



# SPECIFICATION FOR APPROVAL

CN: 0

CUSTOMER : \_\_\_\_\_

PRODUCT TYPE : SMD TUNING FORK 3.2X1.5

NOMINAL FREQ. : 32.768KHz

TXC P/N : AH03200023

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

**Halogen Free  
RoHS Compliant**



# PRODUCT SPECIFICATION SHEET

CN: \_\_\_\_\_

PRODUCT TYPE : SMD TUNING FORK 3.2X1.5

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NOMINAL FREQ. : 32.768KHz

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REVISION : A1

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RD	QA	MFG
<i>Wen yuan Chang</i> Wen yuan Chang	<i>ZhongLin Wu</i> ZhongLin Wu	<i>Zhi Jun Wu</i> Zhi jun Wu
15-Jan-19	15-Jan-19	15-Jan-19

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

**Halogen Free  
RoHS Compliant**

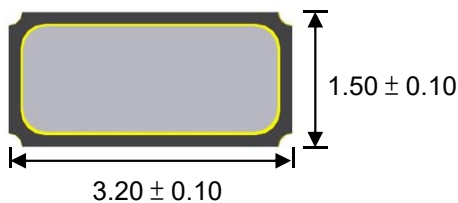


**ELECTRICAL SPECIFICATIONS**

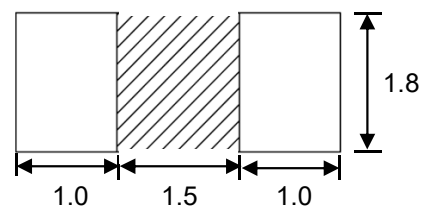
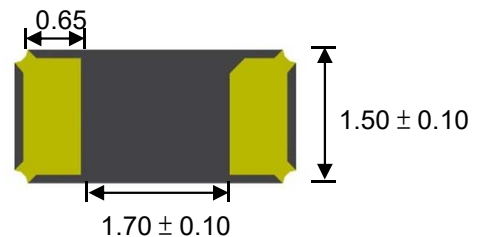
	Parameters	Sym.	Electrical Spec.				Notes
			Min	Typ	Max	Unit	
1	Nominal Frequency	F0	32.768			KHz	-
2	Frequency Tolerance	$\Delta f/f_0$	$\pm 15$			ppm	at 25 °C $\pm 3^\circ\text{C}$
3	Load Capacitance	CL	6.0			pF	-
4	Driver Level	DL	-	0.1	-	$\mu\text{W}$	-
5	Equivalent Series Resistance	ESR	-	-	70	K $\Omega$	at 25 °C $\pm 3^\circ\text{C}$
6	Turnover Temperature	Tp	20	25	30	°C	at 25 °C $\pm 5^\circ\text{C}$
7	Parabolic Curvature Constant	K	-	-	-0.04	ppm/°C <sup>2</sup>	-
8	Operating Temperature	-	-40	~	105	°C	-
9	Storage Temperature	-	-40	~	105	°C	-
10	Shunt Capacitance	C0	-	-	1.8	pF	-
11	Motional Capacitance	C1	-	-	-	fF	-
12	Insulation Resistance	IR	500	-	-	M $\Omega$	at DC 100V $\pm 15\text{V}$
13	Aging	$\Delta f/f$	$\pm 3$			ppm	1st Year

**DIMENSIONS**

(UNIT:mm)

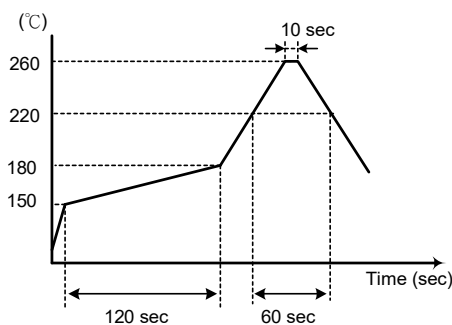
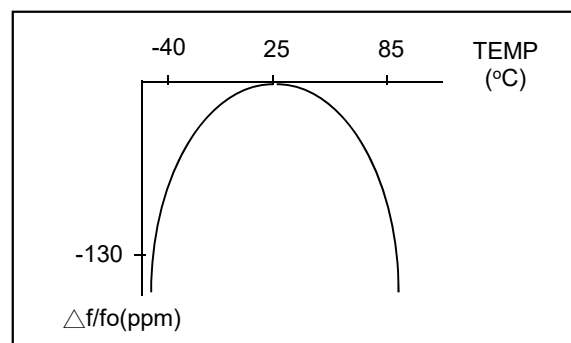

**RECOMMENDED SOLDER PAD**

(UNIT:mm)

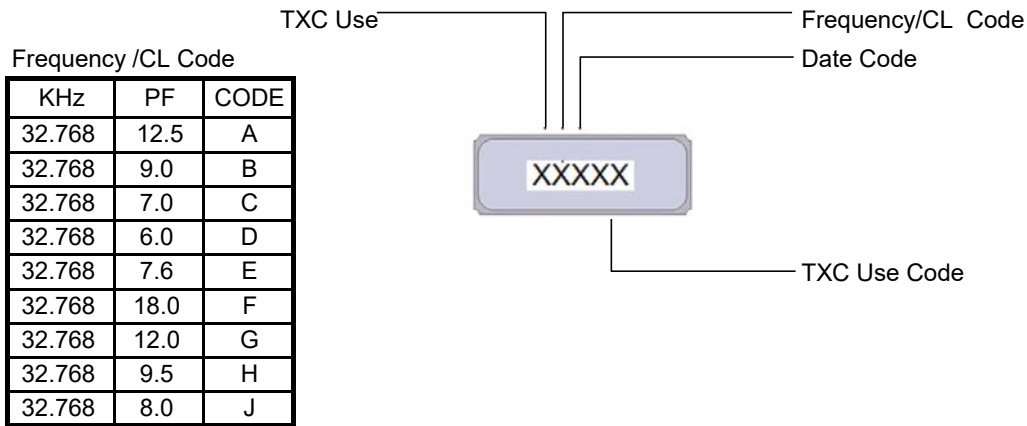

**SUGGESTED REFLOW PROFILE**

Total time : 200 sec. Max.

Solder melting point : 220°C

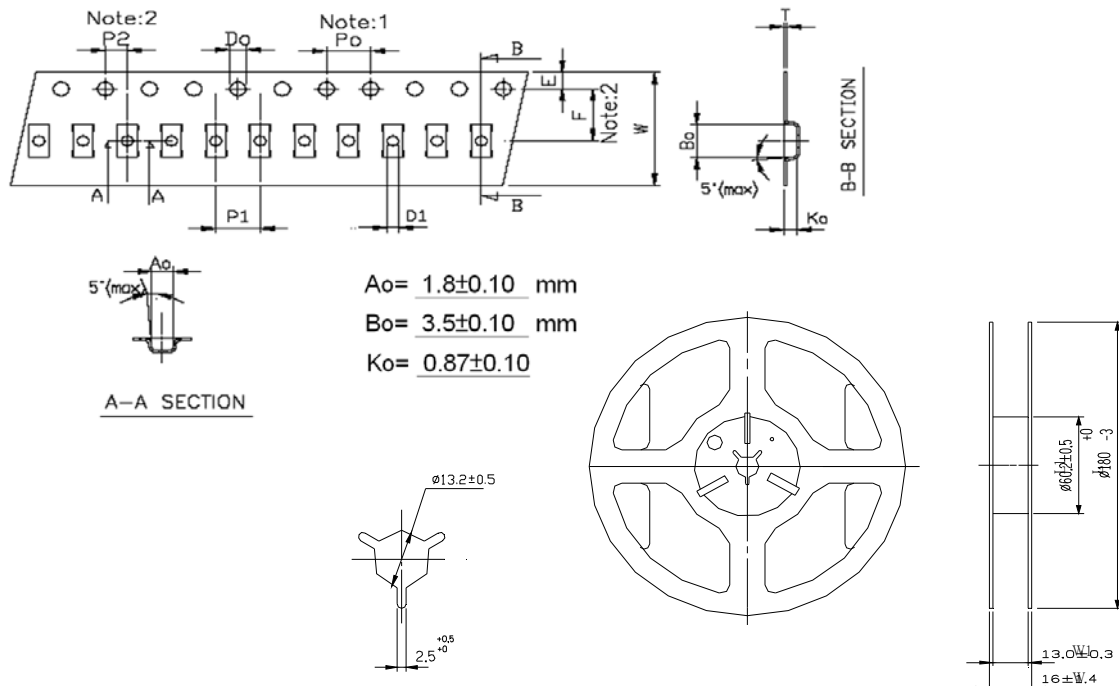

**TEMPERATURE V.S FREQUENCY CURVE**


**MARKING**



This date code will be cycled every four years

**PACKING**



CARRIER TAPE DIMENSIONS	K1	P0	P1	P2	D0	D1	E	F	10P0	W	T	pcs / Reel
	-	4	4	2	1.55	1.1	1.75	5.5	40	12	0.25	3K

REEL DIMENSIONS	W	W1	L	L1
	16±1.4	13±0.3	180+0/-3	60.2±0.5

- REMARK :
- 230 mm (9.05) minimum leader which consist of carrier and/or tape followed by a minimum of 160 mm (6.3) of empty carrier tape sealed with cover tape.
  - 160 mm (6.3) minimum trailer of empty carrier tape sealed with cover tape.

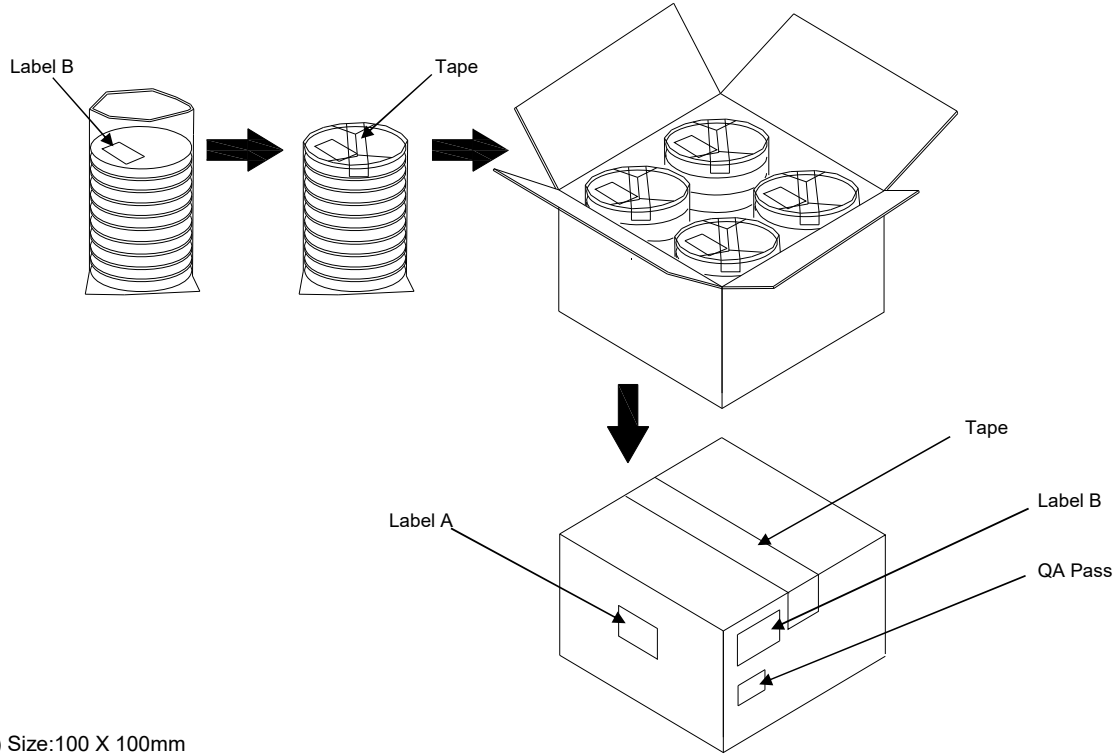
**PACKING**

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

<h1>TXC</h1>
Inv No: 00096815
Po No: 21106326- 24- 1
Part No: <span style="border: 1px solid black; padding: 2px;">□□□□□□□□</span>
Qty: 40000 PCS
C/No: 157- 44

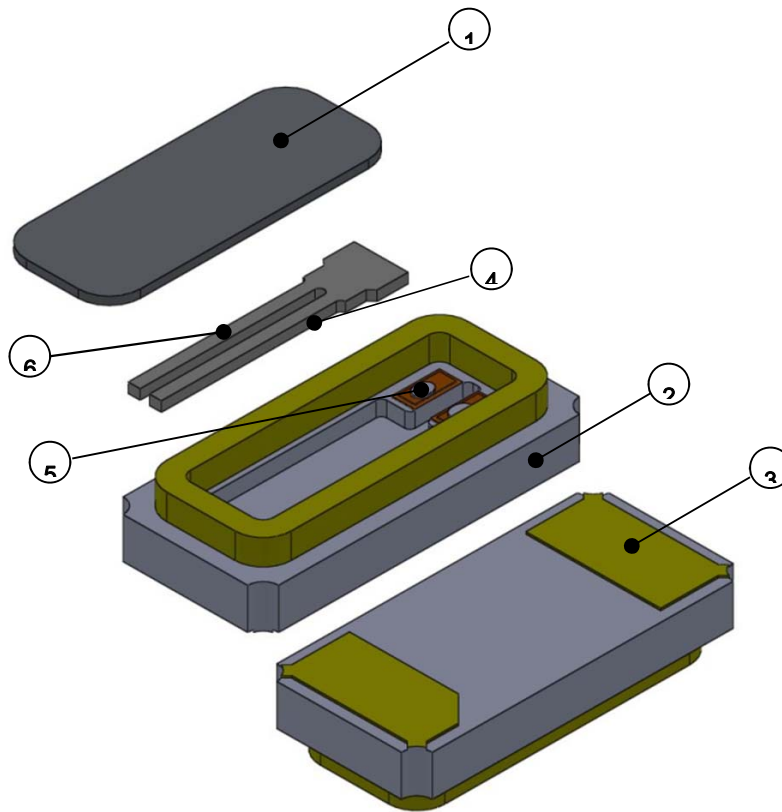
(Label B) Size:80 X 40mm

TXC CORPORATION		QA PASS
DATE CODE:		QTY:
<span style="border: 1px solid black; padding: 2px;">□□□□□□□□</span>		<span style="border: 1px solid black; padding: 2px;">□□□□</span>
LOT NO:		
<span style="border: 1px solid black; padding: 2px;">□□□□□□□□</span>		
PART NO:		
<span style="border: 1px solid black; padding: 2px;">□□□□□□□□</span>		<span style="border: 1px solid black; padding: 2px;">RoHS</span>
<span style="border: 1px solid black; padding: 2px;">□□□□□□□□</span>		<span style="border: 1px solid black; padding: 2px;">HF</span>
FREQ:	<span style="border: 1px solid black; padding: 2px;">□□□□□□□□□□</span>	

**[STORAGE]**

- 1. Don't be caught in the rain.
- 2. The storage environment shall be 5°C ~40°C 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.

■ **STRUCTURE ILLUSTRATION**



NO	COMPONENTS	MATERIALS	FINISH/SPECIFICATIONS
1	Lid	Kovar(Fe+Co+Ni) Alloy	-
2	Base(Package)	Ceramic( $Al_2O_3$ )	Alumina Ceramics
3	PAD	Au	Tungsten metalize + Ni plating + Au plating
4	Crystal chip	$SiO_2$	-
5	Conductive adhesive	Ag	Silicon resin
6	Electrode	Au+Cr	-

■ **UNIT WEIGHT:**

0.01197g/pcs

**■ RELIABILITY SPECIFICATIONS (AEC-Q200 Compliant)**
**1.Mechanical Endurance**

No.	Test Item	Test Methods	REF. DOC
1.1	Drop Test	150 cm height, fall freely onto concrete floor 3 times.	MIL-STD-202
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                      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-883
1.4	Solderability	Temperature                                  245 °C ± 5°C Immersing depth                              0.5 mm minimum Immersion time                                5 ± 1 seconds Flux    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                      125 °C Pre-heat time                                      60 ~ 120 sec. Test temperature                                260 ± 5 °C Test time    10 ± 1 sec.	MIL-STD-202
2.2	High Temp. Storage	+ 105 °C ± 3 °C for 1000 ± 12 hours	MIL-STD-883
2.3	Low Temp. Storage	- 40 °C ± 3 °C for 1000 ± 12 hours	MIL-STD-883
2.4	Temperature cycling	-40°C to 105°C ,10min dwell time at each temperature extreme. 1 min. maximum transition time. <b>1000</b> cycles.	MIL-STD-883
2.5	Pressure Cooker Storage	121 ± 3°C, RH100%, 2 bar, for 240 hours	EIA-JESD22
2.6	High Temp & Humidity	85°C ± 3°C, RH 85% , 1000Hrs	EIA-JESD22



**■ SUGGESTED MANUAL SOLDER CONDITION**

Temperature:  $350 \pm 10$  °C

Time: 3 sec.

Re-solder times: twice

**■ FACTORY LOCATION**

TXC (NINGBO) CORPORATION

NO.189 Huang Shan West Road, Beilun District,

Ningbo Zhejiang China

单击下面可查看定价，库存，交付和生命周期等信息

[>>TXC\(台湾晶技\)](#)