



**TXC CORPORATION**

4F, NO. 16, Sec. 2 Chung Yang S Rd., Peitou, Taipei, Taiwan.

TEL : 886-2-2894-1202 , 886-2-2895-2201 FAX : 886-2-2894-1206 , 886-2-2895-6207

www.txccorp.com

# PRODUCT SPECIFICATION SHEET

PRODUCT TYPE : SMD TA TYPE

NOMINAL FREQ. : 32.768KHz

TXC P/N : 9H03200010

REVISION : A1

PE/RD	QA	MFG
<i>Simon Wang</i>	<i>Tzen Hsieh</i>	<i>Shu-Chen ko</i>
2015/8/4	2015/8/4	2015/8/4

**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**

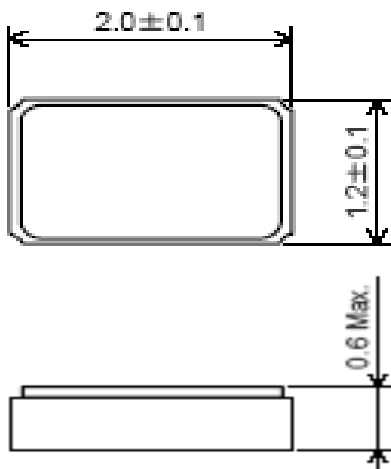
<u>Rev</u>	<u>Revise page</u>	<u>Revise contents</u>	<u>Date</u>	<u>Ref.No.</u>	<u>Reviser</u>
A	NA	Initial release	8-Jul-11	-	Simon Wang

**ELECTRICAL SPECIFICATIONS**

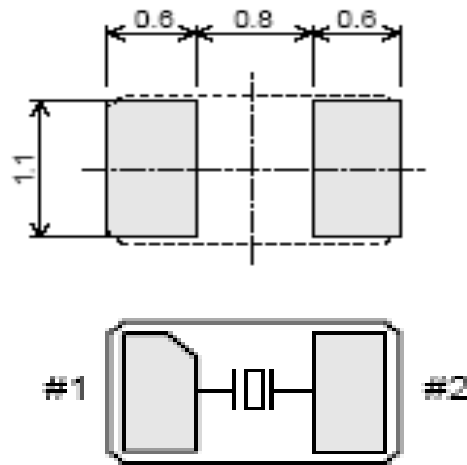
	Parameters	SYM.	Electrical Spec.				Notes
			MIN	TYPE	MAX	UNITS	
1	Nominal Frequency	F0	32.768			KHz	-
2	Frequency Tolerance	-	± 20			ppm	at 25 °C
3	Driver Level	DL	-	0.1	0.5	uW	-
4	Load Capacitance	CL	9.0			pF	-
5	Series Resistance	-	-	-	90	KΩ	-
6	Peak Temperature (Frequency)	-	20	25	30	°C	at 25 °C ±5°C
7	Frequency-Temperature coefficient	-	-	-	-0.04	ppm/°C <sup>2</sup>	-
8	Storage Temperature	-	-55	~	125	°C	-
9	Operating Temperature	-	-40	~	85	°C	-
10	Shunt Capacitance	C0	-	1.3	-	pF	-
11	Motional Capacitance	C1	-	6.4	-	fF	-
12	Insulation Resistance	-	500	-	-	MΩ	at DC 100V±15V
13	Aging	-	±3			ppm	1st Year

**DIMENSIONS**

(UNIT:mm)

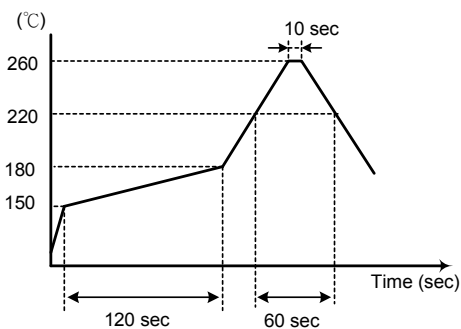
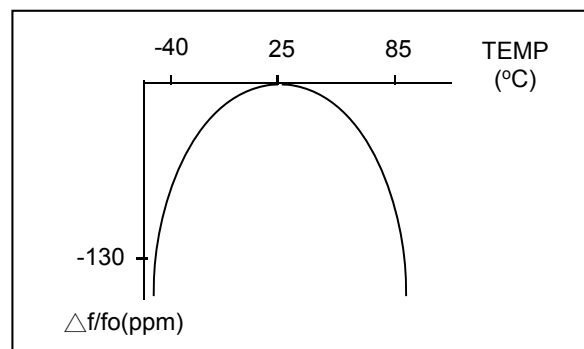

**RECOMMENDED SOLDER PAD**

(UNIT:mm)

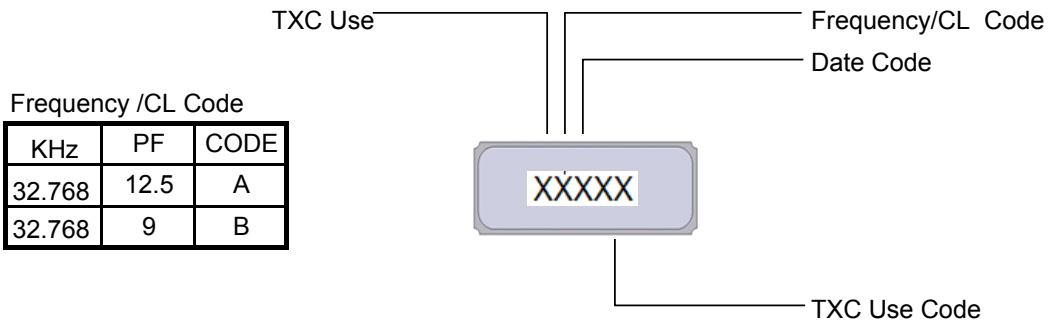

**SUGGESTED REFLOW PROFILE**

Total time : 200 sec. Max.

Solder melting point :220°C


**TEMPERATURE V.S FREQUENCY CURVE**


**MARKING**



Frequency /CL Code

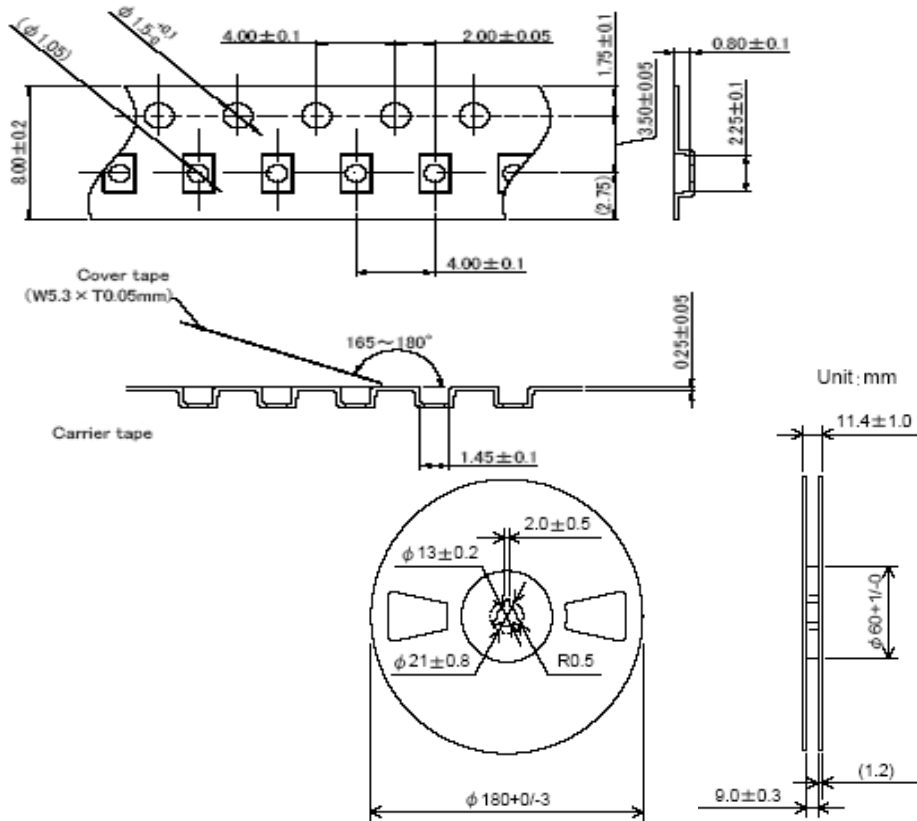
KHz	PF	CODE
32.768	12.5	A
32.768	9	B

Date Code

YEAR					MONTH											
					JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2001	2005	2009	2013	2017	A	B	C	D	E	F	G	H	J	K	L	M
2002	2006	2010	2014	2018	N	P	Q	R	S	T	U	V	W	X	Y	Z
2003	2007	2011	2015	2019	a	b	c	d	e	f	g	h	j	k	l	m
2004	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

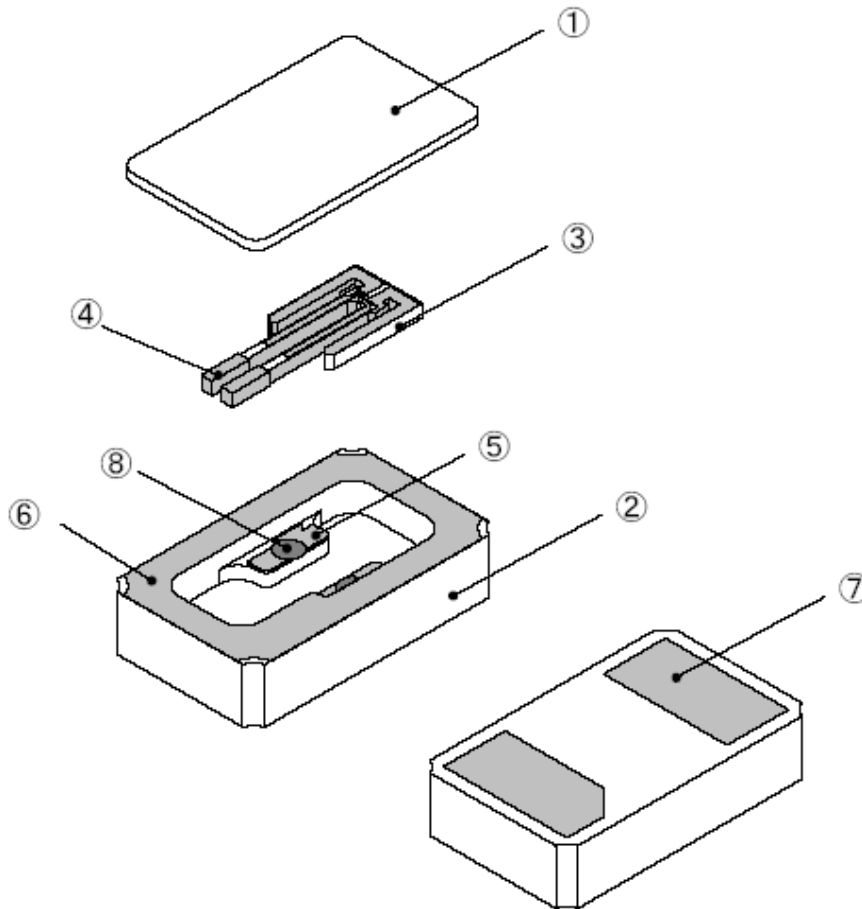
**PACKING (UNIT:mm)**



Amount	PCS/REEL
	3K

3000 pieces of taped crystal units are put into a packing reels

- 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.

**■ STRUCTURE ILLUSTRATION**


NO	COMPONENTS	MATERIALS	QTY	FINISH/SPECIFICATIONS
1	Lid	Kovar (Fe/Co/Ni)	1	-
2	Base(Package)	Ceramic( $Al_2O_3$ )	1	Color Black
3	Crystal blank	$SiO_2$	1	-
4	Electrode	Noble Metal	2	-
5	Internal terminals	Au	2	Tungsten metallize + Ni plating + Au plating
6	Metallize for sealing	Au	1	Tungsten metallize + Ni plating + Au plating
7	PAD	Au	2	Tungsten metallize + Ni plating + Au plating
8	Conductive adhesive	Ag	2	Silicon resin

**■ UNIT WEIGHT:**

0.005 g/pcs

**RELIABILITY SPECIFICATIONS**
**1. Mechanical Endurance**

No.	Test Item	Test Methods	REF. DOC
1.1	Drop Test	150 cm height, fall freely onto concrete floor 3 times.	JIS C6701
1.2	Mechanical Shock	Device are shocked to half sine wave ( 1000 G ) three mutually perpendicular axes each 3 times. 1m sec. duration time	JIS C60068-2-27
1.3	Vibration	Frequency range                      10 ~ 55 Hz Amplitude                                1.5 mm,20G Sweep time                                1 minute Perpendicular axes each test time    2 hours (Total test time 6 hours)	JIS C60068-2-6
1.4	Solderability	Temperature                            255 °C ± 5°C Immersing depth                        0.5 mm minimum Immersion time                         3.5 ± 0.5 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                160 °C Pre-heat time                            90 ± 10 sec. Test temperature                        260 ± 5 °C Test time                                    5 ± 1 sec.	MIL-STD-202
2.2	High Temp. Storage	+ 100 °C ± 3 °C for 100 ± 12 hours	JIS C600682-2
2.3	Low Temp. Storage	- 40 °C ± 3 °C for 1000 ± 12 hours	JIS C600682-1
2.4	Thermal Shock	Total 100 cycles of the following temperature cycle 	JIS C0025
2.5	Pressure Cooker Storage	121 ± 3°C, RH100%, 2 bar, for 240 hours	JIS C6701
2.6	High Temp & Humidity	40°C ± 3°C, RH 90~95% , 1000Hrs	JIS C600682-3