

SPECIFICATION FOR APPROVAL

CUSTOMER : _____

PRODUCT TYPE : SMD XTAL 2.0*1.6

NOMINAL FREQ. : 38.400000MHz

TXC P/N : 8Y38400001

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.

Attachment: Product Specification Sheet

- 1
- 2
- 3
- 4
- 5

RoHS Compliant

PRODUCT SPECIFICATION SHEET

PRODUCT TYPE : SMD XTAL 2.0*1.6

NOMINAL FREQ. : 38.400000MHz

TXC P/N : 8Y38400001

REVISION : S1

PE/RD	QA	MFG
<i>Scott Chen</i>		
<i>11-May-07</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

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

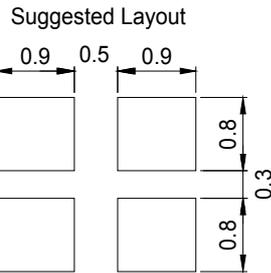
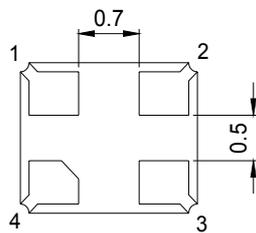
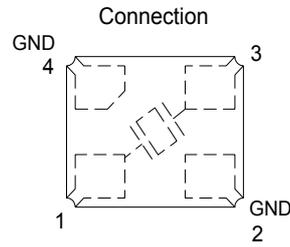
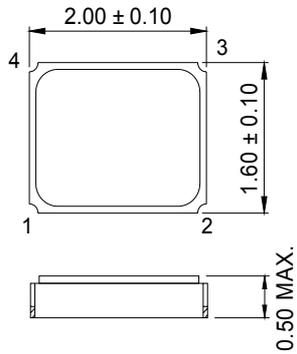
The crystal is using AT CUT (thickness shear mode).

Unit Weight:

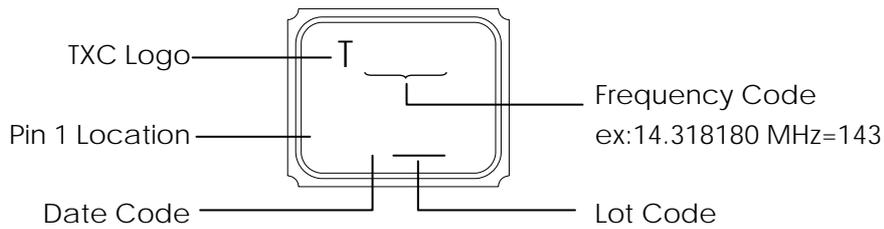
0.005±0.001 g/pcs

	Parameters	SYM.	Electrical Spec.				Notes
			MIN	TYPE	MAX	UNITS	
1	Nominal Frequency	FL	38.400000			MHz	-
2	Oscillation Mode	-	Fundamental			-	-
3	Load Capacitance	CL	8			pF	-
4	Frequency Tolerance	-	±10			ppm	at 25 ± 3
5	Frequency Tolerance	-	±15			ppm	Over Operating Temp. Range (Reference 25)
6	Operating Temperature	-	-25	~	70		-
7	Aging	-	±1			ppm	1st Year
8	Drive Level	DL	-	50	-	uW	-
9	Effective Resistance Rr	Rr	-	-	40	Ω	-
10	Shunt Capacitance C0	C0	-	0.8	-	pF	-
11	Motional Capacitance C1	C1	-	2.7	-	fF	-
12	Insulation Resistance	-	500	-	-	MΩ	at DC 100V
13	Storage Temperature Range	-	-40	~	85		-

DIMENSIONS



MARKING



Date Code:

YEAR		MONTH				JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
						A	B	C	D	E	F	G	H	J	K	L	M
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		

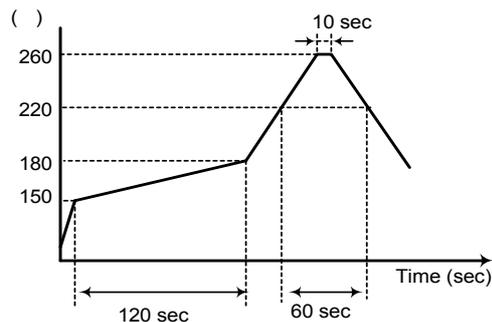
*This date code will be cycled every four years

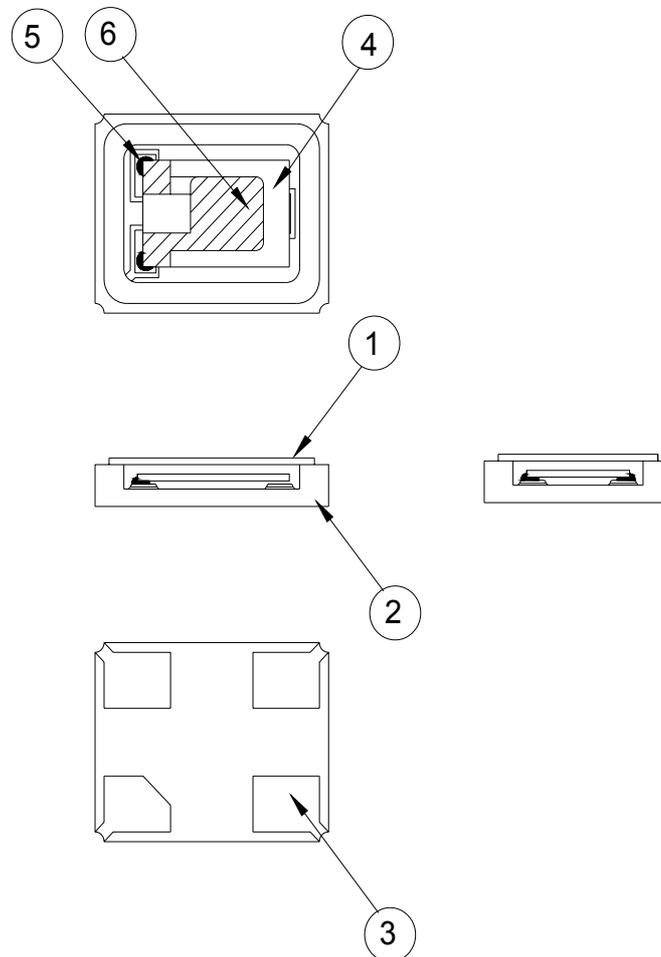
Production location: Taiwan

SUGGESTED REFLOW PROFILE

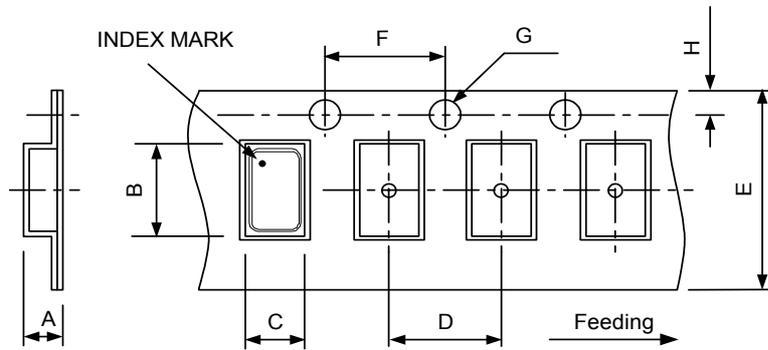
Total time : 200 sec. Max.

Solder melting point :220

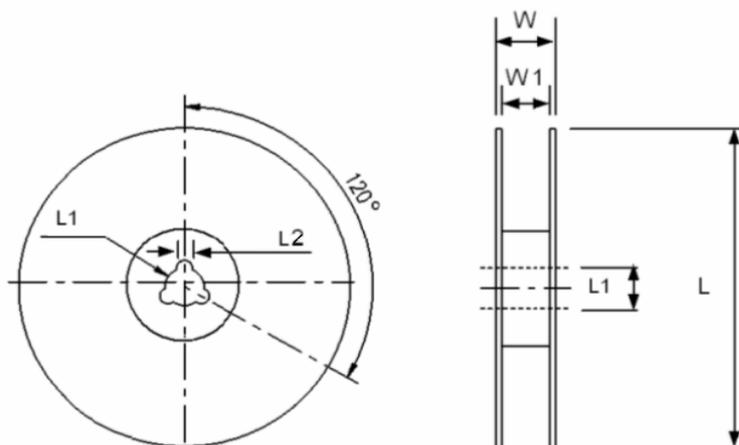
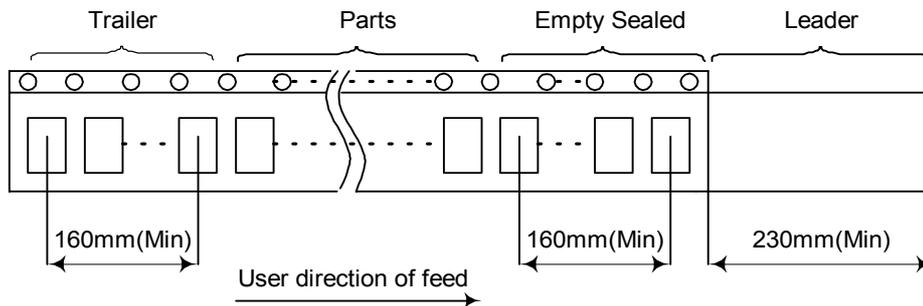


STRUCTURE ILLUSTRATION


NO	COMPONENTS	MATERIALS	QTY	FINISH/SPECIFICATIONS
1	Lid	Kovar (AuSn)	1	-
2	Base(Package)	Ceramic (Al ₂ O ₃)	1	Alumina ceramics
3	PAD	Au	4	Tungsten metalize + Ni plating + Au plating
4	Crystal blank	SiO ₂	1	-
5	Conductive adhesive	Ag	2	Silicone resin
6	Electrode	Noble Metal + Cr	2	-

PACKING : (EIA-481-2)


DIMENSIONS	A	B	C	D	E	F	G	H	(UNIT : mm)
	0.65 ±0.1	2.3 ±0.1	1.9 ±0.1	4.0 ±0.1	8.0 ±0.2	4.0 ±0.1	1.55 ±0.05	1.75 ±0.1	

REMARK :


DIMENSIONS	L	L1	L2	W	W1	pcs / Reel (UNIT : mm)
	178 ±1	13.0 ±0.5	2.5 ±0.5	11.5 ±0.2	8.0 +1,-0	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-202F
1.3	Vibration	Frequency range 10 ~ 2000 Hz Amplitude 1.52 mm/20G Sweep time 20 minute perpendicular axes each test time 4 hours (Total test time 12 hours)	MIL-STD-883E
1.4	Gross Leak	Standard Sample For Automatic Gross Leak Detector, Test Pressure: 2Kg / cm ²	MIL-STD-883E
1.5	Fine Leak	Helium Bombing 4.5 Kg/ cm ² for 2 hr	
1.6	Solder ability	Temperature 245 ± 5 Immersing depth 0.5 mm minimum Immersion time 5 ± 1 seconds Flux Rosin resin methyl alcohol solvent (1 : 4)	MIL-STD-883E

2. Environmental Endurance

No.	Test Item	Test Methods	REF. DOC
2.1	Resistance To Soldering Heat	Pre-heat temperature 125 Pre-heat time 60 ~ 120 sec. Test temperature 260 ± 5 Test time 10 ± 1 sec.	MIL-STD-202F
2.2	High Temp. Storage	+ 125 ± 3 for 500 ± 12 hours	MIL-STD-883E
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-883E
2.5	High Temp & Humidity	85 ± 3 , RH 85% , 500Hrs	JIS C5023