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 SEAM SEALING CRYSTAL 2.5*2.0
NOMINAL FREQ.	:	26.000000MHz
TXC P/N	:	8Z26000006
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.

(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.

Note :

1. This specification sheet is for Infineon and TXC internal use only.
2. The content of this document might not be same as the one that open published for Infineon's ULC3 crystal application.
3. The specification items and criteria in this document show the actual conditions for Infineon's ULC3 crystal applications.
4. Both parties agree to sign two different documents for those two different occasions.

RoHS Compliant

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PRODUCT SPECIFICATION SHEET

PRODUCT TYPE	:	SMD SEAM SEALING CRYSTAL 2.5*2.0
NOMINAL FREQ.	:	26.000000MHz
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REVISION	:	A1

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PE/RD	QA	MFG
Scott.Chen	T.M.Yan	Jelly Teng
24-Jun-08	*24-Jun-08*	*24-Jun-08*

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

Rev	Revise page	Revise contents	Date	Ref.No.	Reviser
A1	N/A	Initial released from S3	24-Jun-08	N/A	Yachuan Miao

■ 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±10℃

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 HP E5100A or equivalent.

Crystal cutting type

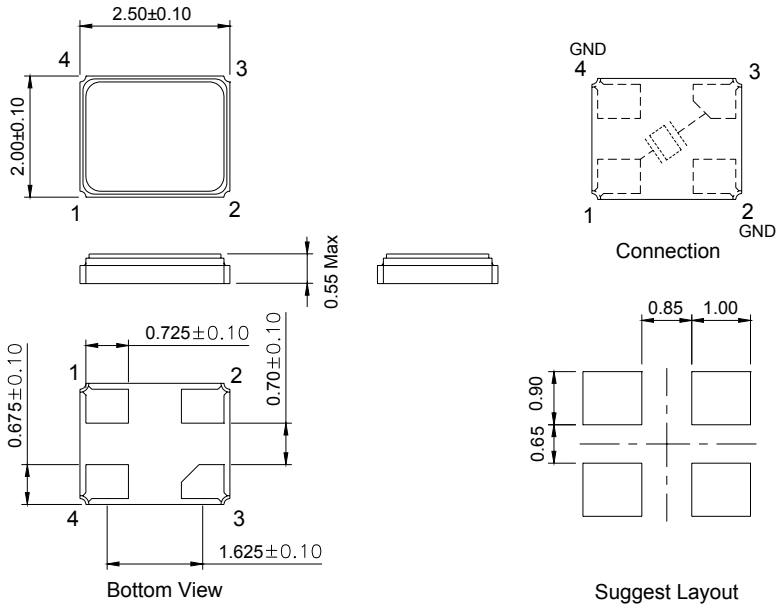
The crystal is using AT CUT (thickness shear mode).

Unit Weight:

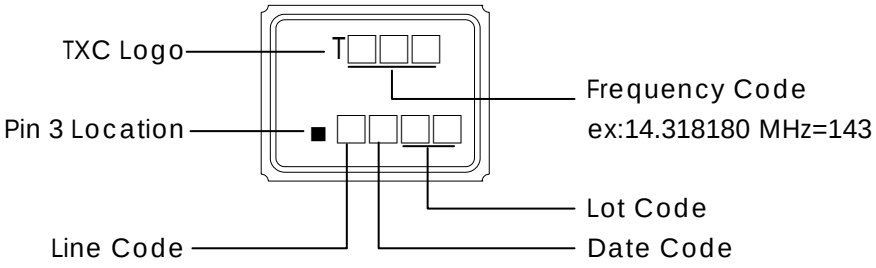
0.009±0.001 g/pcs

	Parameters	SYM.	Electrical Spec.				Notes
			MIN	TYPE	MAX	UNITS	
1	Nominal Frequency	F0		26.000000		MHz	offset:: -5ppm
2	Nominal Temperature	-	24	29	34	℃	-
3	Oscillation Mode	-		Fundamental		-	-
4	Load Capacitance	CL		8.5		pF	-
5	Frequency Tolerance	df/F		±10		ppm	T=29±5℃
6	Frequency Stability	df/F		±13		ppm	Over Operating Temp. Range (Reference 25℃)
7	Operating Temperature	-	-30	~	85	℃	-
8	Aging	-		±3		ppm	5 Years,T=29±5℃
9	Drive Level	Pd	1	-	100	uW	-
10	Effective Resistance Rr	ESR	-	-	40	Ω	-
11	Shunt Capacitance C0	C0	0.8	1.0	1.2	pF	-
12	Motional Capacitance C1	C1	2.88	3.60	4.32	fF	-
13	Insulation Resistance	IR	500	-	-	MΩ	at DC 100V
14	Storage Temperature Range	-	-40	~	85	℃	-
15	Frequency discontinuities	dips		±1		ppm	-
16	Relative series resistance of unwanted modes $a_{NW}=20\cdot\log(R_{NW}/R_r)$	a_{NW}	6	-	-	dB	-

■ DIMENSIONS



■ 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

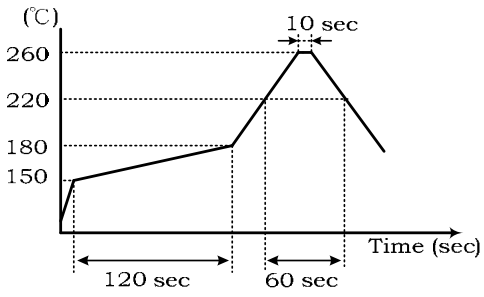
*This date code will be cycled every four years

Production location:Taiwan

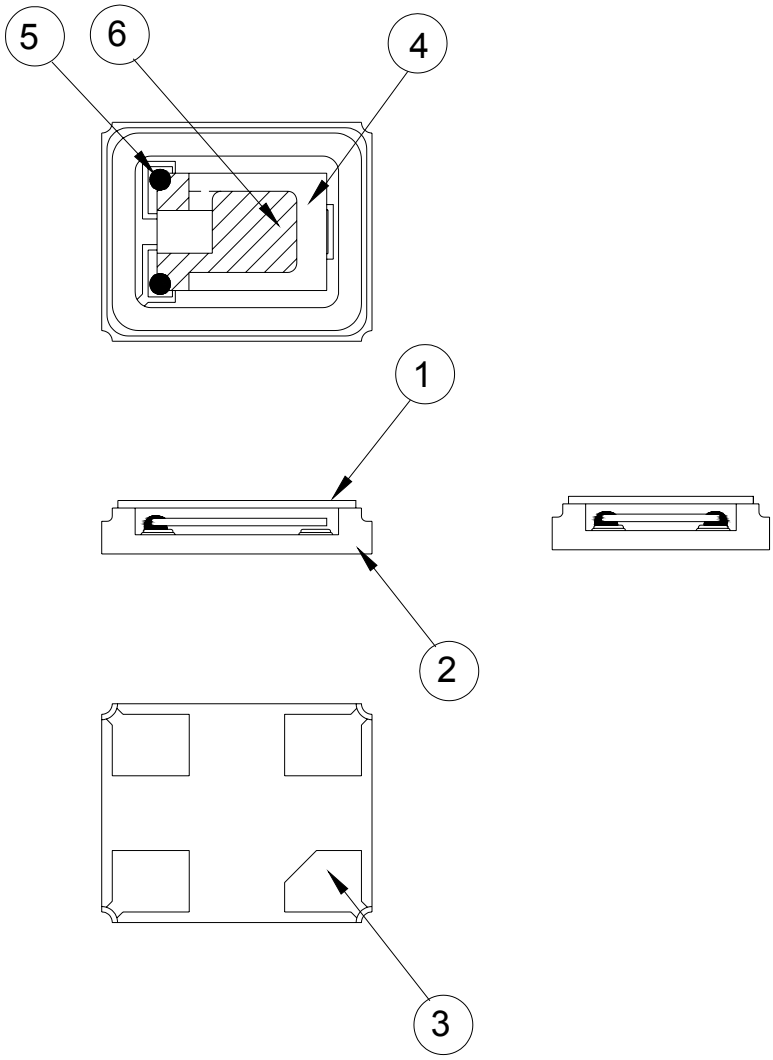
■ SUGGESTED REFLOW PROFILE

Total time : 200 sec. Max.

Solder melting point :220 ℃

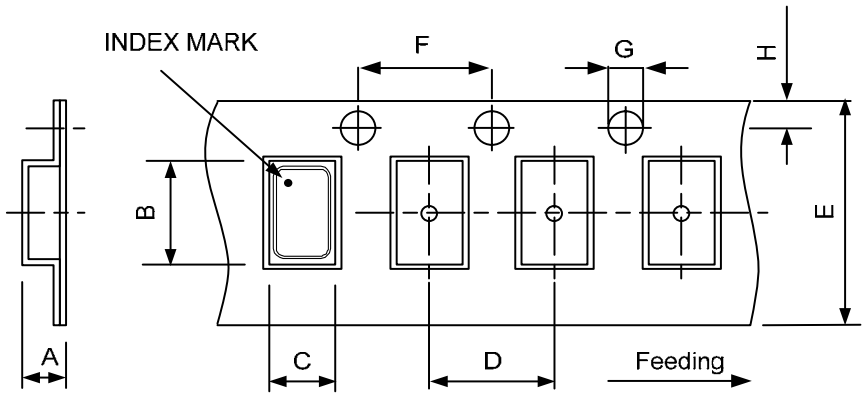


■ STRUCTURE ILLUSTRATION



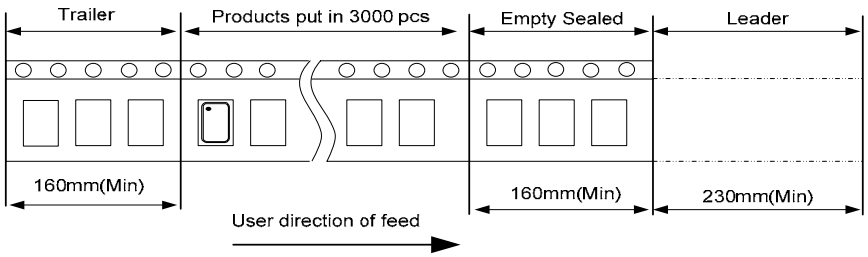
NO	COMPONENTS	MATERIALS	FINISH/SPECIFICATIONS
1	Lid	Kovar (Fe/Co/Ni)	-
2	Base(Package)	Ceramic (Al_2O_3) + Kovar (Fe/Co/Ni)+ Ag/Cu	Alumina ceramics
3	PAD	Au	Tungsten metalize + Ni plating + Au plating
4	Crystal blank	SiO_2	-
5	Conductive adhesive	Ag	Silicone resin
6	Electrode	Noble Metal	-

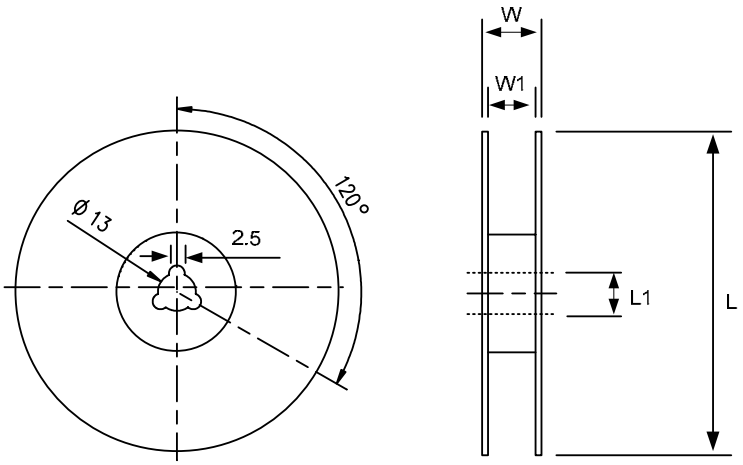
■ PACKING



DIMENSIONS	A	B	C	D	E	F	G	H	(UNIT : mm)
	1.05	2.7	2.25	4	8	4	1.55	1.75	

REMARK :





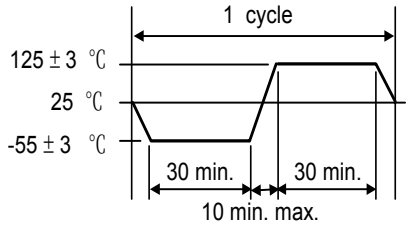
DIMENSIONS	L	L1	W	W1	pcs / Reel (UNIT : mm)
	178	13	11.5	8	Standard Reel Quantity is 3,000 pcs per reel

■ RELIABILITY SPECIFICATIONS

1.Mechanical Endurance

No.	Test Item	Test Methods		REF.DOC
1.1	Drop Test	150 cm height, 3 times on concrete floor.		JIS C6701
1.2	Mechanical Shock	Device are shocked to half sine wave (1000 G) three mutually perpendicular axes each 3 times. 0.5m sec. duration time		MIL-STD-202
1.3	Vibration	Frequency range Amplitude Sweep time perpendicular axes each test time	10 ~ 2000 Hz 1.52 mm/20G 20 minute 4 hours (Total test time 12 hours)	MIL-STD-883
1.4	Gross Leak	Standard Sample For Automatic Gross Leak Detector, Test Pressure: 2Kg / cm^2		MIL-STD-883
1.5	Fine Leak	Helium Bombing 4.5 Kg/ cm^2 for 2 hr		
1.6	Solder ability	Temperature Immersing depth Immersion time Flux	245 ℃ ± 5℃ 0.5 mm minimum 5 ± 1 seconds Rosin resin methyl alcohol solvent (1 : 4)	MIL-STD-883

2.Environmental Endurance

No.	Test Item	Test Methods		REF. DOC
2.1	Resistance To Soldering Heat	Pre-heat temperature Pre-heat time Test temperature Test time	125 ℃ 60 ~ 120 sec. 260 ± 5 ℃ 10 ± 1 sec.	MIL-STD-202
2.2	High Temp. Storage	+ 125 ℃ ± 3 ℃ for 500 ± 12 hours		MIL-STD-883
2.3	Low Temp. Storage	- 40 ℃ ± 3 ℃ for 500 ± 12 hours		
2.4	Thermal Shock	Total 100 cycles of the following temperature cycle 		MIL-STD-883
2.5	High Temp & Humidity	85℃ ± 3℃, RH 85% , 500Hrs		JIS C5023
2.6	Pressure Cooker Storage	121 ± 3℃ , RH100% , 2 bar , 240Hrs		JIS C6701