

# SPECIFICATION FOR APPROVAL

CUSTOMER : \_\_\_\_\_

PRODUCT TYPE : SMD GLASS SEALING XTAL 5.0\*3.2

NOMINAL FREQ. : 13.560000MHz

TXC P/N : AA13500001

REVISION : S4

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.

Attachment: Product Specification Sheet

- 1
- 2
- 3
- 4
- 5

**RoHS Compliant**

Pb used in sealing glass material is exempt from EU directive

# PRODUCT SPECIFICATION SHEET

PRODUCT TYPE : SMD GLASS SEALING XTAL 5.0\*3.2

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NOMINAL FREQ. : 13.560000MHz

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REVISION : S4

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PE/RD	QA	MFG
<i>Min-Chiang Chao</i>		
<i>18-Jun-09</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.

## RoHS Compliant

Pb used in sealing glass material is exempt from EU directive



**■ 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°C  
 Relative humidity : 40%~70%

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

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

**Measure equipment**

Electrical characteristics measured by Saunders 250B Network Analyzer.

**Crystal cutting type**

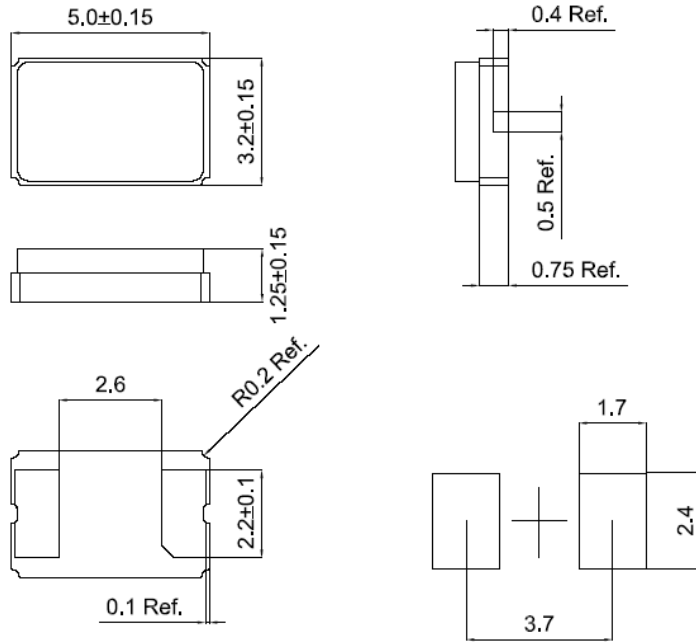
The crystal is using AT CUT (thickness shear mode).

**Unit Weight:**

0.054±0.05 g/pcs

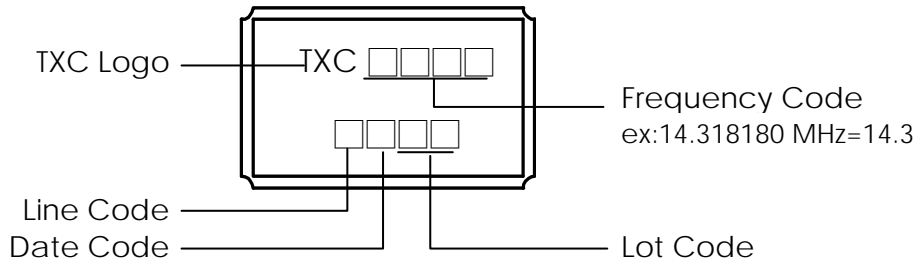
	Parameters	SYM.	Electrical Spec.				Notes
			MIN	TYPE	MAX	UNITS	
1	Nominal Frequency	FL	13.560000			MHz	-
2	Oscillation Mode	-	Fundamental			-	-
3	Load Capacitance	CL	12			pF	-
4	Frequency Tolerance	-	±15			ppm	at 25 °C ± 3 °C
5	Frequency Stability	-	±30			ppm	Over Operating Temp. Range (Reference 25°C)
6	Operating Temperature	-	-40	~	85	°C	-
7	Aging	-	±3			ppm	1st Year
8	Drive Level	DL	-	10	100	uW	-
9	Effective Resistance (Rr)	Rr	-	-	100	Ω	-
10	Shunt Capacitance (C0)	C0	-	-	2.0	pF	-
11	Drive Level Dependency (DLD2)	DLD2	-	-	5	Ω	Sweep from 10nW to 100uW
12	Insulation Resistance	-	500	-	-	MΩ	at DC 100V
13	Storage Temperature Range	-	-40	~	105	°C	-

**■ DIMENSIONS**



unit:mm

**■ MARKING**



Date Code:

YEAR				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

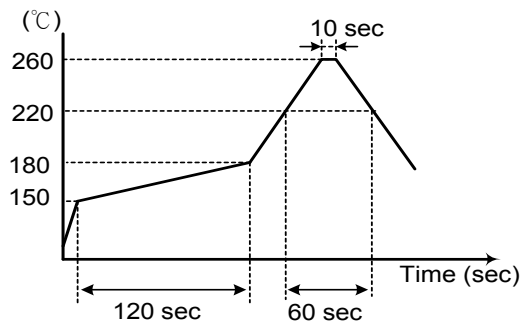
\*This date code will be cycled every four years

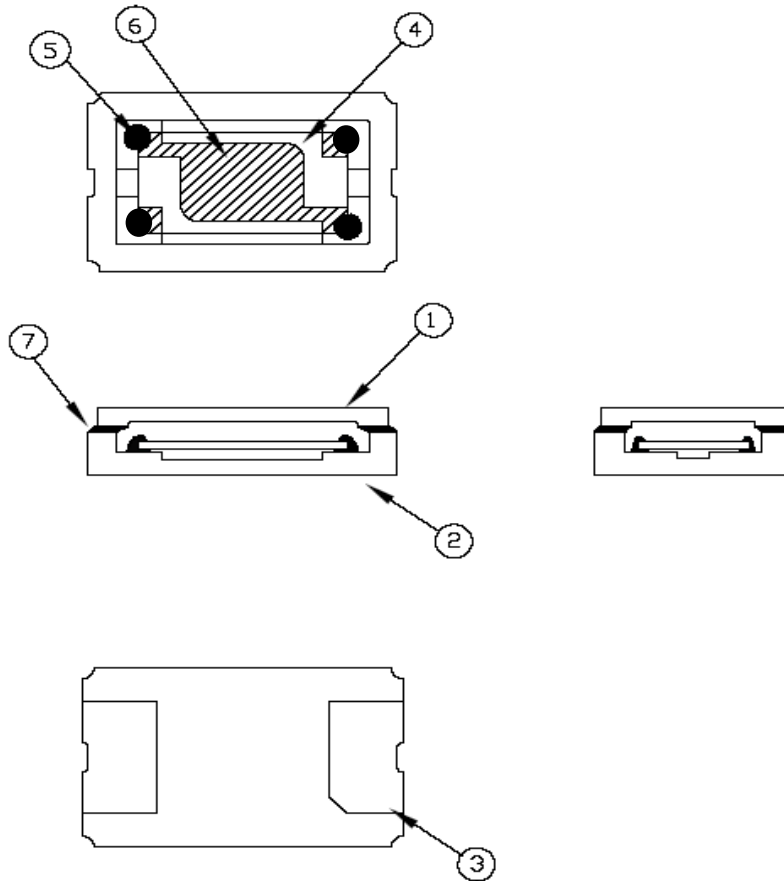
**Production location: China**

**■ SUGGESTED REFLOW PROFILE**

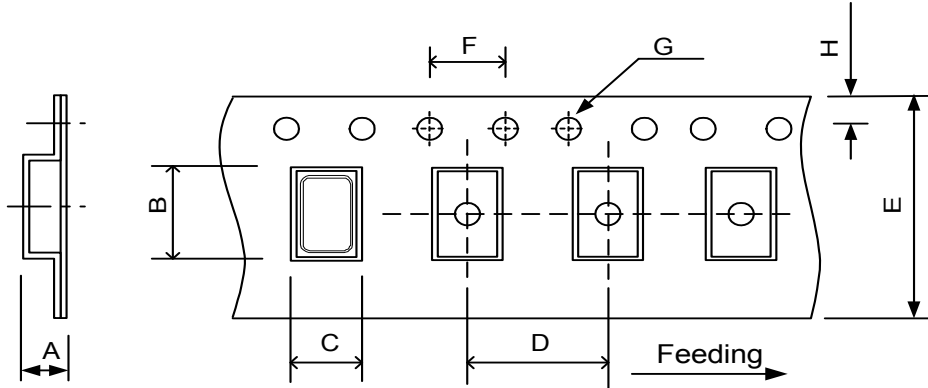
Total time : 200 sec. Max.

Solder melting point :220 °C

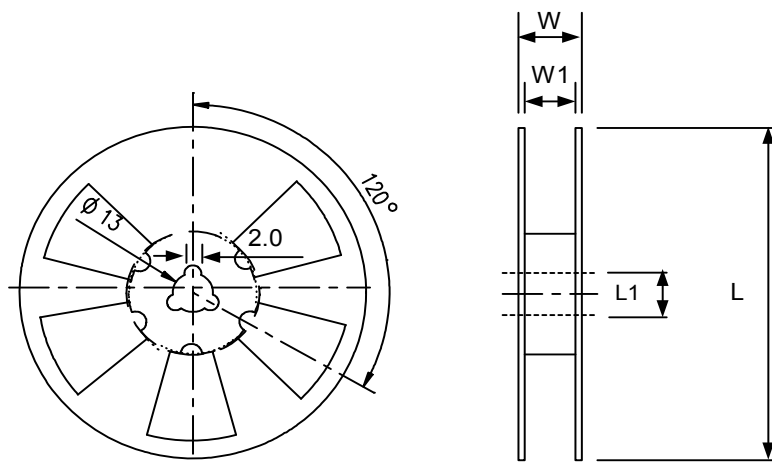
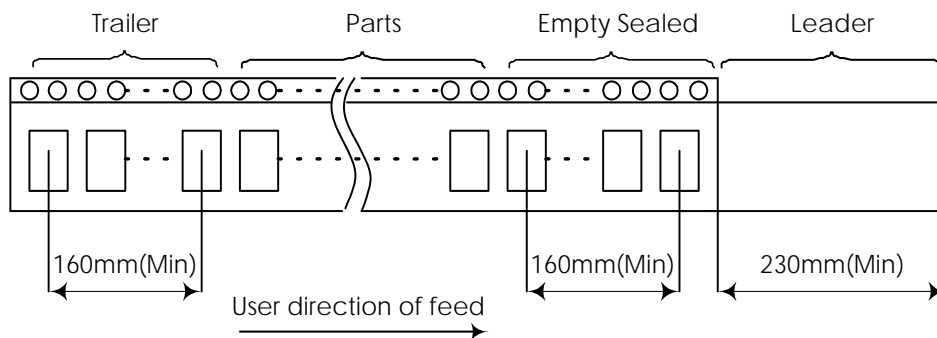


**■ STRUCTURE ILLUSTRATION**


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

**PACKING : (EIA-481-2)**


DIMENSIONS	A	B	C	D	E	F	G	H	(UNIT : mm)
	1.40	5.40	3.60	8.00	12.00	4.00	1.55	1.75	

**REMARK :**


DIMENSIONS	L	L1	W	W1	pcs / Reel (UNIT : mm)
	180	13	16.5	12	Standard Reel Quantity is 1,000 pcs per reel

