TXC CORPORATION

www.txccorp.com

SPECIFICATION FOR APPROVAL

CN: _____

CUSTOMER	:	
PRODUCT TYPE	:	SMD X'TAL 2.0×1.6
NOMINAL FREQ.	:	27.000000MHz
TXC P/N	:	AY27000003
REVISION	:	S2
CUSTOMER P/N	:	
PM / SALES	:	
DATE	:	
CUSTOMER CONFIRMATION	:	(Singnature)
		(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.

MSL:Level 1

RoHS Compliant

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

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PRODUCT SPECIFICATION SHEET

CN: _____

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NOMINAL FREQ.	:	27.000000MHz
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REVISION	:	S2

PE/RD	QA	MFG
Minglin Tseng Minlin Tseng		
19-Apr-17		

NOTE:

(1) TXC green product standard is based on the international standards. Relevant information is posted on the TXC website and updated regularly. The documentation is subject to the latest green product quality system.

(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

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

Rev	Revise page	Revise contents	Date	Ref.No.	Reviser
S1	N/A	Initial released	18-Aug-15	PNR15072904	Yoyo Wang
S2	3 & 4	1.Production location add China 2.Add SUGGESTED MANUAL SOLDER CONDITION 3.Correct STRUCTURE ILLUSTRATION typing error	19-Apr-17	PNR17041913	Jasmine Yeh

■ ELECTRICAL SPECIFICATIONS

Standard conditions

Ambient temperature : 25±5℃

Relative humidity : 40%~70%

In addition to special specifications, are measured in the standard environment.

Ambient temperature : 25±3℃

Relative humidity : 40%~70%

If there is any doubt about the result, it is necessary to make measurements in the standard environment.

Measure equipment

Electrical characteristics measured by S&A 250B or equivalent.

Crystal cutting type

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

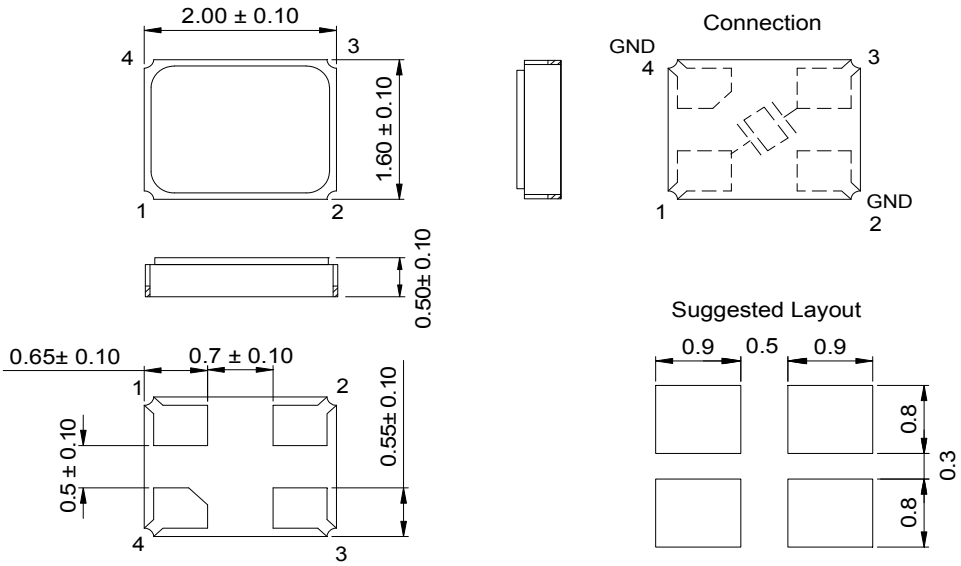
Unit Weight:

0.0065±0.001 g/pcs

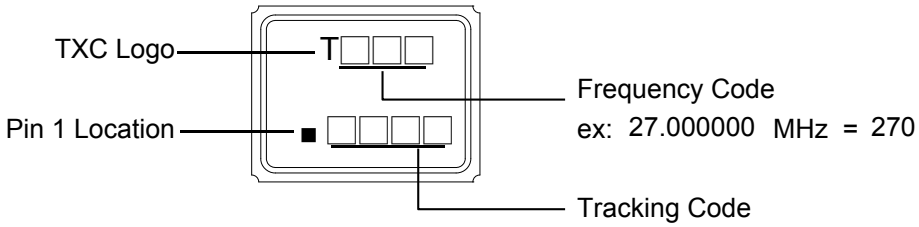
	Parameters	SYM.	Electrical Spec.				Notes
			MIN	TYPE	MAX	UNITS	
1	Nominal Frequency	FL		27.000000		MHz	-
2	Oscillation Mode	-		Fundamental		-	-
3	Load Capacitance	CL		8		pF	-
4	Frequency Tolerance	-		±30		ppm	at 25 ℃ ± 3 ℃
5	Frequency Stability	-		±30		ppm	Over Operating Temp. Range (Reference 25℃)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

■ DIMENSIONS

(Unit:mm)



■ MARKING

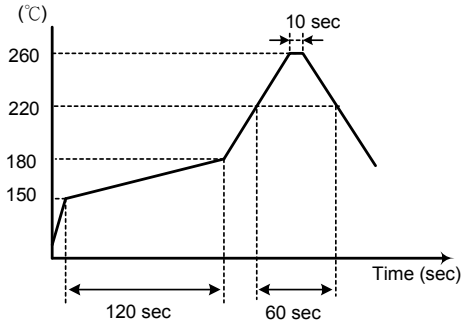


Production location: Taiwan or China

■ SUGGESTED REFLOW PROFILE

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

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



■ SUGGESTED MANUAL SOLDER CONDITION

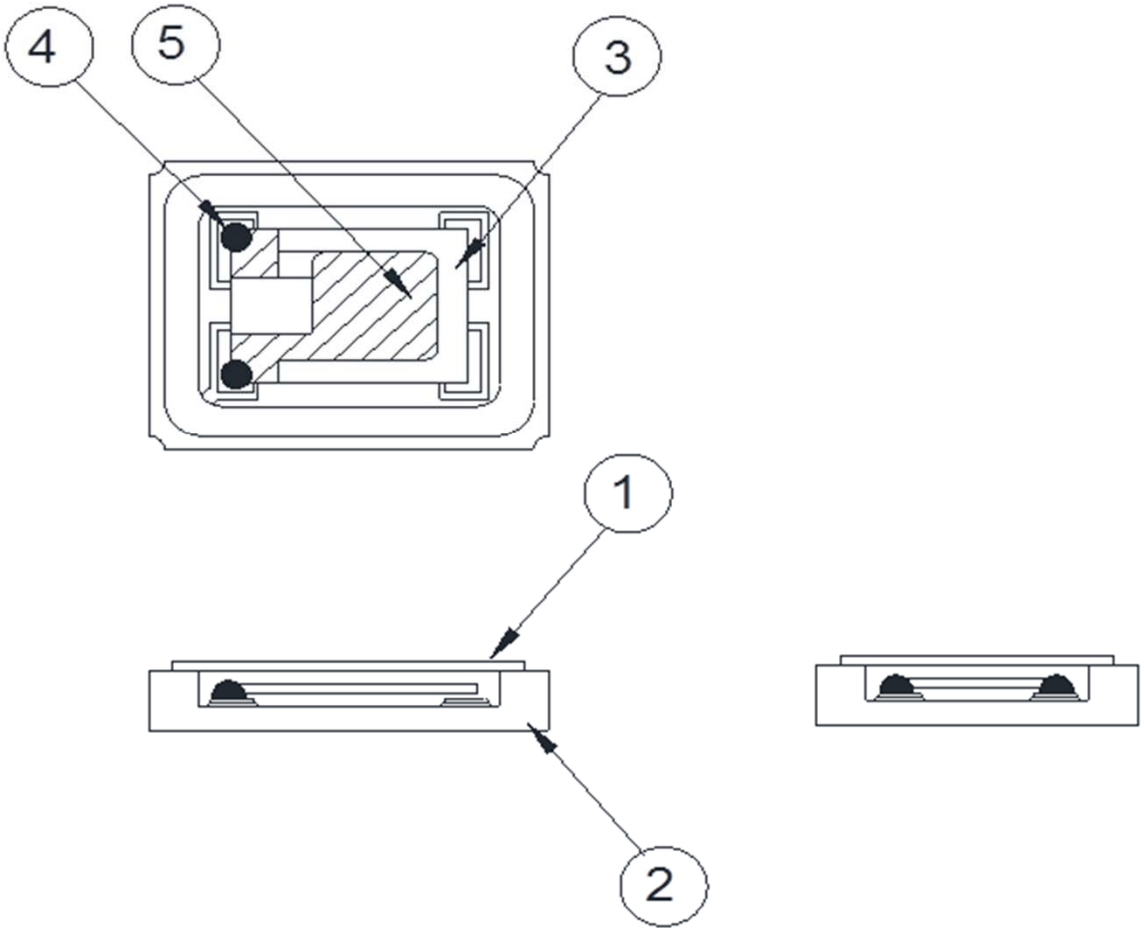
Temperature: 350 ± 10 ℃

Time: 3 sec.

Re-solder times: twice

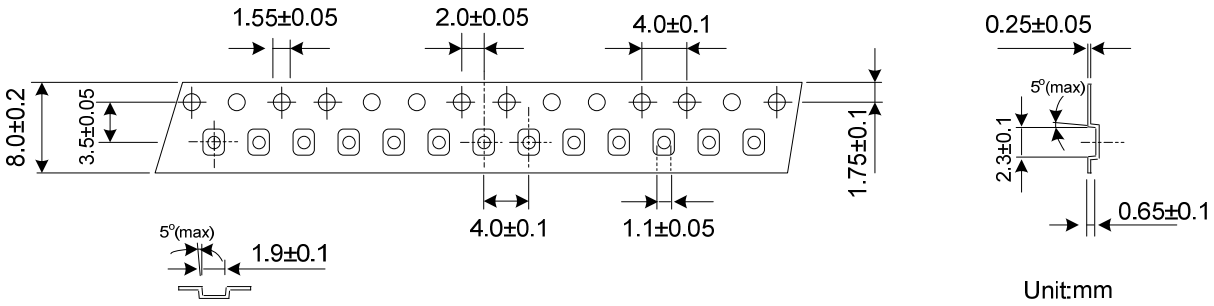
NOTE: After welding manually, the product should be placed at least 2 hours.

■ STRUCTURE ILLUSTRATION

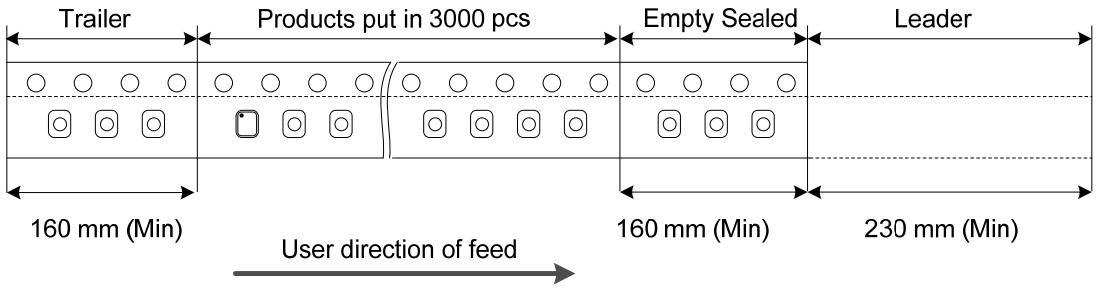


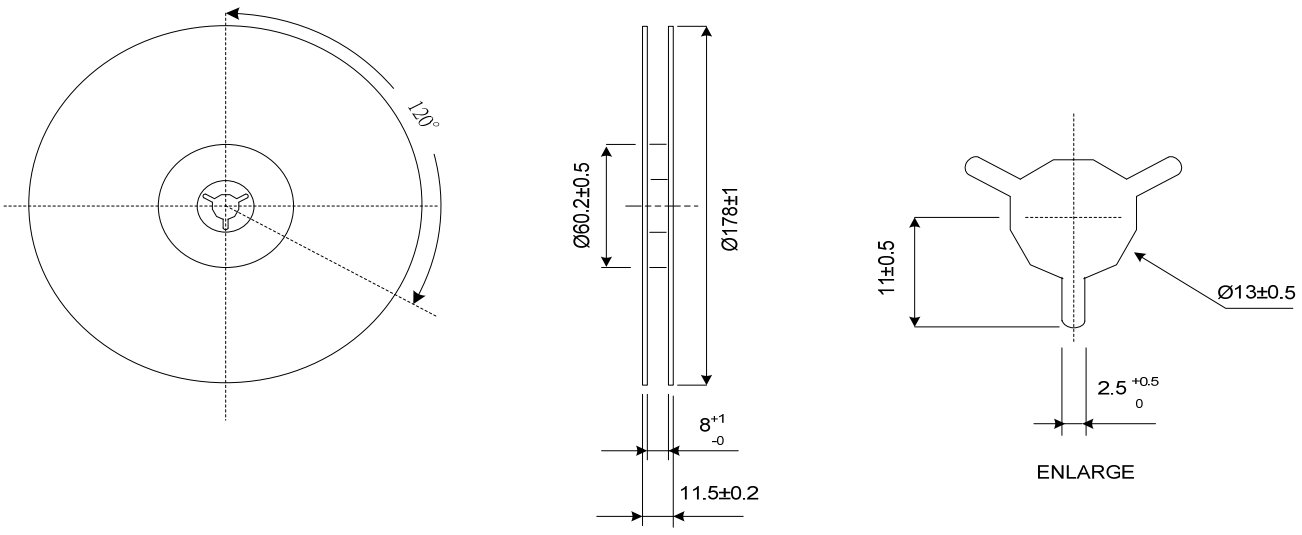
NO	COMPONENTS	MATERIALS	FINISH/SPECIFICATIONS
1	Lid	Kovar	-
2	Base(Package)	Ceramic (Al_2O_3)+Pad(Au)	Alumina ceramics
3	Crystal blank	SiO2	-
4	Conductive adhesive	Ag	Silicone resin
5	Electrode	Noble Metal + Cr	-

■ PACKING



REMARK :



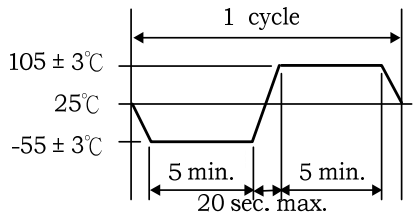


■ RELIABILITY SPECIFICATIONS (AEC-Q200 Compliant)

1.Mechanical Endurance

No.	Test Item	Test Methods	REF.DOC
1.1	Drop Test	120 cm height, 10 times on Stainless Plate .	JIS C 6701
1.2	Mechanical Shock	Device are shocked to half sine wave (3000 G) three mutually perpendicular axes each 3 times. 0.3m sec. duration time	MIL-STD-202 Method 213
1.3	Vibration	Frequency range 10 ~ 2000 Hz~10 Hz Amplitude 1.52 mm/10G Sweep time 20 minute Perpendicular axes each test time 4 Hrs (Total test time 12 Hrs)	MIL-STD-202 Method 204
1.4	Solderability	Temperature 245 ℃ ± 5℃ Immersing depth 1.25 mm Immersion time 5 ± 1 seconds Flux Rosin resin methyl alcohol solvent (1 : 4)	J-STD-002
1.5	Terminal Strength	Mount on PCB board and shear strength 1.8kg for 60 sec.	AEC-Q200-006
1.6	Board Flex	Duration Time: 60 sec, Deviation: 3mm	AEC-Q200-005

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 202 Method 210
2.2	High Temp. Storage	+ 105 ℃ ± 3 ℃ for all 1000 Hrs.	MIL-STD-202 Method 108
2.3	Low Temp. Storage	- 40 ℃ ± 3 ℃ for all 1000 Hrs.	JIS C 6701
2.4	Thermal Shock	Total 1000 cycles of the following Thermal Shock : 	MIL-STD-202 Method 107
2.5	Temperature Cycle	Total 1000 cycles of the following temperature cycle : - 40℃ ± 3 to 105℃ ± 3 , Dwell time:15min.	JESD 22 Method JA-104
2.6	Biased Humidity	+ 85℃ ± 3℃ , RH 85% , 1000 Hrs.	MIL-STD-202 Method 103
2.7	Moisture Resistance	20 cycles (+25℃~65℃ , 80%~100% RH) , 24hrs/cycle.	MIL-STD 202 Method 106
2.8	Operational Life	+ 105 ℃ ± 3 ℃ for 1000 Hrs.	MIL-STD-202 Method 108

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