TXC CORPORATION

5F, NO. 16, Sec. 2 Chungyang S Rd., Peitou, Taipei, Taiwan, R. O. C..

TEL : 886-2-2894-1202 , 886-2-2895-2201 FAX : 886-2-2894-1206 , 886-2-2895-6207 www.txc.com.tw

SPECIFICATION FOR APPROVAL

CUSTOMER	:	
PRODUCT TYPE	:	SMD GLASS SEALING XTAL 5.0*3.2
NOMINAL FREQ.	:	14.318180MHz
TXC P/N	:	7A14300038
REVISION	:	A1
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.

Attachment: Product Specification Sheet

1
2
3
4
5

RoHS Compliant

Pb used in sealing glass material is exempt from EU directive

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PRODUCT SPECIFICATION SHEET

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NOMINAL FREQ.	:	14.318180MHz
TXC P/N	:	7A14300038
REVISION	:	A1

PE/RD	QA	MFG
Scott Chen	Randy Chang	
11-Mar-05	*11-Mar-05*	*11-Mar-05*

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

Rev	Revise page	Revise contents	Date	Ref.No.	Reviser	Page	Ver.
A1	N/A	Initially revised	11-Mar-05	N/A	繆亞娟	1	A1
						2	A1
						3	A1
						4	A1
						5	A1
						6	A1

■ ELECTRICAL SPECIFICATIONS

Standard atmospheric conditions

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

Ambient temperature ： 22±5℃

Relative temperature ： 40%~70%

If there is no doubt about the results, measurement shall be made within the following limits:

Ambient temperature ： 22±1℃

Relative temperature ： 40%~70%

Measure equipment

Electrical characteristics measured by HP E5100A or equivalent.

Crystal cutting type

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

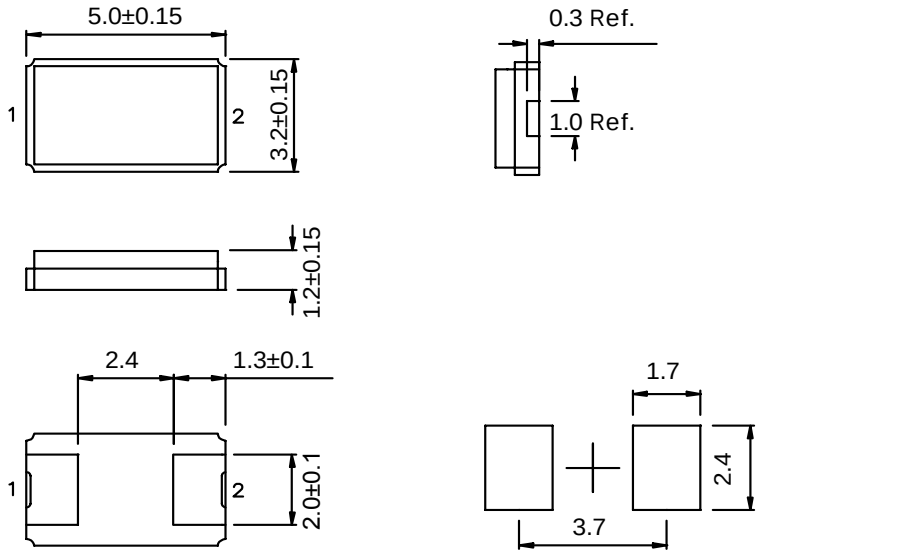
Unit Weight:

0.062±0.001 g/pcs

	Parameters	SYM.	Electrical Spec.				Notes
			MIN	TYPE	MAX	UNITS	
1	Nominal Frequency	FL		14.318180		MHz	-
2	Oscillation Mode	-		Fundamental		-	-
3	Load Capacitance	CL		20		pF	-
4	Frequency Tolerance	-		±30		ppm	at 25 ℃ ± 3 ℃
5	Frequency Tolerance	-		±30		ppm	Over Operating Temp. Range (Reference 25℃)
6	Operating Temperature	-	-10	~	70	℃	-
7	Aging	-		±5		ppm	1st Year
8	Drive Level	DL	-	50	-	uW	-
9	Effective Resistance Rr	Rr	-	-	50	Ω	-
10	Shunt Capacitance C0	C0	-	-	5	pF	-
11	Motional Capacitance C1	C1	-	-	NA	fF	-
12	Insulation Resistance	-	500	-	-	MΩ	at DC 100V
13	Storage Temperature Range	-	-40	~	85	℃	-

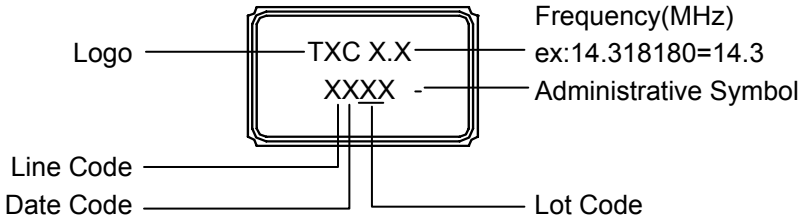
■ DIMENSIONS

1. Crystal enclosure seal : Glass Seal
2. Crystal enclosure medium : Nitrogen



Units:mm

■ MARKING



Date Code

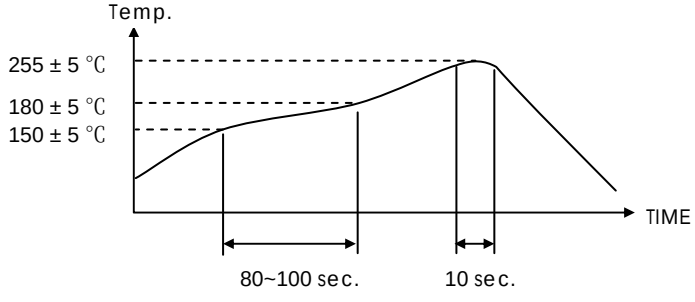
YEAR \ MONTH					JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2001	2005	2009	2013	2017	A	B	C	D	E	F	G	H	J	K	L	M
2002	2006	2010	2014	2018	N	P	Q	R	S	T	U	V	W	X	Y	Z
2003	2007	2011	2015	2019	a	b	c	d	e	f	g	h	j	k	l	m
2004	2008	2012	2016	2020	n	p	q	r	s	t	u	v	w	x	y	z

This date code will be cycled every four years

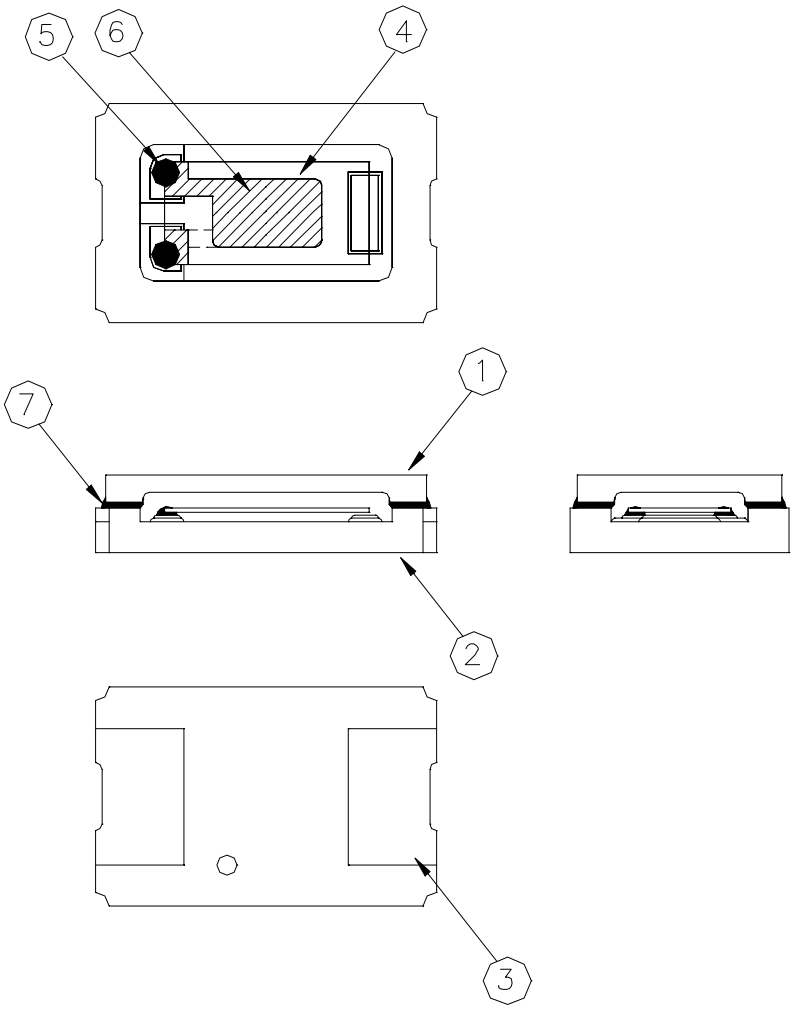
■ SUGGESTED REFLOW PROFILE

Total time : 200 sec. Max.

Solder melting point :185 ℃

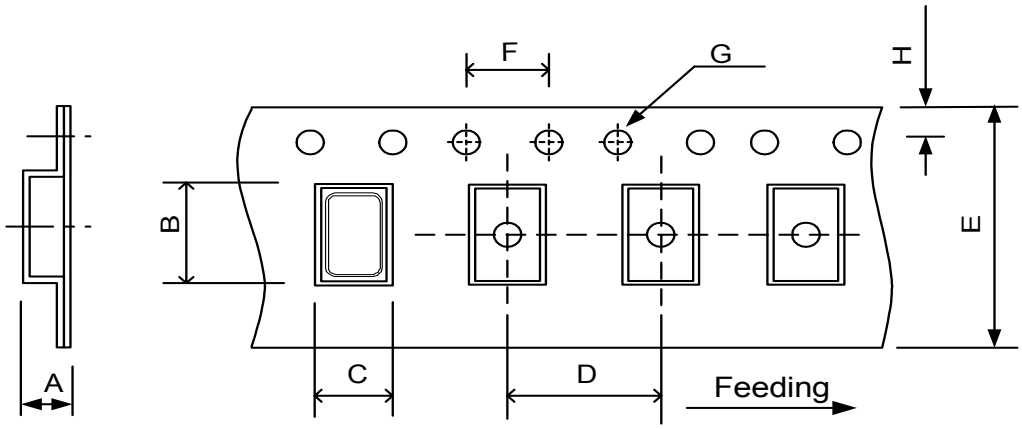


■ STRUCTURE ILLUSTRATION



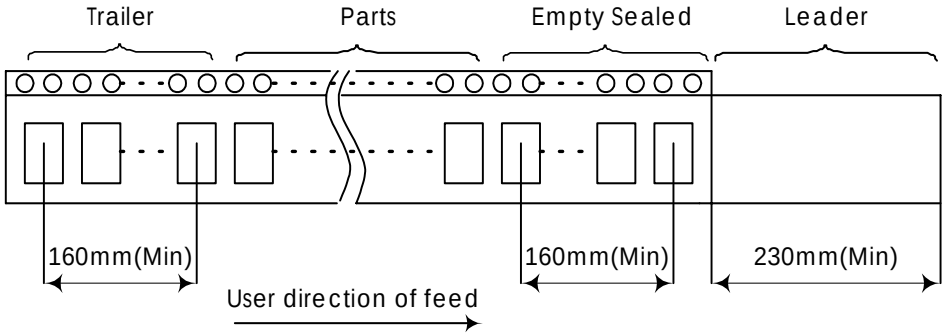
NO	COMPONENTS	MATERIALS	QTY	FINISH/SPECIFICATIONS
1	Cap	Ceramic	1	Color black
2	Base	Ceramic	1	Color black
3	PAD	Au	2	Tungsten metalize + Ni plating + Au plating
4	Crystal blank	SiO2	1	-
5	Conductive adhesive	Ag	4	Epoxy resin
6	Electrode	Ag + Cr	2	-
7	Glass	-	-	-

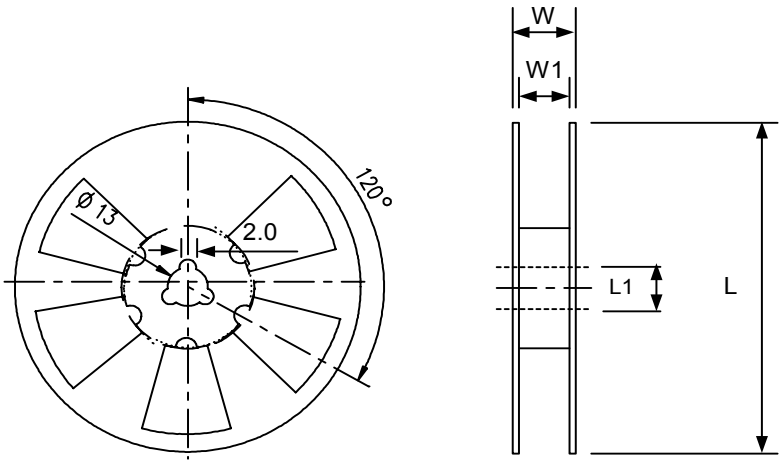
■ PACKING : (EIA-481-2)



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

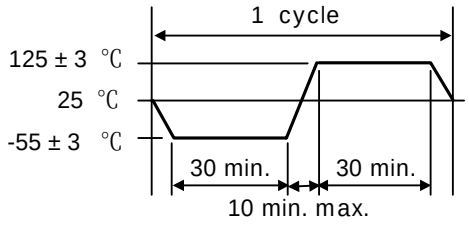
REMARK :





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

■ RELIABILITY SPECIFICATIONS

No.	Test Item	Test Methods	REF.DOC
1	Drop Test	75 cm height, fall freely onto stainless plate 3 times.	JIS C6701
2	Mechanical Shock	Device are shocked to half sine wave (1000 G) three mutually pendicular axes each 3 times. 0.5m sec. duration time	MIL-STD-202F
3	Vibration	Frequency range 10 ~ 2000 Hz Amplitude 1.52 mm Sweep time 20 minute Pendicular axes each test time 4 hours (Total test time 12 hours)	MIL-STD-883E
4	Solderability	Temperature 255 ℃ ± 5℃ Immersing depth 0.5 mm minimum Immersion time 10 ± 0.5 seconds Flux Rosin resin methyl alcohol solvent (1 : 4)	MIL-STD-883E
5	Resistance To Soldering Heat	Pre-heat temperature 125 ℃ Pre-heat time 60 ~ 120 sec. Test temperature 260 ± 5 ℃ Test time 5 ± 1 sec.	MIL-STD-202F
6	High Temp. Storage	+ 125 ℃ ± 2 ℃ for 1000 ± 12 hours	MIL-STD-883E
7	Low Temp. Storage	- 40 ℃ ± 2 ℃ for 1000 ± 12 hours	
8	Thermal Cycles	Total 100 cycles of the following temperature cycle 	MIL-STD-883E

Test Report

TXC COROPATION
NO. 4, KUNG YEH 6TH ROAD, PING CHENG INDUSTRIAL DISTRICT, PING CHENG CITY, TAO YUAN HSIEN, TAIWAN, R. O. C.

Report No. : CE/2004/B4942
Date : 2004/12/03

The following merchandise was (were) submitted and identified by the client as :

Type of Product	:	QUARTZ CRYSTAL UNIT
Style/Item No	:	GLASS X' TAL
Sample Received	:	2004/11/26
Testing Date	:	2004/11/26 TO 2004/12/03

==========

Test Result : - Please see the next page -

Daniel Yeh, M.R. / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.

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Test Report

TXC COROPATION
NO. 4, KUNG YEH 6TH ROAD, PING CHENG INDUSTRIAL DISTRICT, PING CHENG CITY, TAO YUAN HSIEN, TAIWAN, R. O. C.

Report No. : CE/2004/B4942
Date : 2004/12/03

Test Result

PART NAME NO.1 : PLEASE REFER TO THE PHOTO(S) ATTACHED.(MIXED ALL PARTS)

Test Item (s):	Unit	Method	MDL	Result				
				No.1				
PBBs(Polybrominated biphenyls)(CAS NO:059536-65-1)	%	With reference to USEPA3540 or USEPA3550. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	N.D.				
PBBEs(PBDEs)(Polybrominated biphenyl ethers)	%	With reference to USEPA3540 or USEPA3550. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	N.D.				

Test Item (s):	Unit	Method	MDL	Result				
				No.1				
Chromium VI (Cr+6)	ppm	As per US EPA 7196A and US EPA 3060A.	2	N.D.				
Cadmium (Cd)	ppm	ICP-AES after as per EN 1122, method B:2001 or other acid digestion.	2	N.D.				
Mercury (Hg)	ppm	ICP-AES after as per US EPA 3052 or other acid digestion.	2	N.D.				
Lead (Pb)	ppm	ICP-AES after as per US EPA 3050B or other acid digestion.	2	47777.0				

NOTE: (1) N.D. = Not detected (<MDL)
(2) ppm = mg/kg
(3) MDL = Method Detection Limit

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