



TXC CORPORATION

5F, 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

SPECIFICATION FOR APPROVAL

CUSTOMER : INTEL

PRODUCT TYPE : SMD TA TYPE

NOMINAL FREQ. : 32.768KHz

TXC P/N : 9H03200017

REVISION : S1

CUSTOMER P/N :

PM / SALES :

DATE : 07/01/2010

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 TA TYPE

NOMINAL FREQ. : 32.768KHz

TXC P/N : 9H03200017

REVISION : S1

PE/RD	QA	MFG
I 45 和		
24-Jun-10		

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

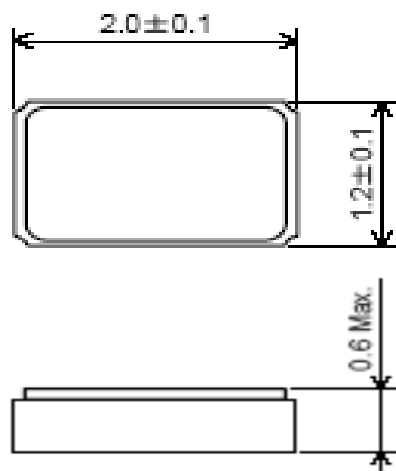
[illegible]

ELECTRICAL SPECIFICATIONS

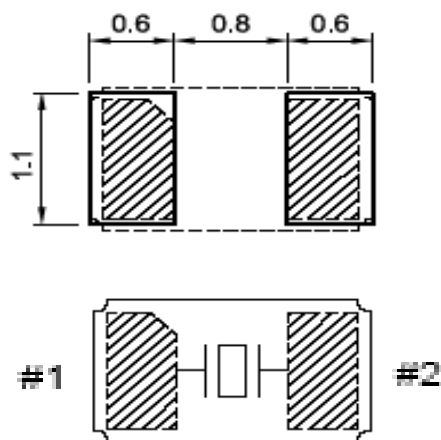
	Parameters	SYM.	Electrical Spec.				Notes
			MIN	TYPE	MAX	UNITS	
1	Nominal Frequency	F0	32.768			KHz	-
2	Frequency Tolerance	-	± 20			ppm	at 25
3	Driver Level	DL	-	0.1	0.5	uW	-
4	Load Capacitance	CL	12.5			pF	-
5	Series Resistance	-	-	-	90	KΩ	-
6	Peak Temperature (Frequency)	-	20	25	30		at 25 ±5
7	Frequency-Temperature coefficient	-	-	-	-4.0×10^{-8}	²	-
8	Storage Temperature	-	-55	~	125		-
9	Operating Temperature	-	-40	~	85		-
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	-	±5			ppm	1st Year

DIMENSIONS

(UNIT:mm)


RECOMMENDED SOLDER PAD

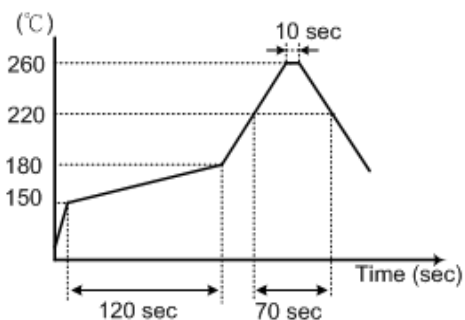
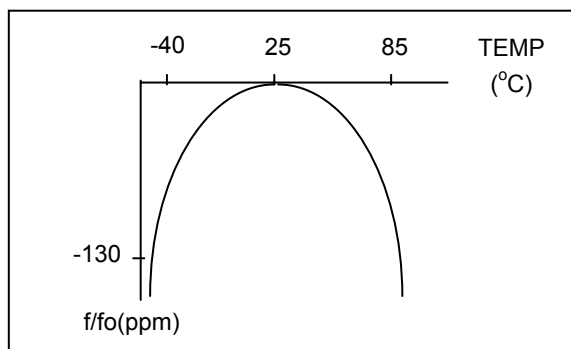
(UNIT:mm)

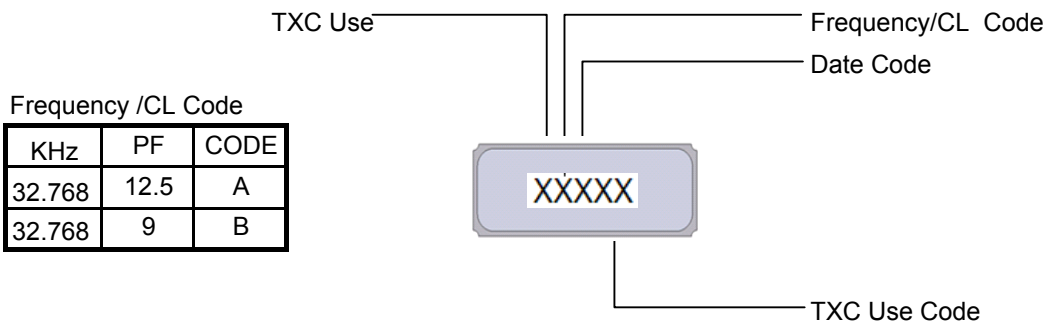

REFLOW PROFILE

Total time : 200 sec. Max.

Solder melting point :220

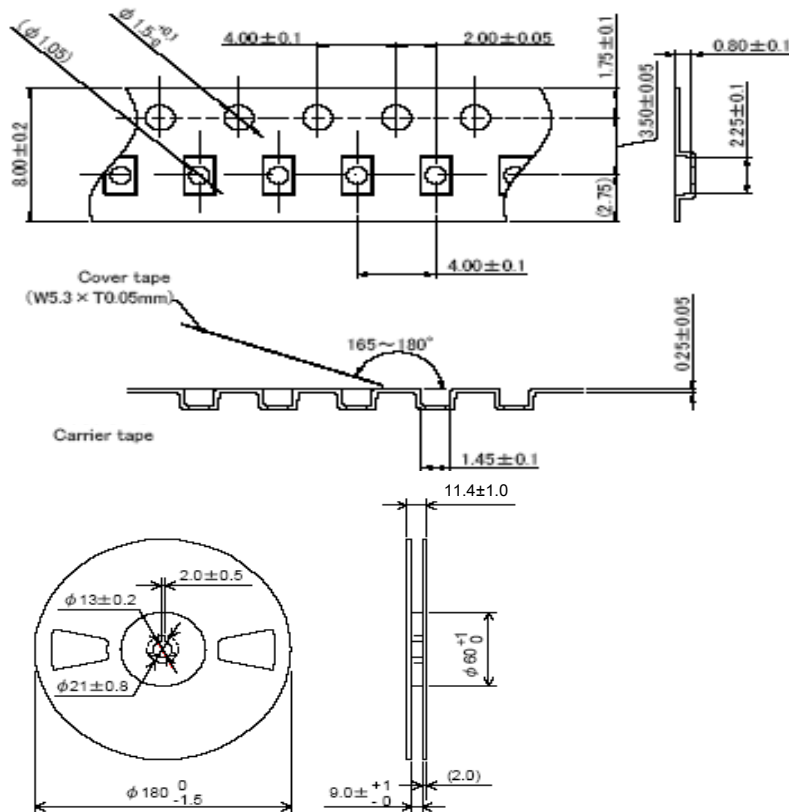
Test cycle : at least 2 cycles


TEMPERATURE V.S FREQUENCY CURVE


MARKING

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

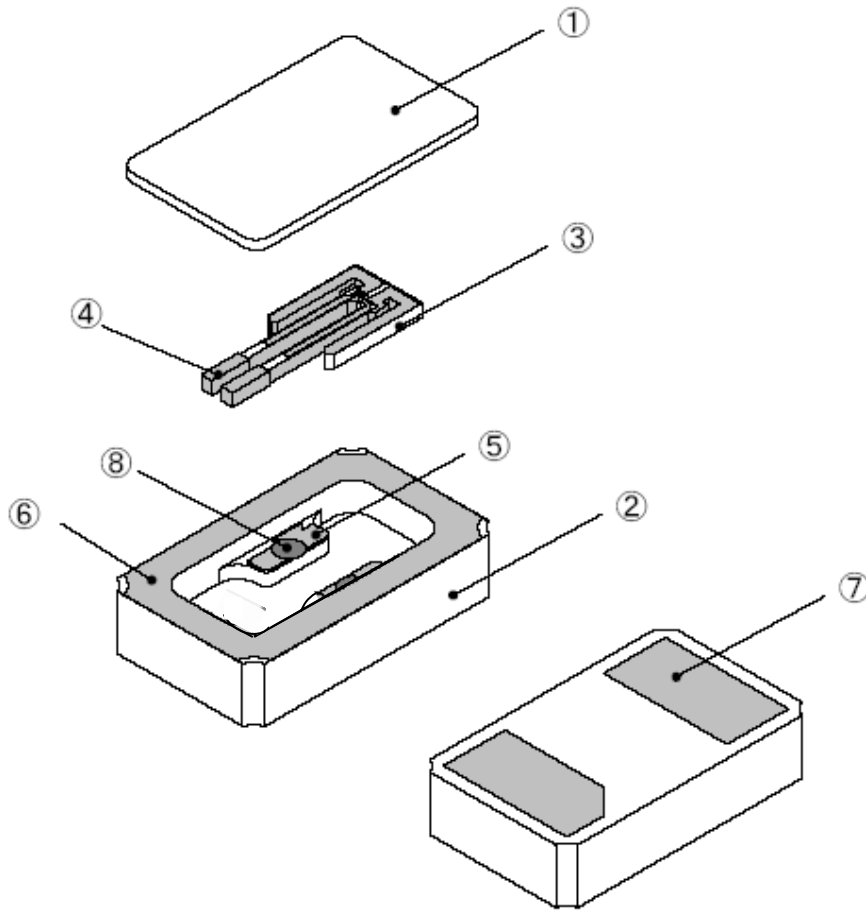
This date code will be cycled every four years

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


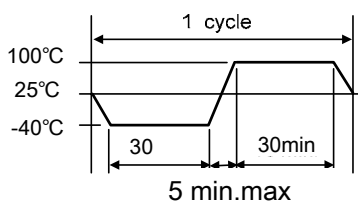
NO	COMPONENTS	MATERIALS	QTY	FINISH/SPECIFICATIONS
1	Lid	Kovar(Fe+Co+Ni) Alloy	1	Ni+Au+Kovar+ Solder (Au-Sn)
2	Base(Package)	Ceramic(Al_2O_3)	1	Color Gray
3	Crystal blank	SiO_2	1	-
4	Electrode	Noble Metal	2	Cr+Au
5	Internal terminals	Au	2	Tungsten metallize + Ni plating + Au plating
6	Metallize for sealing	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

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 ± 5 Immersing depth 0.5 mm minimum Immersion time 3.5 ± 0.5 seconds Flux Rosin resin methyl alcohol solvent (1 : 4)	MIL-STD-883E

2.Environmental Endurance

No.	Test Item	Test Methods	REF. DOC
2.1	Resistance To Soldering Heat	Pre-heat temperature 160 Pre-heat time 90 ± 10 sec. Test temperature 260 ± 5 Test time 5 ± 1 sec.	MIL-STD-202F
2.2	High Temp. Storage	+ 100 ± 3 for 100 ± 12 hours	JIS C600682-2
2.3	Low Temp. Storage	- 40 ± 3 for 1000 ± 12 hours	JIS C600682-1
2.4	Thermal Shock	Total 100 cycles of the following temperature cycle  <p>The diagram shows a temperature cycle with three levels: 100°C, 25°C, and -40°C. The cycle consists of a 30-second ramp down from 100°C to -40°C, a 30-minute dwell at -40°C, a 5-minute maximum dwell at -40°C, a 30-second ramp up from -40°C to 100°C, and a 30-minute dwell at 100°C. The entire sequence is labeled as '1 cycle'.</p>	JIS C0025
2.5	Pressure Cooker Storage	121 ± 3 , RH100%, 2 bar, for 240 hours	JIS C6701
2.6	High Temp & Humidity	40 ± 3 , RH 90~95% , 1000Hrs	JIS C600682-3