TXC CORPORATION

www.txccorp.com

SPECIFICATION FOR APPROVAL

CUSTOMER	:	
PRODUCT TYPE	:	SMD SEAM SEALING X'TAL 2.0 × 1.6
NOMINAL FREQ.	:	48.000000MHz
TXC P/N	:	8Y48000016
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.

Attachment: Product Specification Sheet

1
2
3
4
5

RoHS Compliant

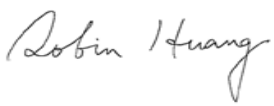
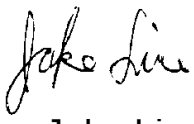
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PRODUCT SPECIFICATION SHEET

PRODUCT TYPE	:	SMD SEAM SEALING X'TAL 2.0 × 1.6
NOMINAL FREQ.	:	48.000000MHz
TXC P/N	:	8Y48000016
REVISION	:	A1

PE/RD	QA	MFG
 Robin Huang	 Samson Xiong	 Jake Liu
22-Feb-17	*22-Feb-17*	*22-Feb-17*

NOTE:

(1)The green product standard set by TXC is based upon the international standards. Related information is publicly described on the TXC's Website, and updated regularly. The document is compliant with the latest green product quality system directives at the time.

(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

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Rev	Revise page	Revise contents	Date	Ref.No.	Reviser
S1	N/A	Initial released	12-Dec-15	N/A	Xiaoyan Jiang
S2	3	Add Test Condition:Network Analyzer E5100A Load Capacitance 8pF	17-Mar-16	PNR16031111	Xiaoyan Jiang
A1	N/A	S Turn A	22-Feb-17	N/A	Xiaoyan Jiang

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Spec Sheet Contents

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3	MARKING	P.4
4	FACTORY LOCATION	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&HANDING CAUTIONS	P.8～9

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■ 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 S&A250B or equivalent.

Crystal cutting type

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

Unit Weight:

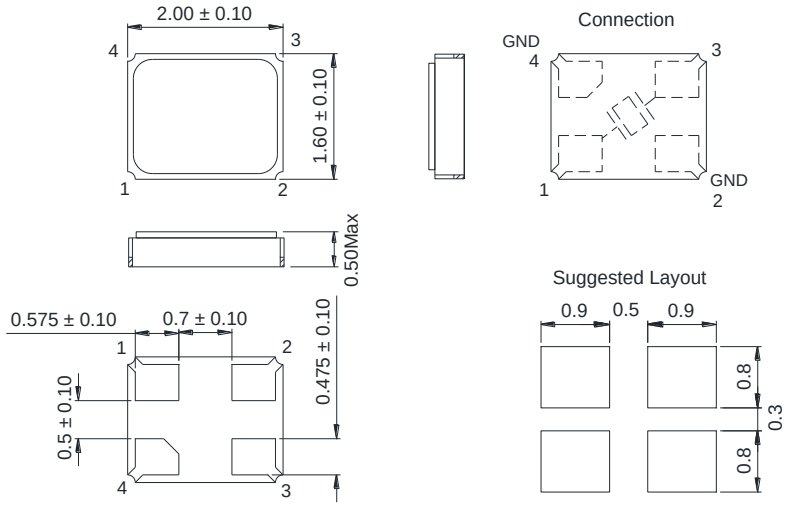
0.005±0.002 g/pcs

	Parameters	Symbol	Electrical Spec.				Notes
			Min.	Typ.	Max.	Units	
1	Nominal Frequency	FL		48.000000		MHz	-
2	Oscillation Mode	-		Fundamental		-	-
3	Load Capacitance	CL		8		pF	Test Condition:Network Analyzer E5100A
				10			Test Condition:Saunders (S&A) Network Analyzer 250B
4	Frequency Tolerance	-		±8		ppm	at 25 ℃ ± 3 ℃
5	Frequency Stability	-		±16		ppm	Over Operating Temp. Range (Reference 25℃)
6	Operating Temperature	-	-40	~	105	℃	-
7	Aging	-		±2		ppm	5 Years
8	Drive Level	DL	-	100	-	uW	-
9	Equivalent Series Resistance	Rr	-	-	22	Ω	-
10	Shunt Capacitance C0	C0	0.64	0.84	1.04	pF	-
11	Motional Capacitance C1	C1	2.16	3.16	4.16	fF	-
12	Motional Inductance L1	L1	1	3.49	4	mH	-
13	Insulation Resistance	-	500	-	-	MΩ	at DC 100V
14	Storage Temperature Range	-	-40	~	105	℃	-

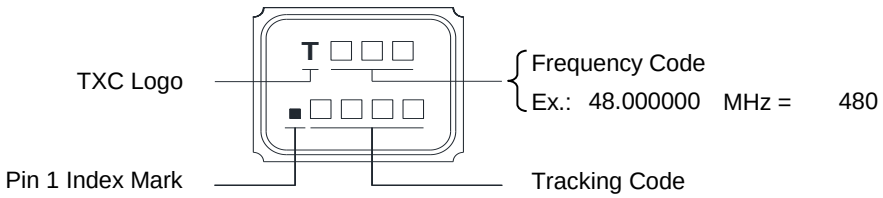
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■ DIMENSIONS

(Unit:mm)



■ MARKING

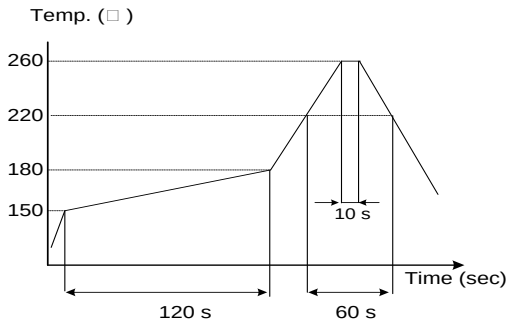


Production Location:Taiwan, China(Ningbo)

■ SUGGESTED REFLOW PROFIL

Total time : 200 sec. Max.

Solder melting point :220 ℃



■ SUGGESTED MANUAL SOLDER CONDITION

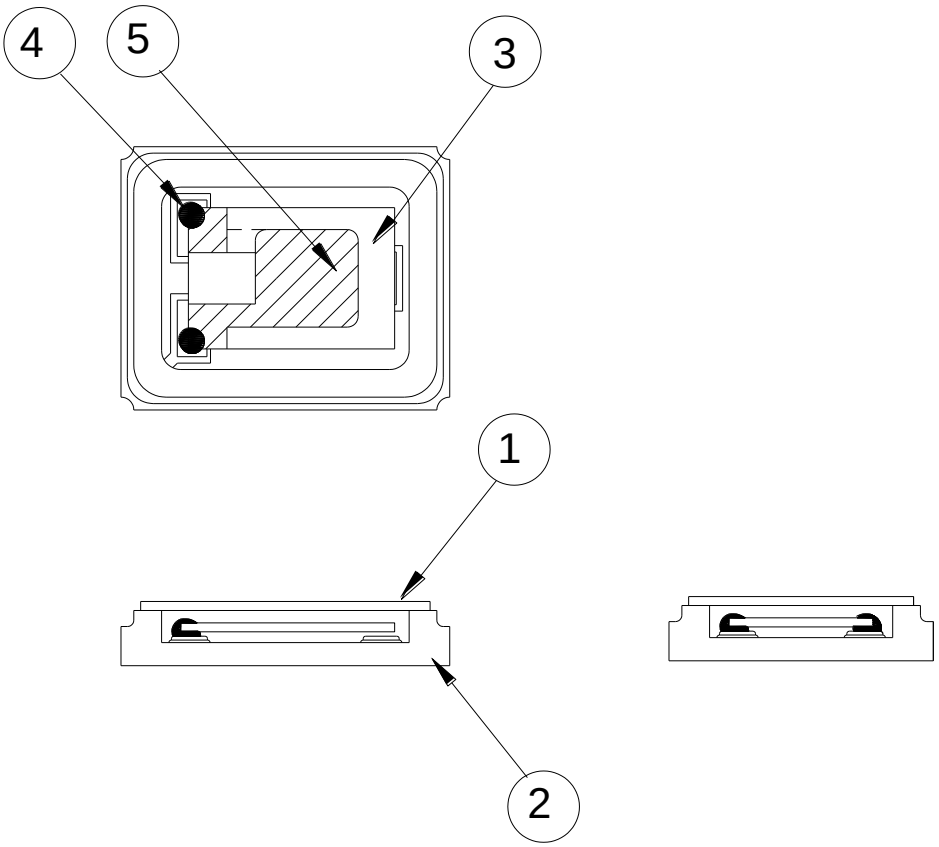
Temperature: 350 ± 10 ℃

Time: 3 sec.

Re-solder times: twice

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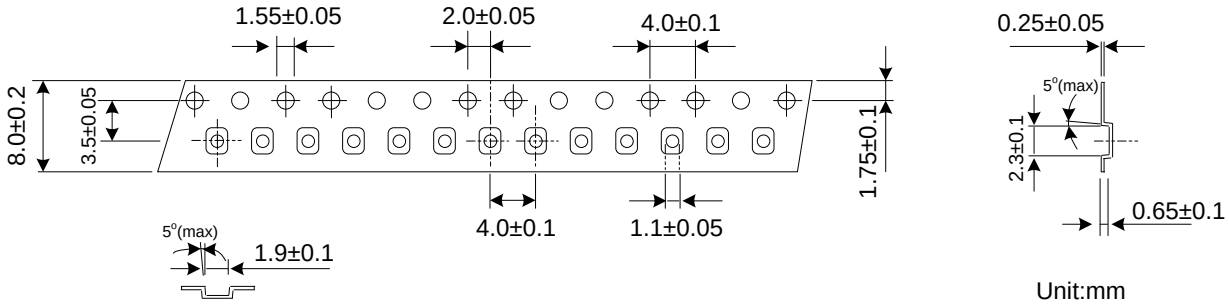
STRUCTURE ILLUSTRATION



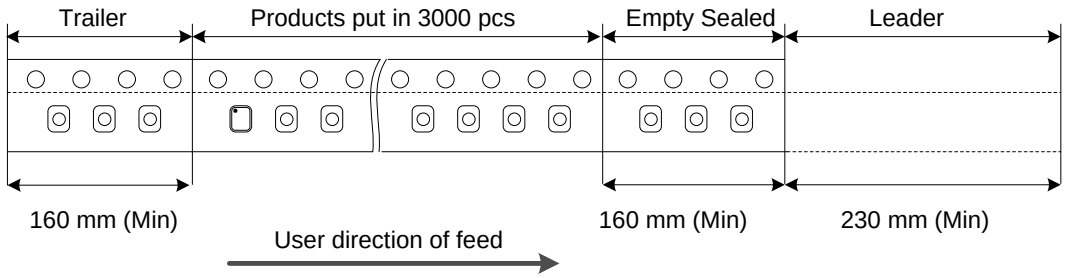
NO	COMPONENTS	MATERIALS	FINISH/SPECIFICATIONS
1	Lid	Kovar (Fe/Co/Ni)	-
2	Base(Package)	Ceramic (Al_2O_3) + Kovar (Fe/Co/Ni)+Pad(Au)	Tungsten metalize + Ni plating + Au plating
3	Crystal blank	SiO_2	-
4	Conductive adhesive	Resin+Ag	-
5	Electrode	Noble Metal	-

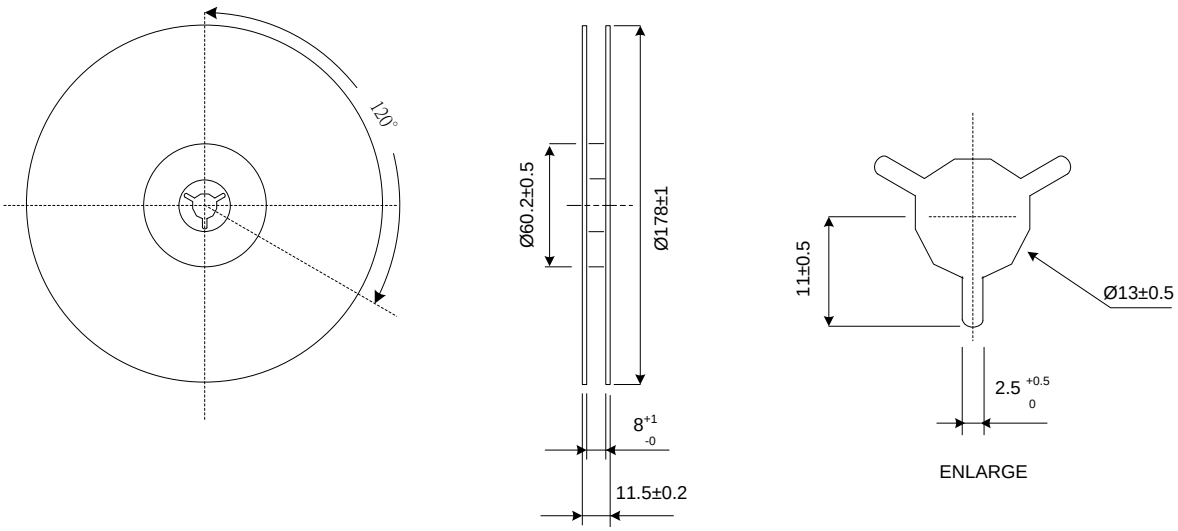
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■ PACKING



REMARK :





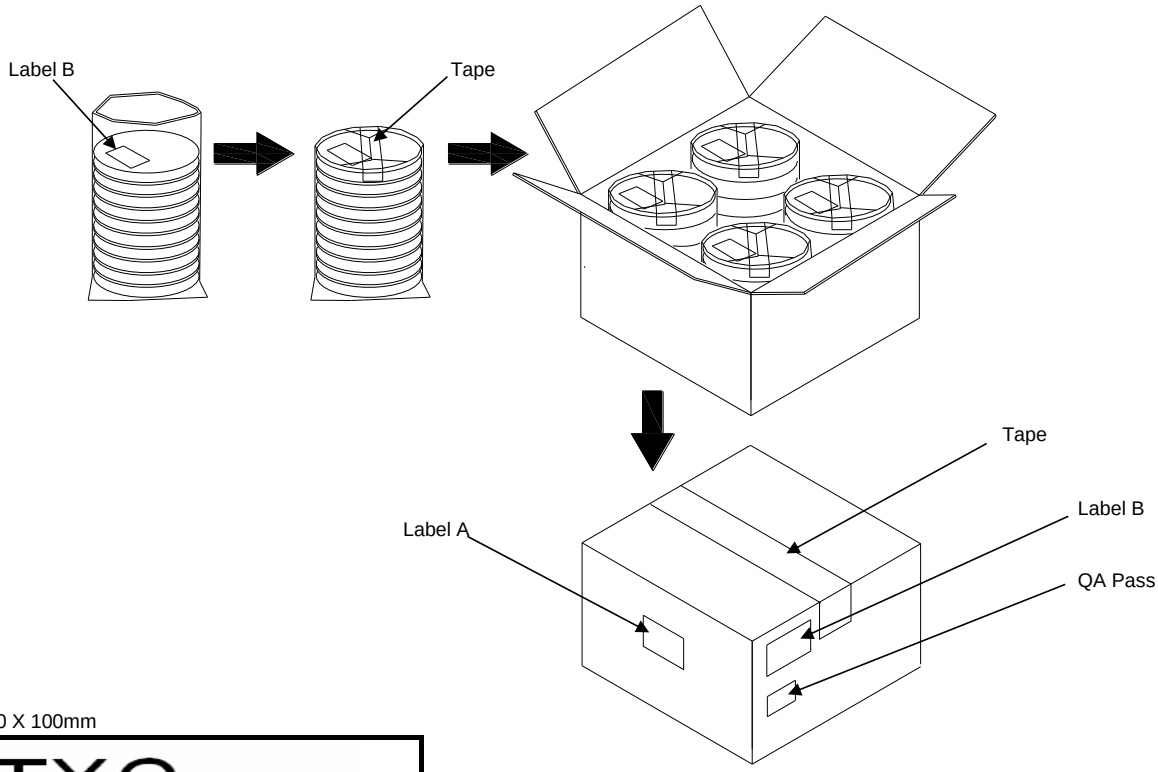
Standard Reel Quantity is 3,000 pcs per reel

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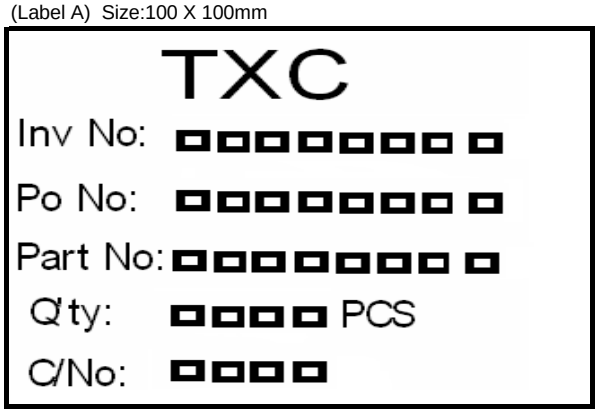
■ PACKING

Reel Quantity :
1. Reel X 6 (6 Reels)
2. Reel X 12 (12 Reels)
3. Reel X 25 (12 Reels + 13 Reels)
4. Reel X 50 (12 Reelsx2 + 13 Reelsx2)

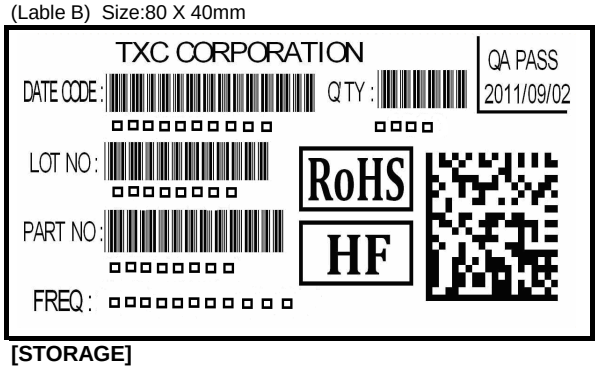
Box Size:
1. L200 X W200 X H140mm
2. L200 X W200 X H250mm
3. L400 X W200 X H250mm
4. L400 X W400 X H280mm



(Label A) Size:100 X 100mm



(Lable B) Size:80 X 40mm



[STORAGE]

1.Don't be caught in the rain.

2.The storage environment shall be 5℃ ~40℃ temperature and 30% ~ 75%RH humidity and free from the sun shine.

3.If customers have special requirements, we can paste labels according to it.

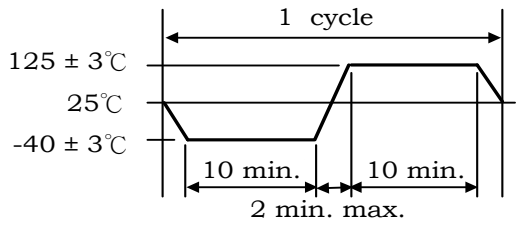
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■ RELIABILITY SPECIFICATIONS

1.Mechanical Endurance

No.	Test Item	Test Methods	Test Criteria
1	Drop Test	150 cm height, 3 times on concrete floor.	A . C
1	Mechanical Shock	Device are shocked to half sine wave (1000 G) three mutually perpendicular axes each 3 times. 0.5m sec. duration time	A . C
1	Vibration	Frequency range 10 ~ 2000 Hz Amplitude 1.52 mm/20G Sweep time 20 minutes perpendicular axes each test time 4 Hrs (Total test time 12 Hrs)	A . C
1	Gross Leak	Standard Sample For Automatic Gross Leak Detector, Test Pressure: 2kg / cm^2	F
2	Fine Leak	Helium Bombing 4.5 kg/ cm^2 for 2 Hrs	G
2	Solder ability	Temperature 240 ℃ ± 5℃ Immersing depth 0.5 mm minimum Immersion time 5 ± 1 seconds Flux Rosin resin methyl alcohol solvent (1 : 4)	E

2.Environmental Endurance

No.	Test Item	Test Methods	Test Criteria
2	Resistance To Soldering Heat	Pre-heat temperature 125 ℃ Pre-heat time 60 ~ 120 sec. Test temperature 260 ± 5 ℃ Test time 10 ± 1 sec.	B . C . D
2	High Temp. Storage	+ 125 ℃ ± 3 ℃ for 500 ± 12 Hrs	B . C . D
2	Low Temp. Storage	- 40 ℃ ± 3 ℃ for 500 ± 12 Hrs	
2	Temperature cycle	Total 100 cycles of the following temperature cycle 	B . C . D
3	High Temp＆Humidity	85℃ ± 3℃, RH 85% , 500Hrs	B . C . D

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RELIABILITY SPECIFICATIONS

	Specifications
A	Frequency change: Within ±5ppm or in customer's specification.
B	Frequency change: Within ±10ppm or in customer's specification.
C	Equivalent series resistance(E.S.R) change: Within ±15% or 10Ω(larger value).
D	After conditioning , quartz crystal units shall be subjected to standard atmospheric conditions for 2 hour, and measured.
E	Minimum 95% of immersed terminal shall be covered with new uniform solder.
F	Leak rate< 1×10^{-5} Pa*m^3/Sec
G	Leak rate< 4×10^{-9} Pa*m^3/Sec

Measurement condition

Electrical characteristics measured by S&A250B or equivalent.

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