fundamental			-	-
3	Load Capacitance	CL	15			pF	-
4	Frequency Tolerance	-	±25			ppm	at 25 °C ± 3 °C
5	Frequency Stability	-	±30			ppm	Over Operating Temp. Range (Reference 25°C)
6	Operating Temperature	-	-40	~	85	°C	-
7	Aging	-	±5			ppm	1st Year
8	Drive Level	DL	-	50	100	uW	-
9	Effective Resistance Rr	Rr	-	-	80	Ω	-
10	Shunt Capacitance C0	C0	-	-	2	pF	-
11	Insulation Resistance	-	500	-	-	MΩ	at DC 100V
12	Storage Temperature Range	-	-40	~	85	°C	-

## ■ FACTORY LOCATION

TXC (NINGBO) CORPORATION  
NO.189 Huang Shan West Road, Beilun District,  
Ningbo Zhejiang China

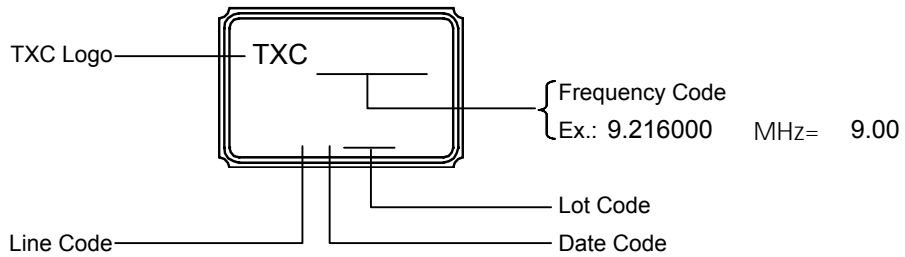
**■ DIMENSIONS**

(Unit:mm)



\*Coplanarity of solderable areas Camber 0.10 mm Max

**■ MARKING**



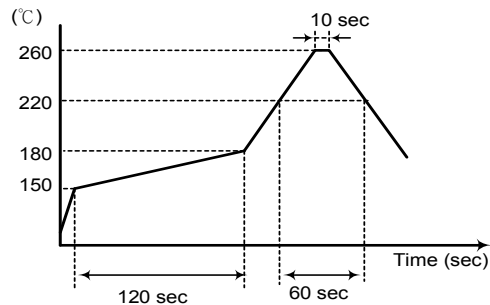
**Date Code:**

YEAR \ MONTH				MONTH											
				JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2005	2009	2013	2017	A	B	C	D	E	F	G	H	J	K	L	M
2006	2010	2014	2018	N	P	Q	R	S	T	U	V	W	X	Y	Z
2007	2011	2015	2019	a	b	c	d	e	f	g	h	j	k	l	m
2008	2012	2016	2020	n	p	q	r	s	t	u	v	w	x	y	z

\*This date code will be cycled every four years

**■ SUGGESTED REFLOW PROFILE**

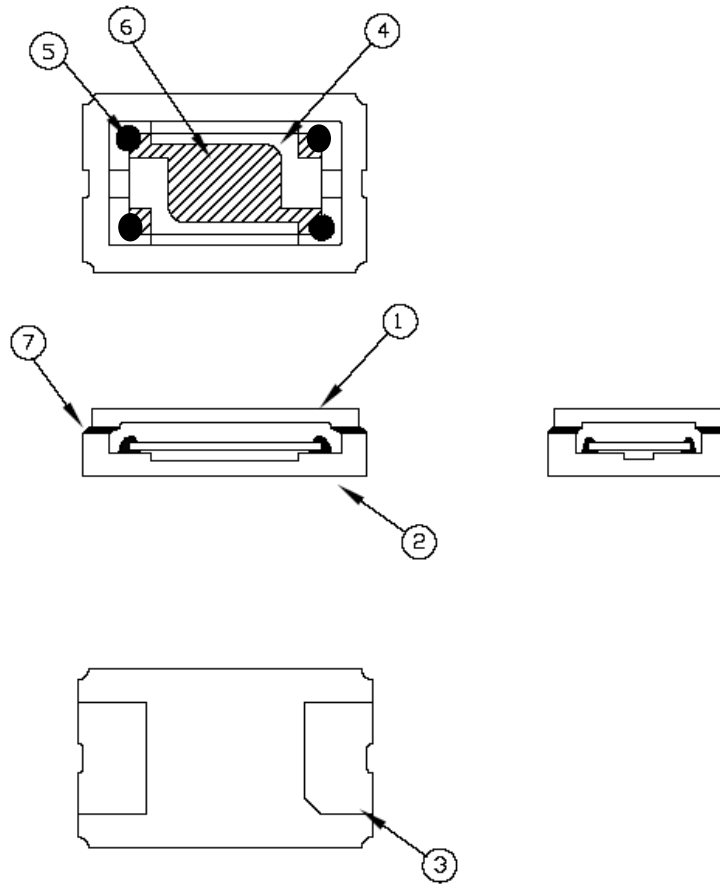
Solder melting point :220 ± 10 °C , 60 sec. Min  
Peak Temperature: 260 ± 5 °C , 10 sec. Max.



**■ SUGGESTED MANUAL SOLDER CONDITION**

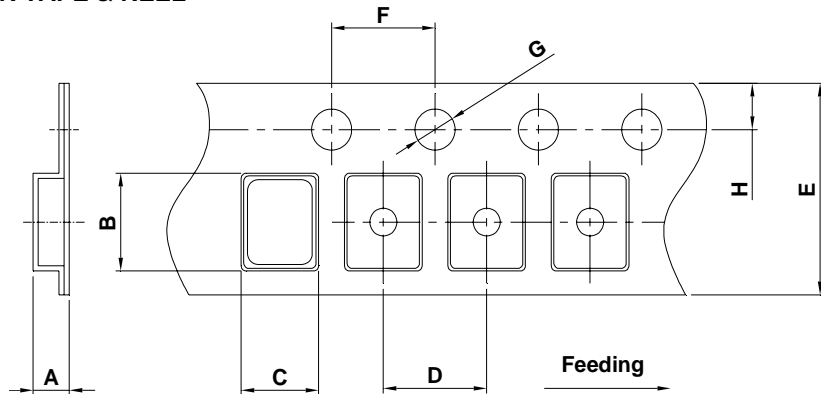
Temperature: 350 ± 10 °C  
Time: 3 sec.  
Re-solder times: twice

■ **STRUCTURE ILLUSTRATION**



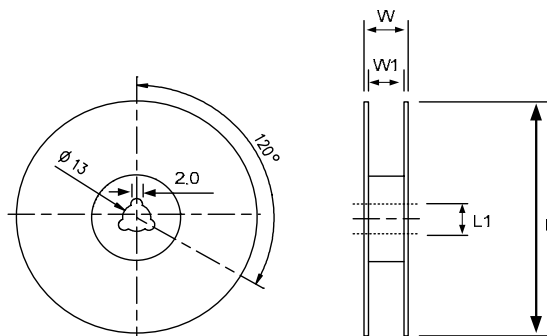
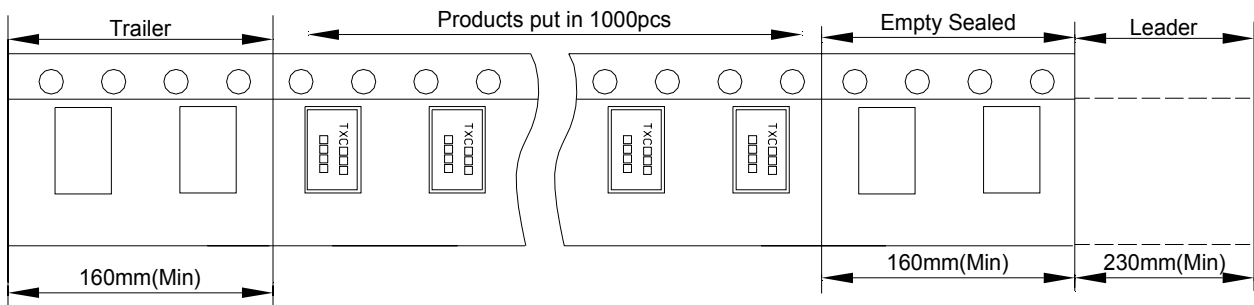
NO	COMPONENTS	MATERIALS	FINISH/SPECIFICATIONS
1	Cap	Ceramic (Al <sub>2</sub> O <sub>3</sub> )	-
2	Base(Package)	Ceramic (Al <sub>2</sub> O <sub>3</sub> )	-
3	PAD	Au	Tungsten metalize + Ni plating + Au plating
4	Crystal blank	SiO <sub>2</sub>	-
5	Conductive adhesive	Resin+Ag	-
6	Electrode	Noble Metal	-
7	Sealing Glass	Glass(PbO)	-

■ **EMBOSS CARRIER TAPE & REEL**



DIMENSIONS	A	B	C	D	E	F	G	H	
	1.65±0.10	5.40±0.10	3.50±0.10	8.00±0.10	12.00±0.30	4.00±0.10	1.55±0.10	1.75±0.10	(UNIT : mm)

REMARK :



DIMENSIONS	L	L1	W	W1	
	180±1.00	13±0.50	16.5±0.20	12±0.10	(UNIT : mm)



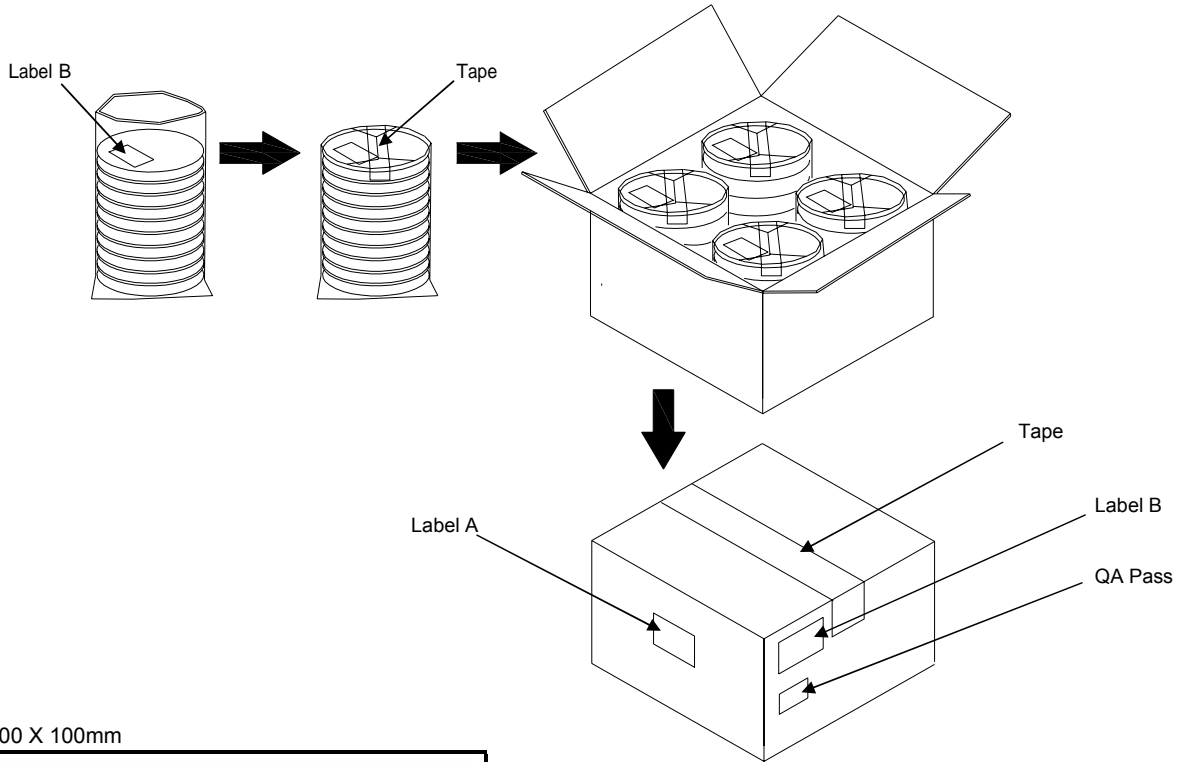
**PACKING**

Reel Quantity :

- 1. Reel X 5 (5 Reels x1)
- 2. Reel X 10 (10 Reels x1)
- 3. Reel X 20 (10 Reels x2)
- 4. Reel X 40 (10 Reels x4)

Box Size:

- 1. L200 X W200 X H140mm
- 2. L200 X W200 X H250mm
- 3. L400 X W200 X H250mm
- 4. L400 X W400 X H280mm



(Label A) Size:100 X 100mm

TXC
Inv No: 00096815
Po No: 21106326- 24- 1
Part No: <span style="font-family: monospace;">□□□□□□□□</span>
Qty: 40000 PCS
C/No: 157- 44

(Label B) Size:80 X 40mm

TXC CORPORATION		QA PASS
DATE CODE:	QTY:	2011/09/02
<span style="font-family: monospace;">□□□□□□□□</span>	1000	
LOT NO:	<b>RoHS</b>	
<span style="font-family: monospace;">□□□□□□□□</span>	<b>HF</b>	
PART NO:		
<span style="font-family: monospace;">□□□□□□□□</span>		
FREQ: <span style="font-family: monospace;">□□□□□□□□□□</span>		

**[STORAGE]**

- 1. The storage time to be 1 year maximum.
- 2. Don't be caught in the rain.
- 3. The storage environment shall be 5°C ~40°C temperature and 30% ~ 75%RH humidity and free from the sun shine.
- 4. If customers have special requirements, we can paste labels according to it.

**RELIABILITY SPECIFICATIONS**
**1.Mechanical Endurance**

No.	Test Item	Test Methods	Test Criteria
1.1	Mechanical Shock	2000 G , 0.3 m Sec. ,3 times for all 3 directions.	B C
1.2	Vibration	Frequency range                      10 ~ 2000 Hz Acceleration                              5G Sweep time                                20 minute Pendicular axes each test time        4 hours (Total test time 12 hours)	B C
1.3	Terminal Strength	17.7N force for 60sec +/-1sec.	F
1.4	Board Flex	Duration time:60 Sec Minimum,Deviation:3mm	B C

**2.Environmental Endurance**

No.	Test Item	Test Methods	SPEC
2.1	Solderability	Temperature                              245 °C +/- 5°C Immersing depth                        0.5 mm minimum Immersion time                         5 +/- 0.5 seconds Flux    Rosin resin methyl alcohol solvent ( 1 : 4 )	E
2.2	Resistance To Soldering Heat	Test temperature                        260 +/- 5 °C Test time                                    10 +/- 1 sec. Emersion Rate                            25 ± 6 mm/s Immersed of specimen                1.5mm	BCD
2.3	High Temp. Storage	+ 85 ± 3 for 1000 ± 12 Hrs	BCD
2.4	Low Temp. Storage	- 40 ± 3 for 1000 ± 12 Hrs	BCD
2.5	Thermal Shock	-40°C~85°C, for 1000 cycles. 	BCD
2.6	Operational Life	1000 hrs @ 85± 3°C. Rated VDD applied with 1 MΩ.	BCD
2.7	High Temp & Humidity	85 ± 3 , RH 85% , 1000 Hrs	BCD

**RELIABILITY SPECIFICATIONS**

Specifications	
A	Frequency change: Within $\pm 5$ ppm or in customer's specification.
B	Frequency change: Within $\pm 10$ ppm or in customer's specification.
C	Equivalent series resistance(E.S.R) change: Within $\pm 15\%$ or 10 $\Omega$ (larger value).
D	After conditioning , quartz crystal units shall be subjected to standard atmospheric conditions for 24 hour, and measured.
E	Minimum 95% of immersed terminal shall be covered with new uniform solder.

**Measurement condition**

Electrical characteristics measured by S&A250B or equivalent.

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

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