



TAI-SAW TECHNOLOGY CO., LTD.

No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,
Taoyuan, 324, Taiwan, R.O.C.

TEL: 886-3-4690038 FAX: 886-3-4697532

E-mail: ttsales@mail.taisaw.com Web: www.taisaw.com

Approval Sheet For Product Specification

Issued Date: 12/1/2005 (REV. NO: 3)

Product Name: SMD 5.0x3.2 13.0MHz Crystal Unit

TST Parts No.: TZ0229A

Customer Parts No. : _____

Company: _____

Division: _____

Approved by: _____

Date: _____

Checked by: _____ Kelly Huang

Approval by: _____ TF Yang

Date: _____ 12/1/2005



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SMD 5.0x3.2 13.0MHz Crystal Unit

MODEL NO.: TZ0229A

REV. NO.: 3

Features:

- Surface Mount Seam Weld Package
- Excellent reliability performance
- Good Frequency Perturbation and Stability over temperature

RoHS Compliant
Lead free
Lead-free soldering

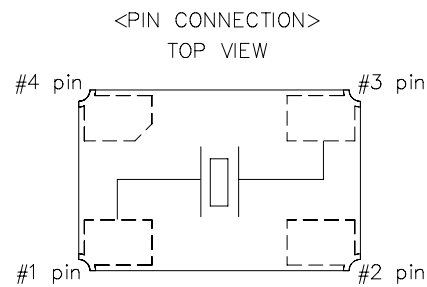
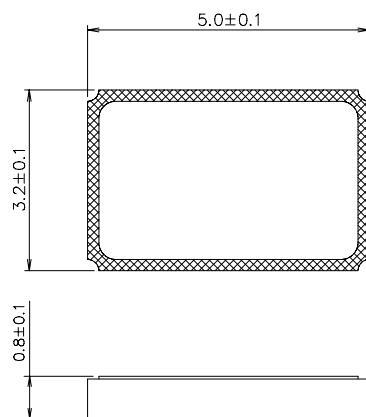
Description and Applications:

Surface mount 5.0mmx3.2mm crystal unit for use in wireless telecommunications devices, especially for a need of ultra miniature package for mobility.

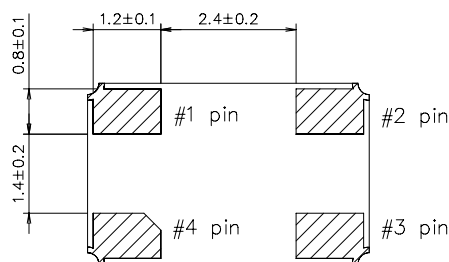
Electrical Specifications:

TZ0229A	Specification
Nominal Frequency	13.000000 MHz
Mode of Oscillation	Fundamental
Storage Temperature Range	-40°C to +85°C
Operating Temperature Range	-20°C to +85°C
Frequency Stability over Operating Temperature	+/-10 ppm (referred to the value at 25°C)
Frequency Make Tolerance (FL)	26.5+/-10 ppm @ 25°C +/- 3°C
Equivalent Series Resistance (ESR)	40 Ω max
Nominal Drive Level	10 uW
Shunt Capacitance (Co)	2.0 pF max
Load Capacitance (CL)	8 pF
Motional Capacitance (C1)	4.8 fF +/-10%
Insulation Resistance	500 MΩ min./DC 100V
Pulling Sensitivity	29.5 ppm/pF +/-10% (@ 8 pF Load)
Aging	+/-1.0 ppm/year @25°C
Marking	Laser marking

Mechanical Dimensions (mm):



Marking #2, #4 is connected with metal cap of top.

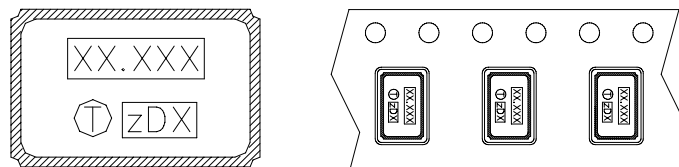


	Pin Connection
#1 pin	IN/OUT
#2 pin	GND
#3 pin	IN/OUT
#4 pin	GND

Marking:

Line 1: Frequency (13.000)

Line 2: TST Logo + Crystal Product Code + Date Code



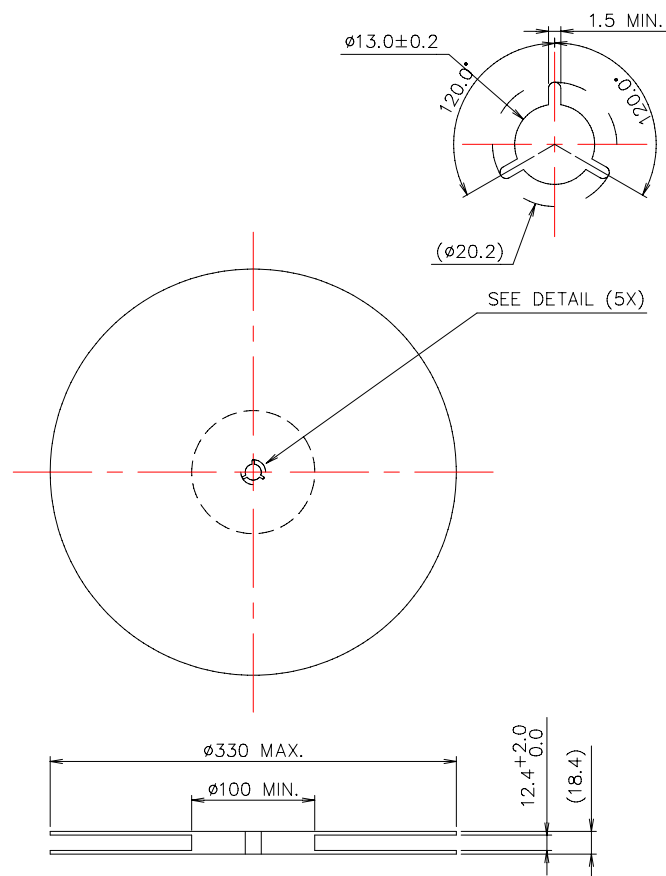
Product Code Table

Year	2001 2005	2002 2006	2003 2007	2004 2008
Product Code	Z	z	<u>Z</u>	<u>z</u>

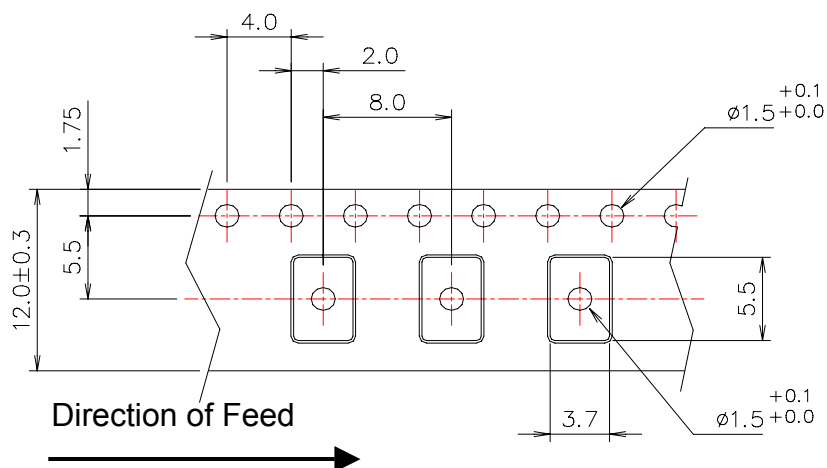
Date Code Table

WK01	WK02	WK03	WK04	WK05	WK06	WK07	WK08	WK09	WK10	WK11	WK12	WK13
A	B	C	D	E	F	G	H	I	J	K	L	M
WK14	WK15	WK16	WK17	WK18	WK19	WK20	WK21	WK22	WK23	WK24	WK25	WK26
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
WK27	WK28	WK29	WK30	WK31	WK32	WK33	WK34	WK35	WK36	WK37	WK38	WK39
a	b	c	d	e	f	g	h	i	j	k	l	m
WK40	WK41	WK42	WK43	WK44	WK45	WK46	WK47	WK48	WK49	WK50	WK51	WK52
n	o	p	q	r	s	t	u	v	w	x	y	z

Reel Dimensions (mm):



Tape Dimensions (mm):



[NOTE]:

1. Unless otherwise specified tolerance on dimension ± 0.1 mm.
2. Material: conductive polystyrene with color black.
3. 10 pitch cumulative tolerance ± 0.2 mm.

Reflow Profile:

