



TXC CORPORATION

5F, NO. 16, Sec. 2 Chungyang S Rd., Peitou, Taipei, Taiwan, R. O. C..

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

www.txc.com.tw

SPECIFICATION FOR APPROVAL

勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-54151736
勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

CUSTOMER : _____

PRODUCT TYPE : HC-49/S

NOMINAL FREQ. : 24.576000MHz

TXC P/N : 9B24500167

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

5F, NO. 16, Sec. 2 Chungyang S Rd., Peitou, Taipei, Taiwan, R. O. C..

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

www.txc.com.tw

PRODUCT SPECIFICATION SHEET

PRODUCT TYPE : HC-49/S
NOMINAL FREQ. : 24.576000MHz
TXC P/N : 9B24500167
REVISION : A1

PE/RD	QA	MFG
<i>Simon</i>	<i>Tzen Ksieh</i>	<i>Shu-Chen ko</i>
13/2/2006	13/2/2006	13/2/2006

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>	<u>Page</u>	<u>Ver.</u>
A1		Initial Release	20/1/2006		Shu-Chen Ko	1~8	A1



CONTENT

SPECIFICATIONS

PAGE

• ELECTRICAL SPECIFICATIONS	4
• DIMENSIONS	5
• SUGGESTED REFLOW PROFILE	5
• MARKING	6
• PACKING	7
• RELIABILITY SPECIFICATIONS	8

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 : 22+/-5°C
- Relative humidity : 40%~70%

If there is no doubt about the results, measurement shall be made within the following limits:

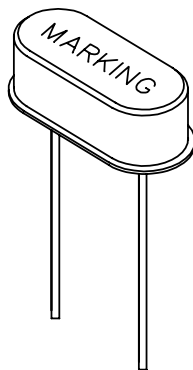
- Ambient temperature : 22+/-1°C
- Relative humidity : 40%~70%

Measure equipment

SAUNDERS 250A/250B CRYSTAL IMPEDANCE METER.

Crystal cutting type

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

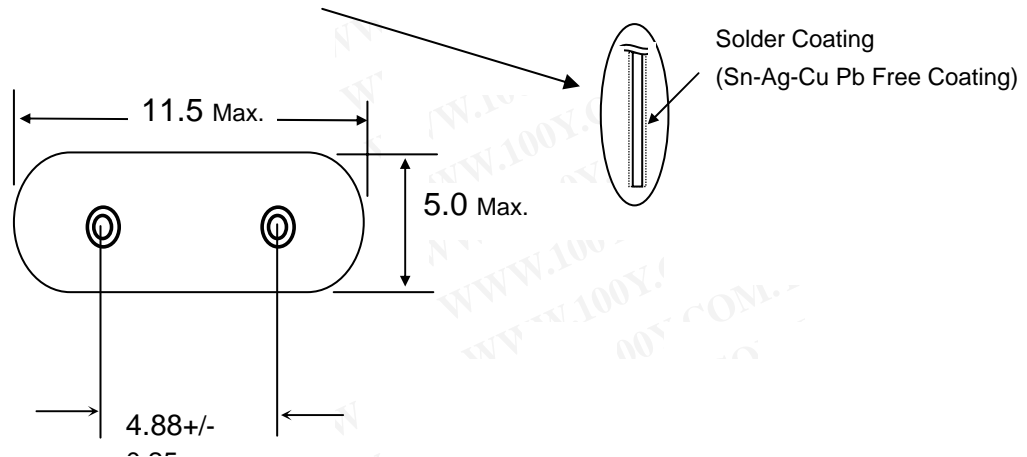
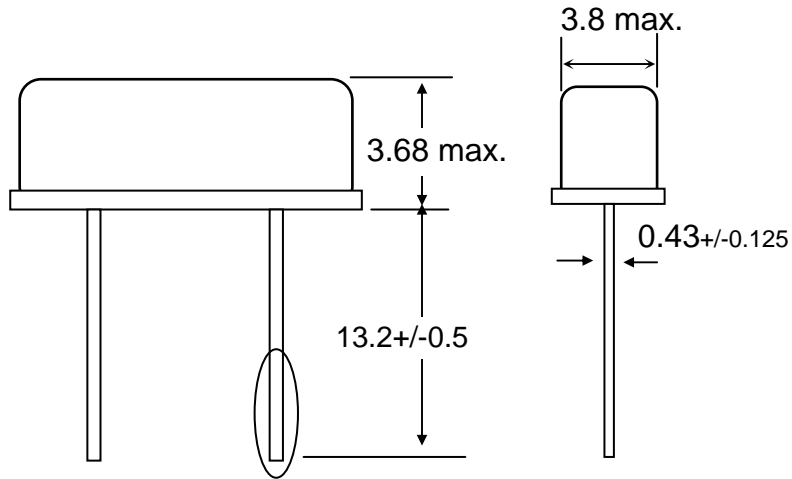
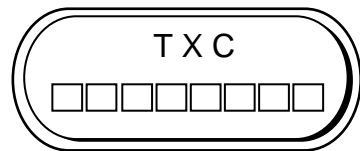


please refer to marking code page

1.	Nominal Frequency	24.576000 MHz
2.	Oscillation Mode	Fundamental
3.	Load Capacitance	16.0 pF
4.	Frequency Tolerance (25 °C)	+/- 30 ppm
5.	Effective Series Resistance	40 Ohms Max.
6.	Shunt Capacitance (C0)	7.0 pF Max.
7.	Motional Capacitance (C1)	N/A
8.	Drive Level	100 uW
9.	Operation Temperature Range	-10 °C ~ +60 °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	+/- 5.0 ppm/year

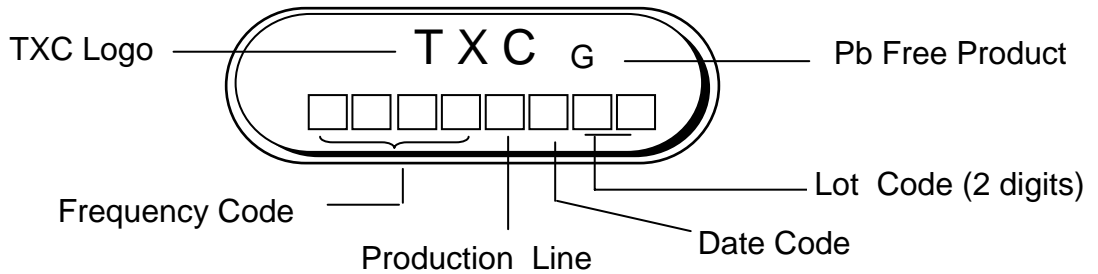
DIMENSIONS

UNIT:mm



MARKING

Marking For Pb Free Parts :

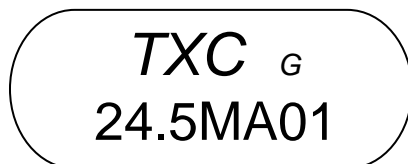


Date Code:

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.

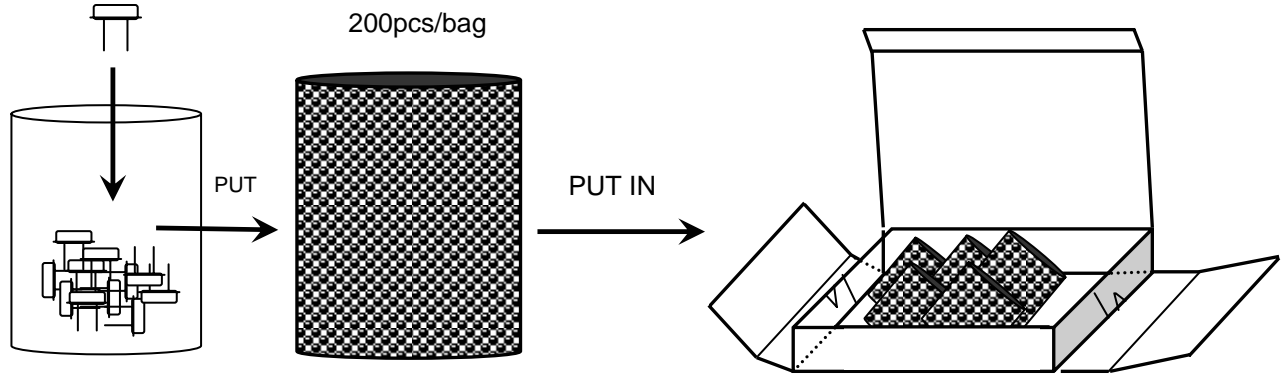
For example : Marking



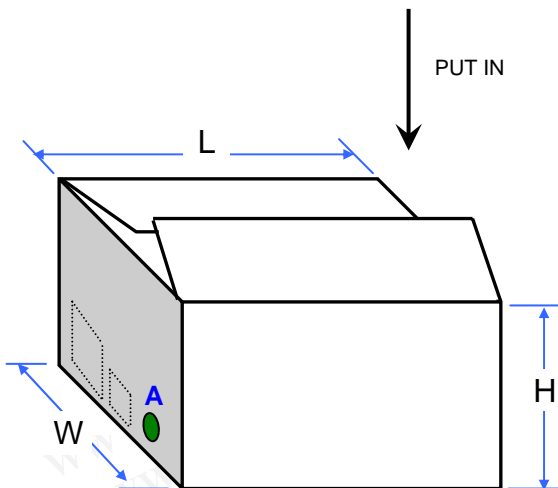
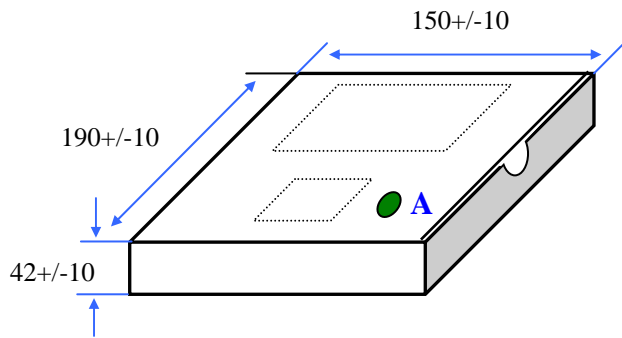
→ Introduction : Pb Free Product
49S 24.576 MHz
Made in 2005/JAN. 01Lot

Packing For Pb Free Parts :

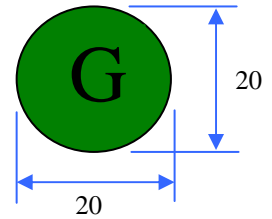
1. INNER BOX : (Unit : mm)



2. LOGO STICKER(CARTON and INNER BOX) : (Unit : mm)

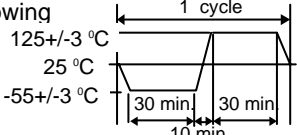


Label A



- # (1) Put in stuff between space.
- (2) Tie Up the Carton with 4 Packthreads.
- (3) "G" : Pb-Free Product

RELIABILITY SPECIFICATIONS

No.	TEST ITEM	TEST METHODS	TEST CRITERIA	REF. DOC
1	Drop Test	50 cm Height, Fall freely onto firm wood for 3 Times.	dF/F<+/-5ppm dRs<+/-10%	JIS C6701
2	Fine Leak	Helium Bombing 5Kgf / cm ² for 2 Hours .	Leak Rate Less Than 2x10 ⁻⁸ atm.cc/sec	MIL-STD-883E Method 1014.10
3	Gross Leak	125°C FC#40 ,120 Seconds.	No Continuous Bubble .	MIL-STD-883E Method 1014.10
4	Mechanical Shock	Device are shocked to half sine wave (1000 G) three mutually perpendicular axes each 3 times.	dF/F<+/-5ppm dRs<+/-10%	MIL-STD-883E Method 2002.4
5	Vibration	Frequency range 10 ~ 55 Hz Amplitude 10G Sweep Time 1 minute Test Time X,Y,Z Plan,each 2 hrs.	dF/F<+/-5ppm dRs<+/-10%	MIL-STD-883E Method 2007.3
6	Solderability	Temperature 260 °C +/- 5 °C Material H63A (Silver 2~3 %) Immersing depth 0.5 mm minimum Immersion time 5 +/- 0.5 seconds Flux Rosin resin methyl alcohol solvent (1 : 4)	Check by Microscope At Least 95% Coated	MIL-STD-883E Method 2003.7
7	Resistance To Soldering Heat	Test Temperature 260 °C +/- 5 °C Test Time 10 +/- 1 sec.	dF/F<+/-5ppm dRs<+/-10%	MIL-STD-202F Method 210D
8	Terminal Strength	2.5mm From terminal , bend 90°,3 times.	Lead without crack or broken.	MIL-STD-202F Method 208F
9	Thermal Shock	Total 5 cycles of the following temperature cycle 	dF/F<+/-5ppm dRs<+/-10%	MIL-STD-883E Method 1011.8

Measure in room temperature after each tests.



Test Report

TXC COROPATION

NO. 4, KUNG YEH 6TH ROAD, PING CHENG INDUSTRIAL
DISTRICT, PING CHENG CITY, TAO YUAN HSIEN, TAIWAN,
R.O.C.

Report No. : CE/2005/34544

Date : 2005/03/29

Page : 1 of 3

The following merchandise was (were) submitted and identified by the client as :

Type of Product : QUARTZ CRYSTAL UNIT
Style/Item No : 49S X'TAL----PB FREE
Sample Received : 2005/03/21
Testing Date : 2005/03/21 TO 2005/03/29

Test Result : - Please see the next page -


David Yen, M.R. / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.

The content of this PDF file is in accordance with the original issued reports for reference only. This Test Report cannot be reproduced, except in full, without prior written permission of the Company



Test Report

TXC COROPATION

NO. 4, KUNG YEH 6TH ROAD, PING CHENG INDUSTRIAL DISTRICT, PING CHENG CITY, TAO YUAN HSIEN, TAIWAN, R.O.C.

Report No. : CE/2005/34544

Date : 2005/03/29

Page : 2 of 3

Test Result

PART NAME NO.1 : SILVER COLORED BODY (PLEASE REFER TO THE PHOTO ATTACHED)

Test Item (s):	Unit	Method	MDL	Result
				No.1
PBBs(Polybrominated biphenyls)(CAS NO:059536-65-1)	%	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	N.D.
PBBEs(PBDEs)(Polybrominated biphenyl ethers)	%	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	N.D.

Test Item (s):	Unit	Method	MDL	Result
				No.1
Chromium VI (Cr+6)	ppm	As per US EPA 7196A and US EPA 3060A.	2	N.D.
Cadmium (Cd)	ppm	ICP-AES after as per EN 1122, method B:2001 or other acid digestion.	2	N.D.
Mercury (Hg)	ppm	ICP-AES after as per US EPA 3052 or other acid digestion.	2	N.D.
Lead (Pb)	ppm	ICP-AES after as per US EPA 3050B or other acid digestion.	2	N.D.

- NOTE: (1) N.D. = Not detected (<MDL)
(2) ppm = mg/kg
(3) MDL = Method Detection Limit

The content of this PDF file is in accordance with the original issued reports for reference only. This Test Report cannot be reproduced, except in full, without prior written permission of the Company

SGS

Test Report

勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-54151736
勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

TXC COROPATION

NO. 4, KUNG YEH 6TH ROAD, PING CHENG INDUSTRIAL
DISTRICT, PING CHENG CITY, TAO YUAN HSIEN, TAIWAN,
R.O.C.

Report No. : CE/2005/34544

Date : 2005/03/29

Page : 3 of 3



The content of this PDF file is in accordance with the original issued reports for reference only. This Test Report cannot be reproduced, except in full, without prior written permission of the Company

SGS TAIWAN LIMITED

NO. 136-1, Wu Kung Road, WuKu Industrial Zone, Tainan county, Taiwan.
t(886-2) 22993939 f(886-2) 2299-3237 www.sgs.com.tw