



TAI-SAW TECHNOLOGY CO., LTD.

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Approval Sheet For Product Specification

Issued Date: 6/9/2006 (REV. NO: 3)

Product Name: SMD 4.0x2.5 12.0MHz Crystal Unit

TST Parts No.: TZ0449A

Customer Parts No : _____

Company: _____
Division: _____
Approved by: _____
Date: _____

Checked by: _____ Kelly Huang

Approval by: _____ TF Yang

Date: _____ 6/9/2006



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SMD 4.0x2.5 12.0MHz Crystal Unit

MODEL NO.: TZ0449A

REV. NO.: 3

Features:

- Surface Mount Seam Weld Package
- Excellent Reliability Performance
- Good Frequency Perturbation and Stability over Temperature
- Ultra Miniature Package

RoHS Compliant
Lead free
Lead-free soldering

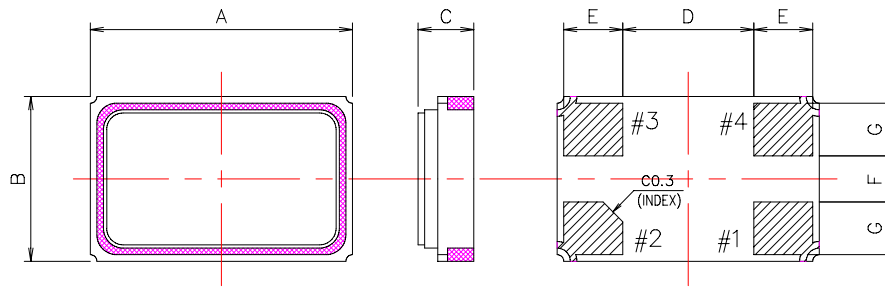
Description and Applications:

Surface mount 4.0mmx2.5mm crystal unit for use in wireless telecommunications devices, especially for a need of ultra miniature package for mobility.

Electrical Specifications:

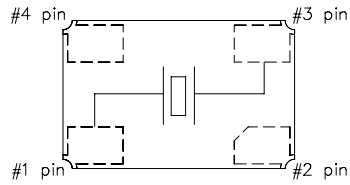
TZ0449A	Specification
Nominal Frequency	12.000000 MHz
Mode of Oscillation	Fundamental
Storage Temperature Range	-40°C to +85°C
Operating Temperature Range	-20°C to +70°C
Frequency Stability over Operating Temperature	+/-10 ppm (referred to the value at 25°C)
Frequency Make Tolerance (FL)	+/-10 ppm @ 25°C +/- 3°C
Equivalent Series Resistance (ESR)	80 Ω max.
Nominal Drive Level	10 uW
Shunt Capacitance (Co)	3 pF max
Load Capacitance (CL)	9 pF
Marking	Laser Marking

Mechanical Dimensions (mm): Base1



UNIT \ ITEM	A	B	C	D	E	F	G
mm	4.0 ±0.10	2.5 ±0.10	0.80 MAX.	2.0 REF.	0.9 ±0.10	0.7 REF.	0.8 ±0.10

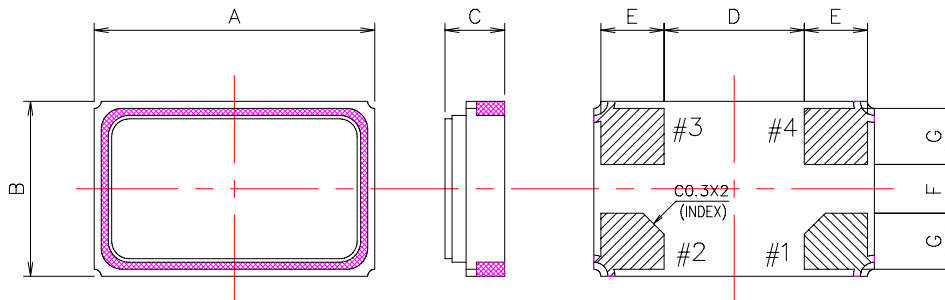
<PIN CONNECTION>
TOP VIEW



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

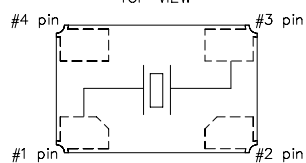
Marking #2, #4 is connected with metal cap of top.

Base2



UNIT \ ITEM	A	B	C	D	E	F	G
mm	4.0 ±0.10	2.5 ±0.10	0.80 MAX.	2.0 REF.	0.9 ±0.10	0.7 REF.	0.8 ±0.10

<PIN CONNECTION>
TOP VIEW



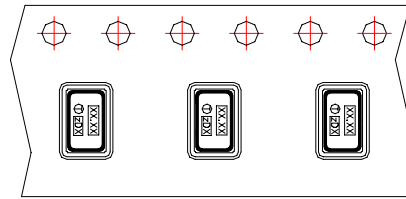
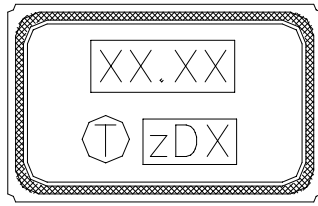
	Pin Connection
#1 pin	IN/OUT
#2 pin	GND
#3 pin	IN/OUT
#4 pin	GND

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

Marking:

Line 1: Frequency (13.00)

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



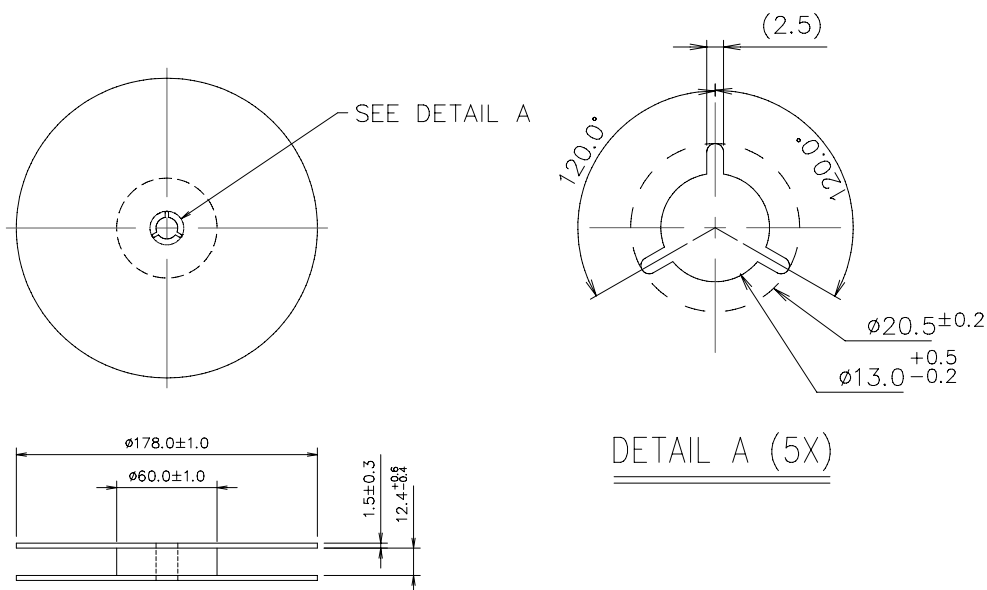
Product Code Table

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

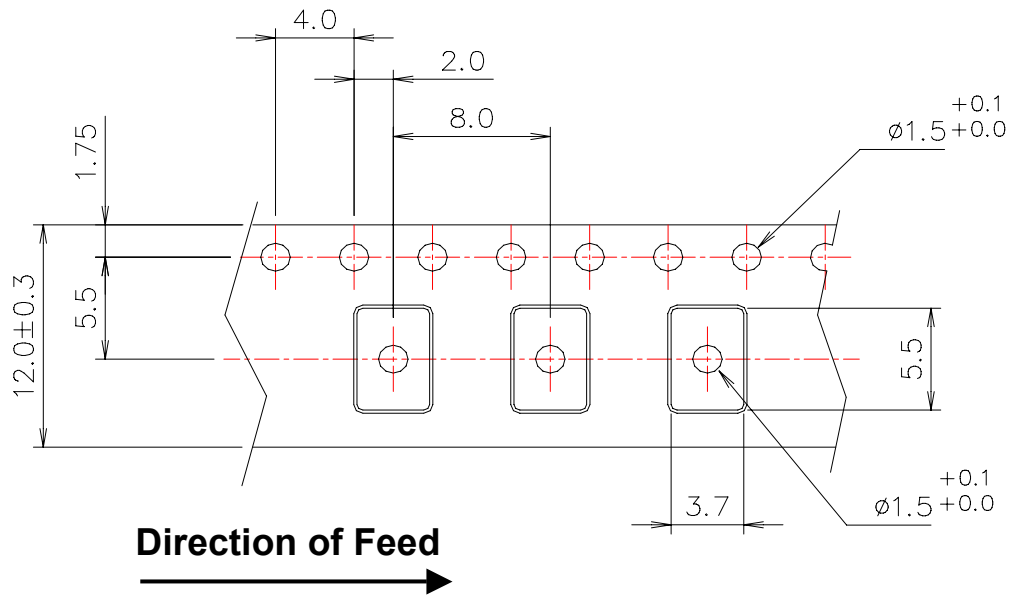
Date Code Table

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.
3. Color: black.
4. 10 pitch cumulative tolerance ± 0.2 mm.

Reflow Profile:

