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

PRODUCT SPECIFICATION SHEET

PRODUCT TYPE	:	SMD TA TYPE
NOMINAL FREQ.	:	32.768KHz
TXC P/N	:	9H03200009
REVISION	:	**A1**

PE/RD	QA	MFG
王敏 和 8/6'09	TM Yen	許晉豪
	8/18'09	8/11 2009

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

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	:	
PRODUCT TYPE	:	SMD TA TYPE
NOMINAL FREQ.	:	32.768KHz
TXC P/N	:	9H03200009
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

RoHS Compliant

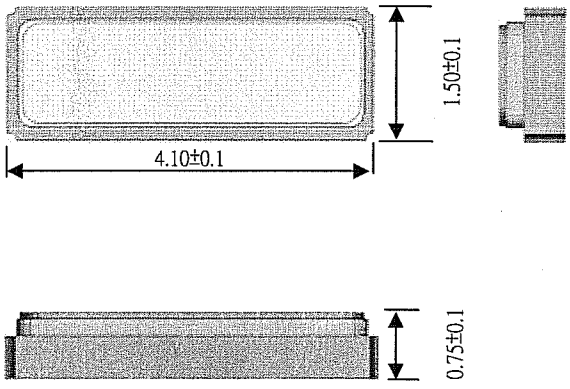
Rev	Revise page	Revise contents	Date	Ref.No.	Reviser
A	NA	Initial release	18-May-09	-	Alan Cheng

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	-	-	-	65	KΩ	-
6	Peak Temperature (Frequency)	-	20	25	30	℃	at 25 ℃ ±5℃
7	Frequency-Temperature coefficent	-	-	-	$-4.0*10^{-8}$	$℃^2$	-
8	Storage Temperature	-	-55	~	125	℃	-
9	Operating Temperature	-	-40	~	85	℃	-
10	Shunt Capacitance	C0	-	1.1	-	pF	-
11	Motional Capacitance	C1	-	2.3	-	fF	-
12	Insulation Resistance	-	500	-	-	MΩ	at DC 100V±15V
13	Aging	-		±3		ppm	1st Year

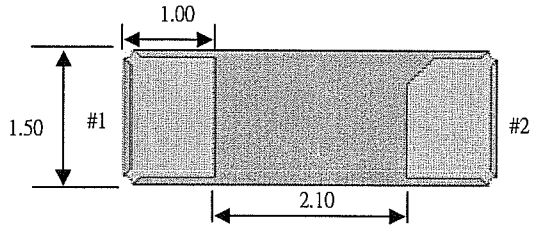
DIMENSIONS

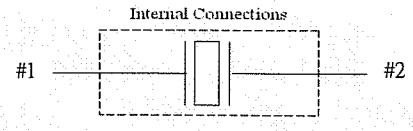
(UNIT:mm)



RECOMMENDED SOLDER PAD

(UNIT:mm)

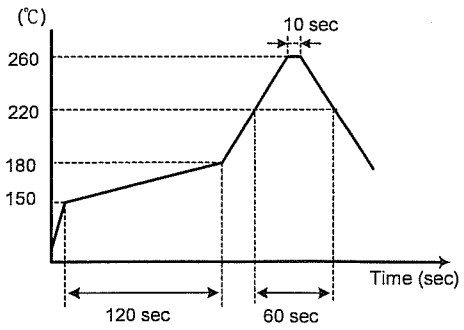




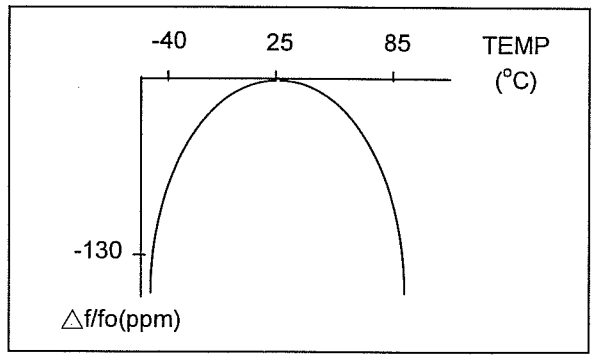
SUGGESTED REFLOW PROFILE

Total time : 200 sec. Max.

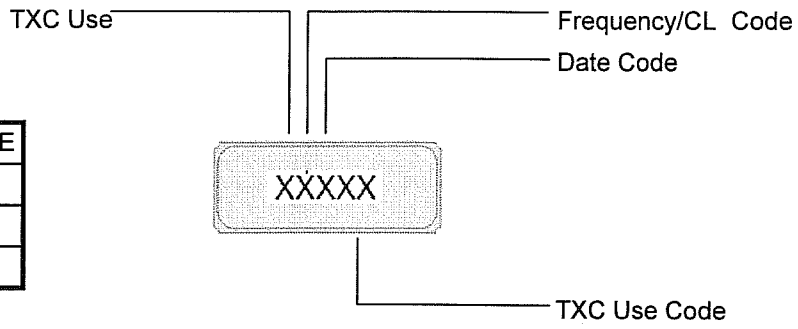
Solder melting point :220℃



TEMPERATURE V.S FREQENCY CURVE



■ MARKING



Frequency /CL Code

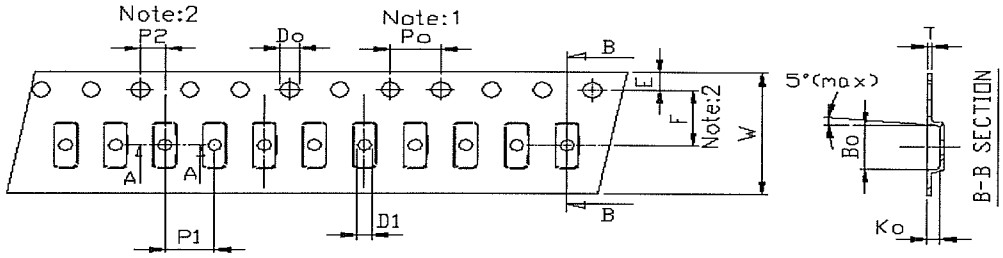
KHz	PF	CODE
32.768	12.5	A
32.768	9	B
32.768	6	C

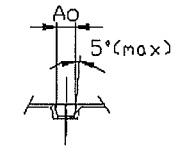
Date Code

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

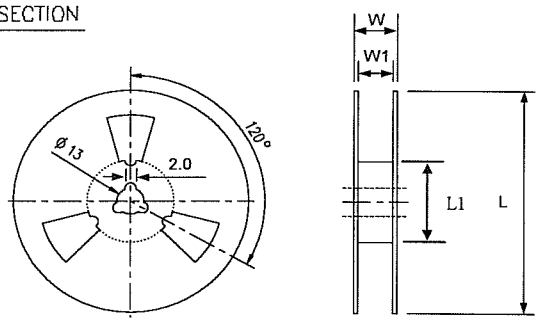
This date code will be cycled every four years

■ PACKING





Ao= 1.75±0.10 mm
Bo= 4.35±0.10 mm
Ko= 1.05±0.10 mm

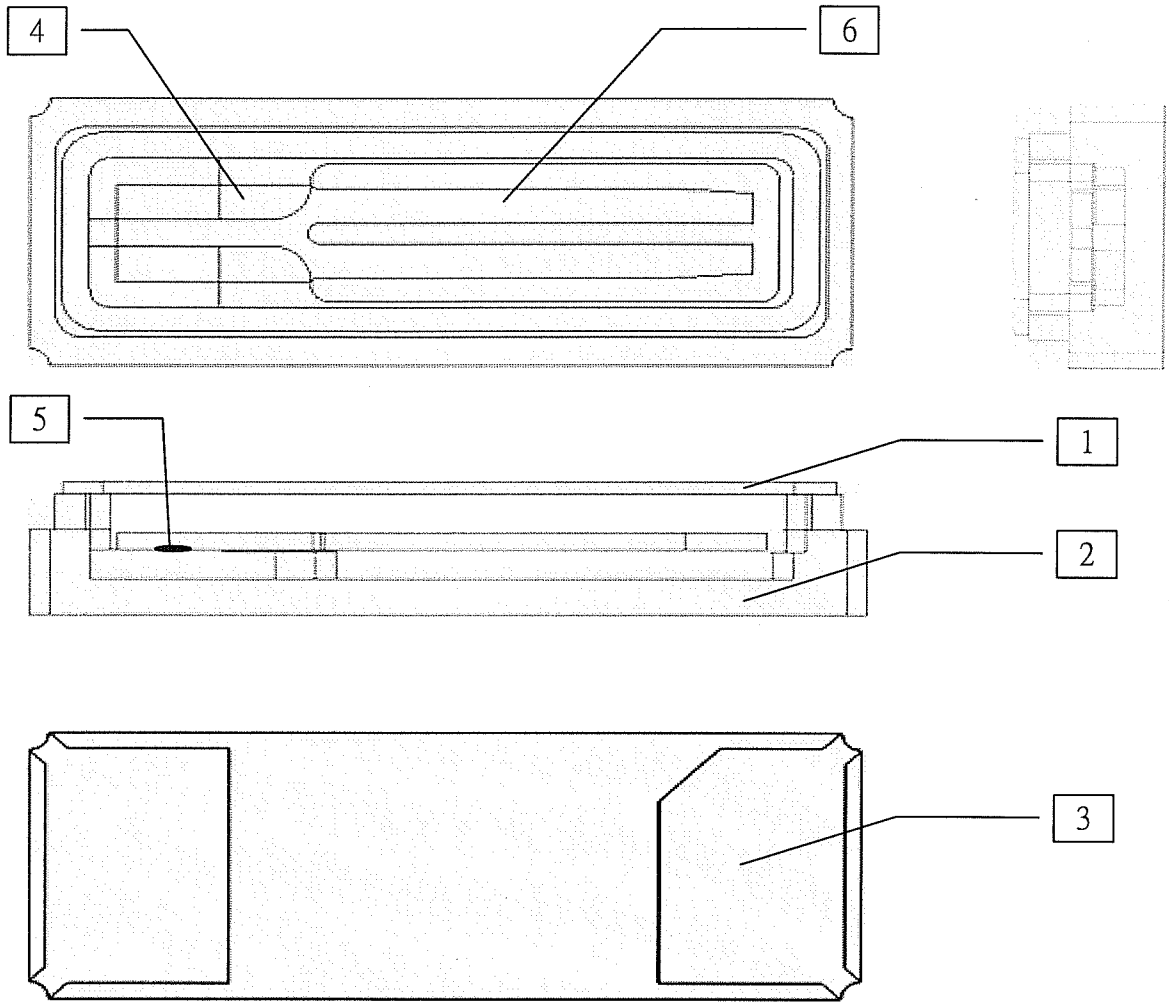


CARRIER TAPE DIMENSIONS	K1	P0	P1	P2	D0	D1	E	F	10P0	W	T	pcs / Reel
	–	4	4	2	1.55	1.1	1.75	5.5	40	12	0.3	3K

REEL DIMENSIONS	W	W1	L	L1
	16+/-0.2	13.2+/-1.5	178+/-1	60.2+/-0.5

REMARK :
1. 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.
2. 160 mm (6.3) minimum trailer of empty carrier tape sealed with cover tape.

STRUCTURE ILLUSTRATION



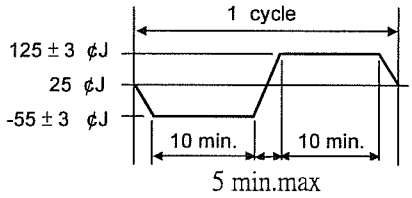
NO	COMPONENTS	MATERIALS	QTY	FINISH/SPECIFICATIONS
1	Lid	Kovar (Fe/Co/Ni)	1	-
2	Base(Package)	Ceramic(Al_2O_3)+Brazed(Au-Cu Alloy)+Kovar (Fe/Co/N	1	Color Gray
3	PAD	Au	2	Tungsten metalize + Ni plating + Au plating
4	Crystal blank	SiO_2	1	-
5	Conductive adhesive	Ag	2	Silicon resin
6	Electrode	Noble Metal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

■ 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. 0.5m sec. duration time		MIL-STD-202F
1.3	Vibration	Frequency range Amplitude Sweep time Perpendicular axes each test time	10 ~ 2000 Hz 1.52 mm,20G 20 minute 4 hours (Total test time 12 hours)	MIL-STD-883E
1.4	Solderability	Temperature Immersing depth Immersion time Flux	260 ℃ ± 5℃ 0.5 mm minimum 5 ± 1 seconds 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 Pre-heat time Test temperature Test time	125 ℃ 60 ~ 120 sec. 260 ± 5 ℃ 10 ± 1 sec.	MIL-STD-202F
2.2	High Temp. Storage	+ 125 ℃ ± 3 ℃ for 1000 ± 12 hours		MIL-STD-883E
2.3	Low Temp. Storage	- 40 ℃ ± 3 ℃ for 1000 ± 12 hours		
2.4	Thermal Shock	Total 100 cycles of the following temperature cycle  5 min.max		MIL-STD-883E
2.5	Pressure Cooker Storage	121 ± 3℃, RH100%, 2 bar, for 240 hours		JIS C6701
2.6	High Temp&Humidity	85℃ ± 3℃, RH 85% , 1000Hrs		JIS C5023