TXC CORPORATION

www.txccorp.com

SPECIFICATION FOR APPROVAL

CN: 0

CUSTOMER	:	
PRODUCT TYPE	:	SMD SEAM SEALING X'TAL 3.2×2.5
NOMINAL FREQ.	:	27.000000MHz
TXC P/N	:	AM27000302
REVISION	:	S1
CUSTOMER P/N	:	
PM / SALES	:	
DATE	:	
CUSTOMER CONFIRMATION	:	(Singnature)
		(Date)

MSL:Level 1

RoHS Compliant

(for glass crystal only：Pb used in sealing glass material is exempt from EU directive)

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PE/RD	QA	MFG
Wen yuan Chang Wen yuan Chang		
27-Jun-16		

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

MSL:Level 1

RoHS Compliant

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Rev	Revise page	Revise contents	Date	Ref.No.	Reviser
S1	N/A	Initial released	27-Jun-16	N/A	Xiaoyan Jiang

Spec Sheet Contents

■ 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℃

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&A 250B or equivalent.

Crystal cutting type

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

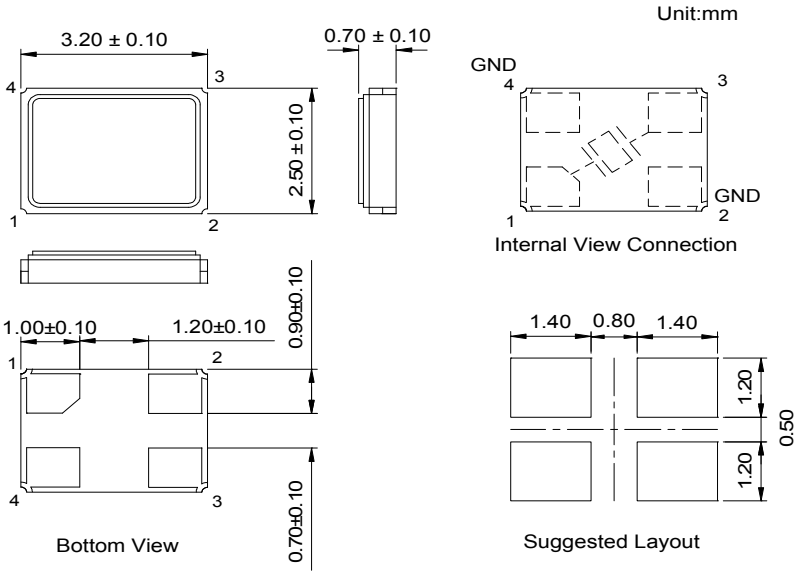
Unit Weight:

0.017±0.002 g/pcs

	Parameters	SYM.	Electrical Spec.				Notes
			MIN	TYPE	MAX	UNITS	
1	Nominal Frequency	FL		27.000000		MHz	-
2	Oscillation Mode	-		Fundamental		-	-
3	Load Capacitance	CL		12		pF	-
4	Frequency Tolerance	-		±30		ppm	at 25 ℃ ± 3 ℃
5	Frequency Stability	-		±30		ppm	Over Operating Temp. Range (Reference 25℃)
6	Operating Temperature	-	-40	~	105	℃	-
7	Aging	-		±3		ppm	1st Year
8	Drive Level	DL	-	50	100	μW	-
9	Effective Resistance Rr	Rr	-	-	50	Ω	-
10	Shunt Capacitance C0	C0	-	-	3	pF	-
11	Insulation Resistance	-	500	-	-	MΩ	at DC 100V
12	Storage Temperature Range	-	-40	~	105	℃	-

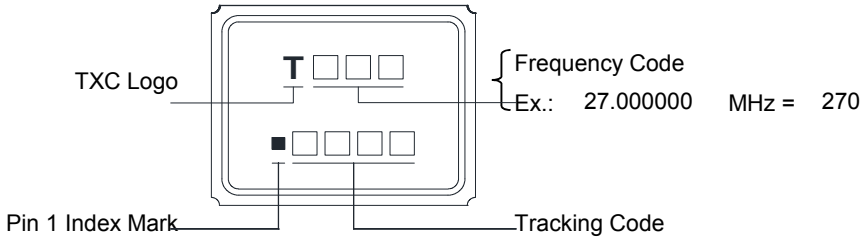
■ DIMENSIONS

(Unit:mm)



*Coplanarity of solderable areas Camber 0.10 mm Max

■ MARKING

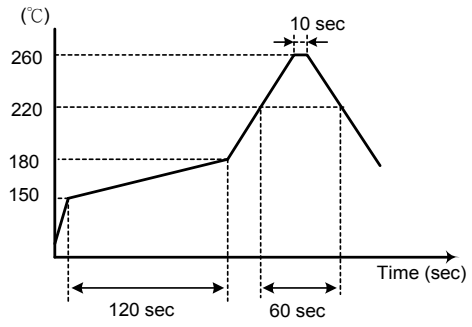


Production Location:China(Ningbo)

■ SUGGESTED REFLOW PROFILE

Solder melting point :220±10 ℃, 60 sec. Min.

Peak Temperature: 260 ± 5 ℃, 10 sec. Max.



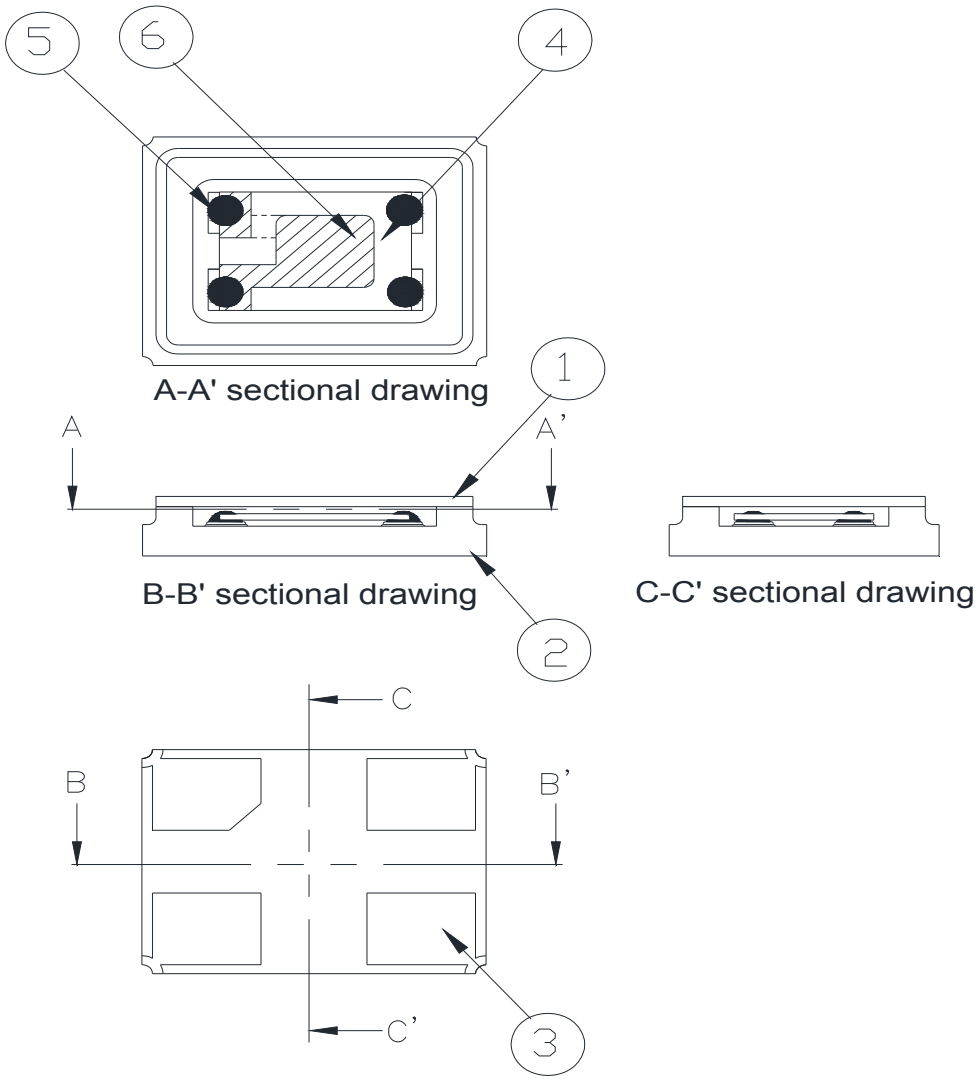
■ SUGGESTED MANUAL SOLDER CONDITION

Temperature: 350 ± 10 ℃

Time: 3 sec.

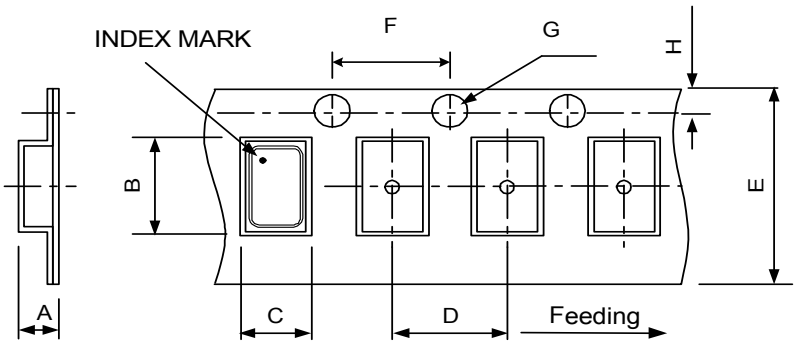
Re-solder times: twice

STRUCTURE ILLUSTRATION



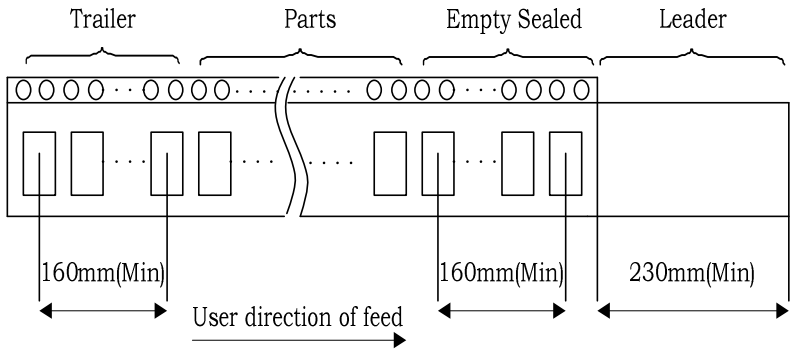
NO	COMPONENTS	MATERIALS	FINISH/SPECIFICATIONS
1	Lid	Kovar (Fe/Co/Ni)	-
2	Package	Ceramic (Al_2O_3) + Kovar (Fe/Co/Ni)+ Ag/Cu	-
3	PAD	Au	Tungsten metalize + Ni plating + Au plating
4	Crystal blank	SiO_2	-
5	Conductive adhesive	Resin+Ag	Silicon resin
6	Electrode	Noble Metal	-

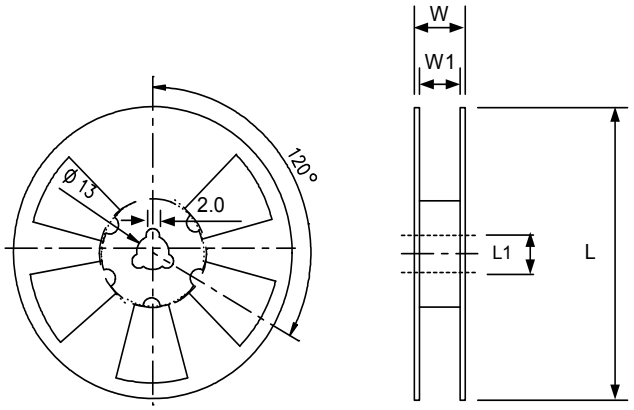
■ PACKING



DIMENSIONS	A	B	C	D	E	F	G	H	
	1.65±0.01	3.40±0.01	2.70±0.01	4.00±0.01	8.00±0.02	4.00±0.01	1.50±0.01	1.75±0.01	(UNIT : mm)

REMARK :



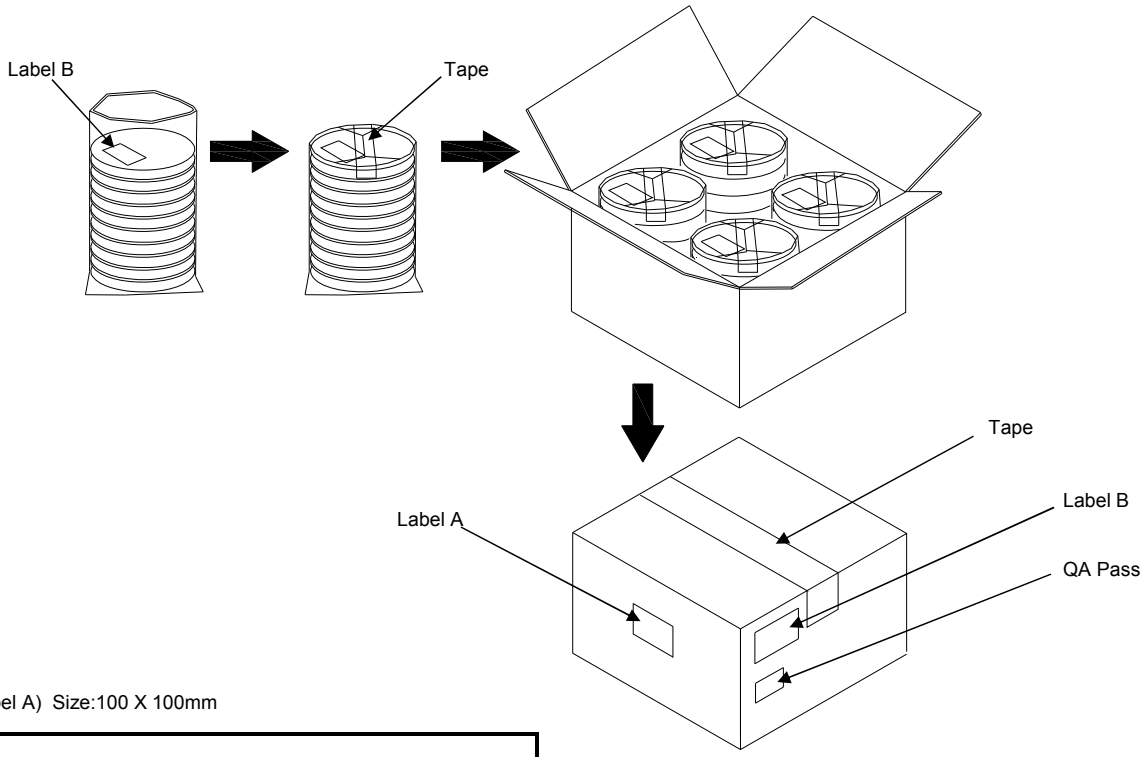


DIMENSIONS	L	L1	W	W1	pcs / Reel (UNIT : mm)
	178±1.0	13±0.5	11.5±0.2	8±0.1	Standard Reel Quantity is 3,000 pcs per reel

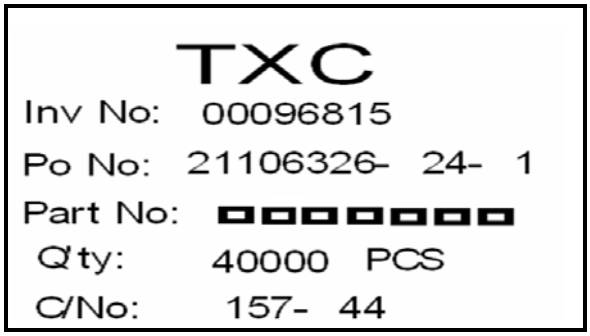
■ PACKING

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)

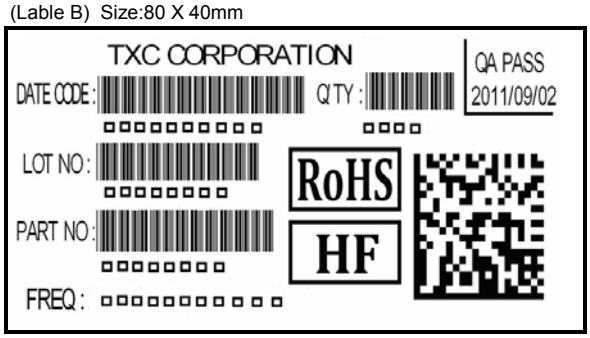
Box Size:
1. L200 X W200 X H140mm
2. L200 X W200 X H250mm
3. L400 X W200 X H250mm
4. L400 X W400 X H280mm



(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.

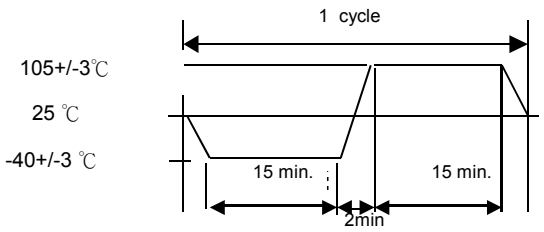
3.If customers have special requirements, we can paste labels according to it.

■ RELIABILITY SPECIFICATIONS (AEC-Q200 Compliant)

1.Mechanical Endurance

No.	Test Item	Test Methods		Test Criteria
1	Mechanical Shock	2000 G , 0.3 m Sec. ,3 times for all 3 directions.		B C
1	Vibration	Frequency range Acceleration Amplitude Sweep time Pendicular axes each test time	10 ~ 2000 Hz 20G 1.52mm 20 minute 4 hours (Total test time 12 hours)	B C
1	Terminal Strength	17.7N force for 60sec +/-1sec.		F
1	Board Flex	Duration time:60 Sec Minimum,Deviation:3mm		B C
2	Solderability	Temperature Immersing depth Immersion time Flux	245 °C +/- 5°C 0.5 mm minimum 5 +/- 0.5 seconds Rosin resin methyl alcohol solvent (1 : 4)	E

2.Environmental Endurance

No.	Test Item	Test Methods		SPEC
2	Resistance To Soldering Heat	Test temperature Test time	260 +/- 5 °C 10 +/- 1 sec.	BCD
2	High Temp. Storage	+ 105℃ ± 3 ℃ for 1000 ± 12 Hrs		BCD
2	Low Temp. Storage	- 40 ℃ ± 3 ℃ for 1000 ± 12 Hrs		BCD
2	Temperature cycle	-40℃~105℃,for 1000 cycles. 		BCD
3	Operational Life	1000 hrs @ 105± 3°C. Rated VDD applied with 1 MΩ.		BCD
3	High Temp&Humidity	85℃ ± 3℃ , RH 85% , 1000 Hrs		BCD

■ 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 24 hour, and measured.
E	Minimum 95% of immersed terminal shall be covered with new uniform solder.
F	No damage on specimen

Measurement condition

Electrical characteristics measured by S&A250B or equivalent.