



# SPECIFICATION FOR APPROVAL

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

PRODUCT TYPE : HC-49/S SMD

NOMINAL FREQ. : 4.000000MHz

TXC P/N : AT04000005

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**



TXC CORPORATION

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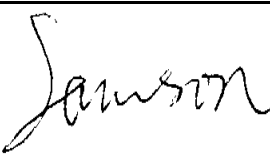

# PRODUCT SPECIFICATION SHEET

PRODUCT TYPE : HC-49/S SMD

NOMINAL FREQ. : 4.000000MHz

TXC P/N : AT04000005

REVISION : A1

PE/RD	QA	MFG
		
2010/1/26	2010/1/26	2010/1/26

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**



FMT-DOC024

Issue Date: 12.15'08 VER.E

## CONTENT

### SPECIFICATIONS

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### ATTACHMENT(S) (optional)

#### TESTING DATA

- |                                    |   |                              |  |
|------------------------------------|---|------------------------------|--|
| • ELECTRICAL CHARACTERISTICS TEST  | A | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |
| • TEMPERATURE CHARACTERISTICS TEST | B | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |

**ELECTRICAL SPECIFICATIONS**

**Standard atmospheric conditions**

Unless otherwise specified, the standard range of atmospheric conditions for making measurement and tests are as follow:

- Ambient temperature : 25+/-5°C
- Relative humidity : 40%~70%

If there is any doubt about the results, measurement shall be made within the following limits:

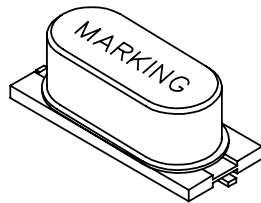
- Ambient temperature : 25+/-1°C
- Relative humidity : 40%~70%

**Measure equipment**

SAUNDERS 250A/250B CRYSTAL IMPEDANCE METER.

**Crystal cutting type**

The crystal is using AT CUT (thickness shear mode).



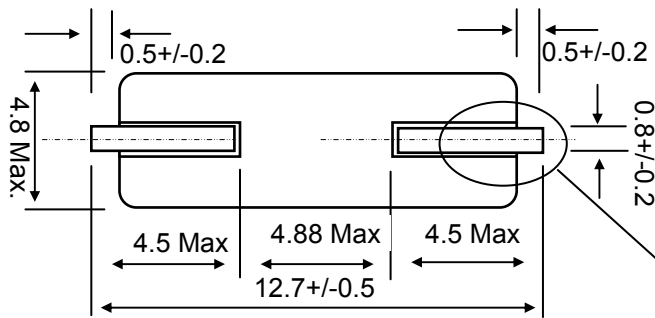
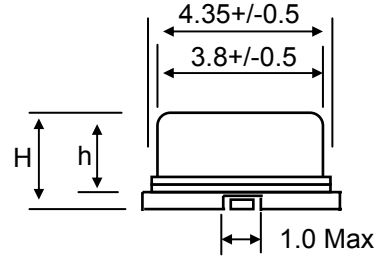
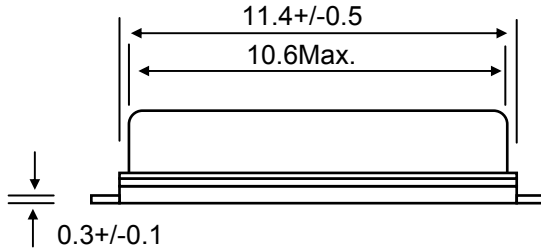
please refer to marking code page

1.	Nominal Frequency	4.000000 MHz
2.	Oscillation Mode	Fundamental
3.	Load Capacitance	12.0 pF
4.	Frequency Tolerance (25 °C)	+/- 30 ppm
5.	Effective Series Resistance	150 Ohms Max.
6.	Shunt Capacitance (C0)	7.0 pF Max.
7.	Motional Capacitance (C1)	N/A
8.	Drive Level	100 uW Typ,300 uW Max
9.	Operation Temperature Range	-40 °C ~ +85 °C
10.	Stability Over Temperature Range	+/- 30 ppm (related to 25 °C)
11.	Insulation Resistance	500 MOhms Min. at DC 100V
12.	Attenuation of Spurious Frequency Amplitude	N/A
13.	Ratio of Holder to Motional (C0/1)	N/A
14.	Storage Temperature	-40 °C ~ +85 °C
15.	Aging	+/- 3.0 ppm/year



**DIMENSIONS**

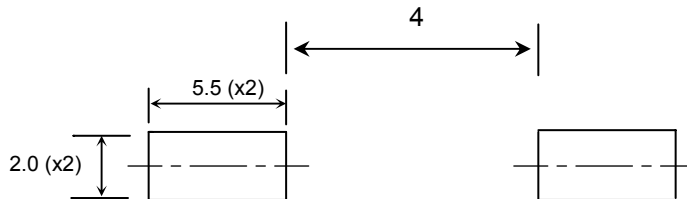
UNIT:mm



CHOOSE	TYPE	H(SMDHIGH)	h(BODY HIGH)
■	S3	3.8+/-0.3	3.3+/-0.3
□	S2	3.0+/-0.3	2.3+/-0.3

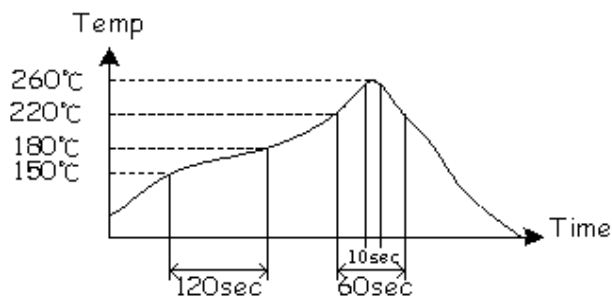
**Suggested Layout**

Solder Coating  
(Sn-Ag-Cu Pb Free Coating)



**SUGGESTED REFLOW PROFILE**

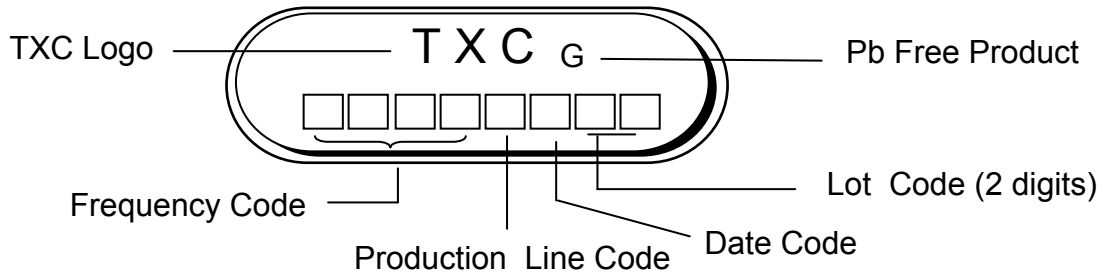
Total time : 200 sec. Max.  
Solder melting point :220 °C





**MARKING**

**Marking For Pb Free Parts :**

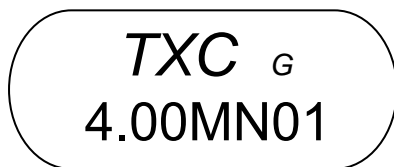


**Date Code:**

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.

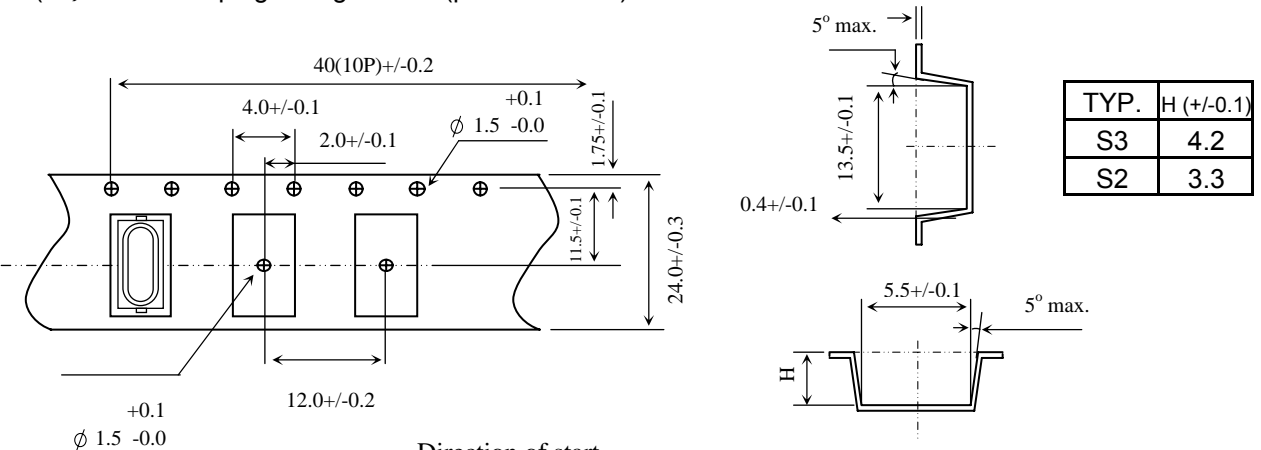
**For example : Marking**



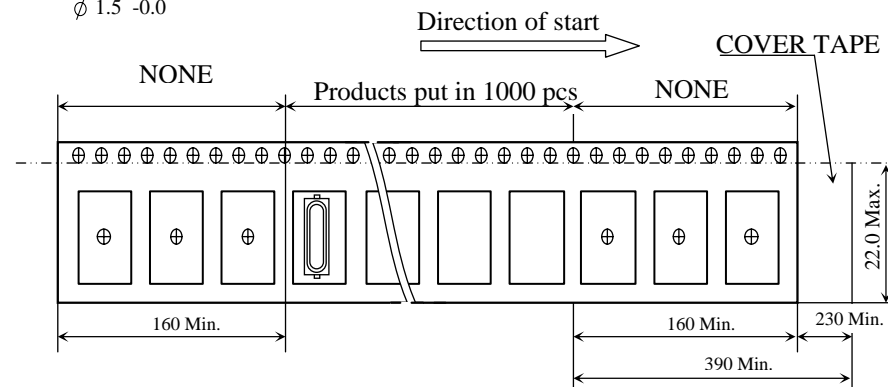
→  
Introduction : Pb Free Product  
49S 4.000 MHz  
Made in NGB 2010/JAN 01Lot

**(A) Tape and reel configuration:(Unit : mm)**

( a ) Emboss taping configuration. (per EIA-481-2)

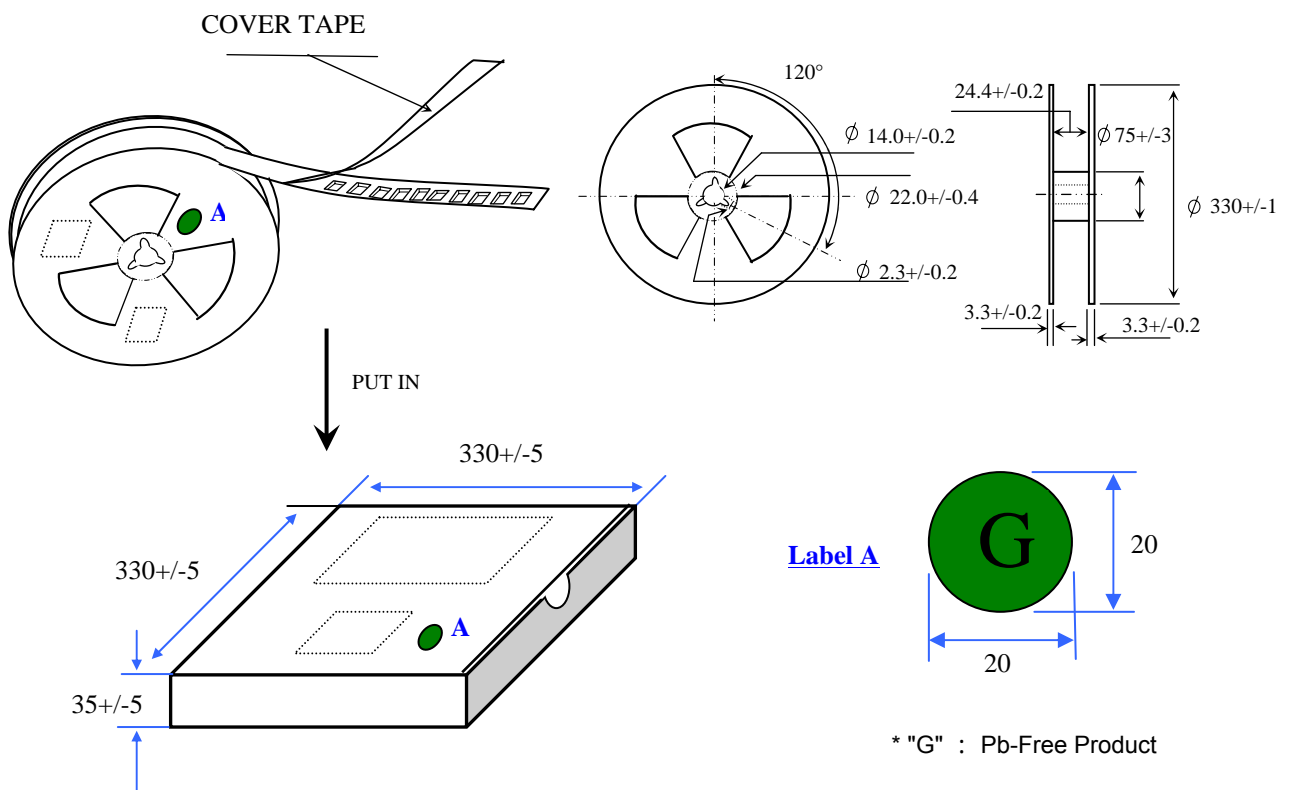


TYP.	H (+/-0.1)
S3	4.2
S2	3.3



( b ) Reel configuration.

**(B) Packing & Label :(Unit : mm)**





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[FL2000085](#) [9B-15.360MBBK-B](#) [9C-7.680MBBK-T](#) [ASH7K-32.768KHZ](#) [AT-41.600MAGQ-T](#) [BTD1062E05A-513](#) [LFXTAL066198Cutt](#)  
[9C-14.31818MBBK-T](#) [FA-238 50.0000MB30X-K3](#) [FC-12M 32.7680KA-AC3](#) [SSPT7F-9PF20-R](#) [FX325BS-38.88EEM1201](#)  
[LFXTAL065253Cutt](#) [LFXTAL066431Cutt](#) [XT9S20ANA14M7456](#) [XT9SNLANA16M](#) [646G-24-2](#) [7A-24.576MBBK-T](#) [7B-30.000MBBK-T](#)  
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