



# SPECIFICATION FOR APPROVAL

CUSTOMER : MARITEX

---

PRODUCT TYPE : SMD T7 TYPE

---

NOMINAL FREQ. : 32.768KHz

---

TXC P/N : 9H03200413

---

REVISION : A2

---

CUSTOMER P/N :

---

PM / SALES : PAUL CHEN

---

DATE : 16-May-08

---

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**

Pb used in internal connecting (Sn:Pb=10:90) is exempt from EU directive



# PRODUCT SPECIFICATION SHEET

PRODUCT TYPE : SMD T7 TYPE

NOMINAL FREQ. : 32.768KHz

TXC P/N : 9H03200413

REVISION : A2

PE/RD	QA	MFG
<i>Scott Chen</i>	<i>Robert Chen</i>	<i>Boys Huang</i>
<i>3-Sep-07</i>	<i>7-Sep-07</i>	<i>4-Sep-07</i>

**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

Pb used in internal connecting (Sn:Pb=10:90) is exempt from EU directive

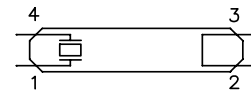
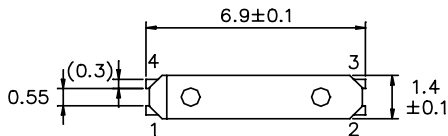


**ELECTRICAL SPECIFICATIONS**

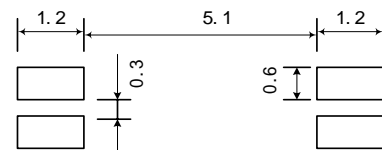
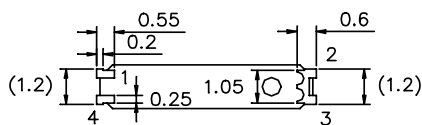
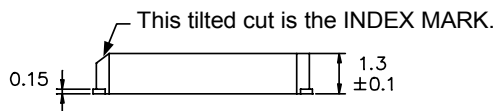
	Parameters	SYM.	Electrical Spec.				Notes
			MIN	TYPE	MAX	UNITS	
1	Nominal Frequency	F0	32.768			KHz	-
2	Frequency Tolerance	-	± 20			ppm	at 25
3	Driver Level	DL	-	-	1	uW	-
4	Load Capacitance	CL	12.5			pF	-
5	Series Resistance	-	-	-	65	KΩ	-
6	Peak Temperature (Frequency)	-	-	-	-	-	at 25 ±5
7	Frequency-Temperature coefficient	-	-	-	$-4 \times 10^{-8}$	<sup>2</sup>	-
8	Storage Temperature	-	-55	~	125		-
9	Operating Temperature	-	-40	~	85		-
10	Shunt Capacitance	C0	-	0.8	-	pF	-
11	Motional Capacitance	C1	-	1.9	-	fF	-
12	Insulation Resistance	-	500	-	-	MΩ	at DC 100V±15V
13	Aging	-	±3			ppm	1st Year

**DIMENSIONS**

(UNIT:mm)

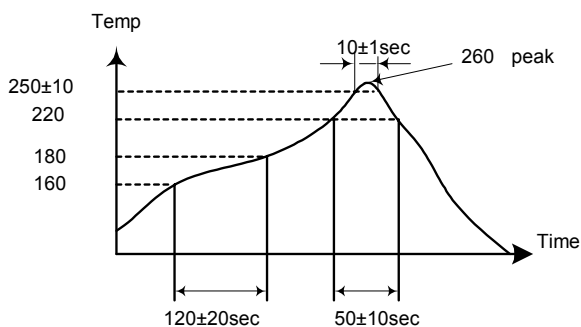
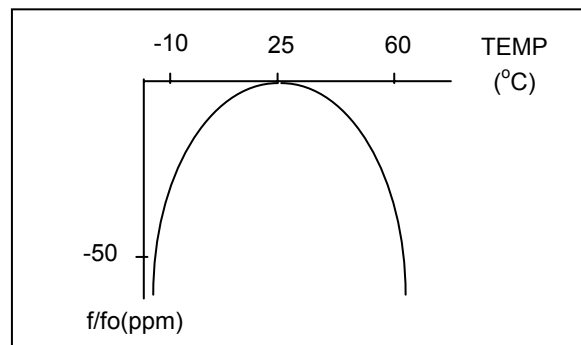

**Connection**

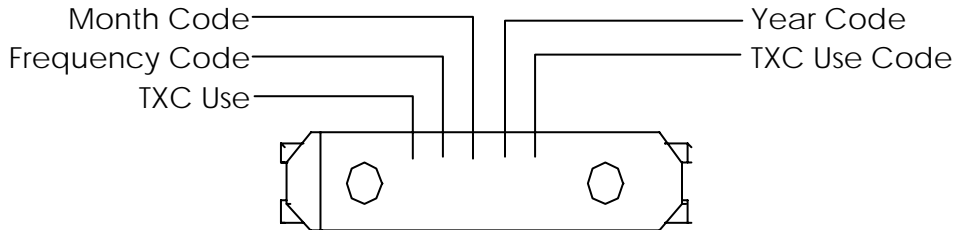
Do not connect pin 2 and pin 3 to external device.


**Suggested Layout**
**SUGGESTED REFLOW PROFILE**

Total time : 200 sec. Max.

Solder melting point :220


**TEMPERATURE V.S FREQUENCY CURVE**


**MARKING**


Frequency Code:

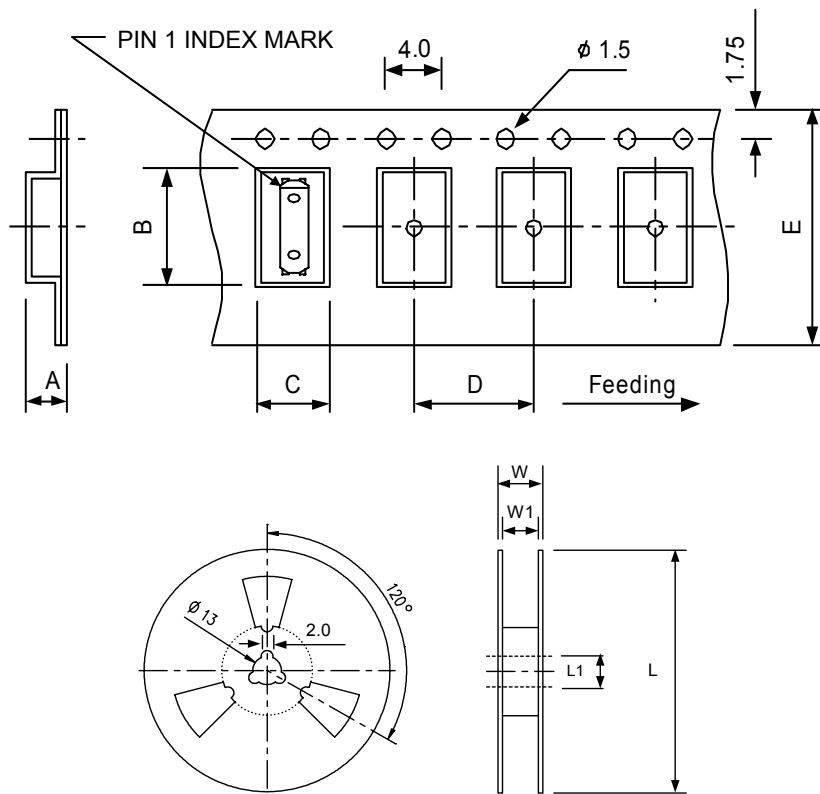
KHz	CODE
32.768	3
76.000	7

Monthe Code:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A	B	C	D	E	F	G	H	J	K	M	N

Year Code:

2007	7
2008	8
2009	9

**Production location: Taiwan**
**PACKING : (EIA-481-2)**


DIMENSIONS	A	B	C	D	E	L	L1	W	W1	pcs / Reel
	1.6	7.3	1.6	8	16	330	13	24.3	17.3	3K

- 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.

**MATERIAL**

Components part	Material name	Weight ratio (w%)	Major substance	CAS No.
Crystal chip	Silica cristobalite	About 1.0	Silica cristobalite (SiO <sub>2</sub> )	14464-46-1
			Gold (Au)	7440-57-5
Resin	Expoxy resin	35~45	Silica (SiO <sub>2</sub> )	60676-86-0
			Epoxy Resin	-
			Phenol Resin	-
			Carbon Black	1333-86-4
Lead flame	42 alloy	5~10	Iron (Fe)	7440-50-8
			Nickel (Ni)	7440-02-0
			Sn Bi	
Case	Nickel Silver	35~42	Copper (Cu)	7440-50-8
			Nickel (Ni)	7440-02-0
			Zinc (Zn)	7440-66-6
Plug		10~15	Silica amorphous (SiO <sub>2</sub> )	
			Nickel (Ni)	7440-02-0
			Iron (Fe)	7439-89-6
			Sn Pb	

**RELIABILITY SPECIFICATIONS**

No.	Test Item	Test Methods	REF.DOC
1	Heat Shock	-40 ~ -85 , Dwell:30 min, 20 Cycles	MIL-STD-883E
2	Vibration Test	Freq. 10~60Hz, Amplitude 1.5mm, 3 Direction each 2hours.	MIL-STD-883E
3	Mechanical Shock Test	75 cm Height, 3 times wooden board	-
4	Solder Heat Resistance	Peak 260 , 255 ± 5 2times	