



# TAI-SAW TECHNOLOGY CO., LTD.

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

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## Approval Sheet For Product Specification

Issued Date: 12/9/2004 (REV. NO: 2)

Product Name: SMD 5.0x3.2 12.288MHz Crystal Unit

TST Parts No.: TZ0296A

Customer Parts No. : \_\_\_\_\_

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

Checked by: \_\_\_\_\_ Kelly Huang

Approval by: \_\_\_\_\_ TF Yang

Date: \_\_\_\_\_ 12/9/2004



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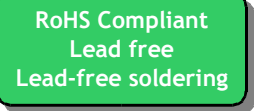
## SMD 5.0x3.2 12.288MHz Crystal Unit

MODEL NO.: TZ0296A

REV. NO.: 2

### Features:

- Surface Mount Seam Weld Package
- Excellent Reliability Performance
- Good Frequency Perturbation and Stability over temperature



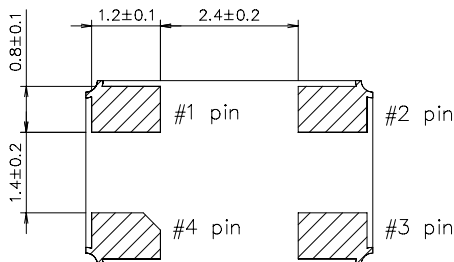
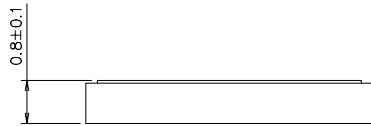
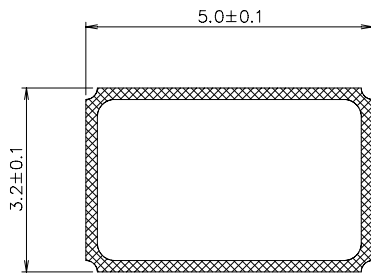
### Description and Applications:

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

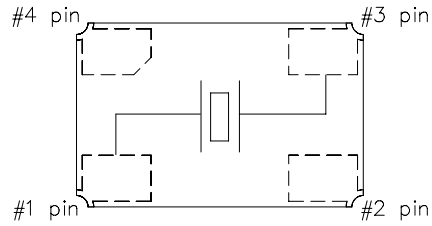
### Electrical Specifications:

TZ0296A	Specification
Nominal Frequency	12.288000 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 Range	+/-30 ppm (referred to the value at 25°C)
Frequency Make Tolerance (FL)	+/-30 ppm @ 25°C +/- 3°C
Equivalent Series Resistance (ESR)	60 Ω max
Nominal Drive Level	10 uW
Shunt Capacitance (Co)	3 pF max
Load Capacitance (CL)	8 pF
Insulation Resistance	500 MΩ min./DC 100V
Marking	Laser marking

# Mechanical Dimensions (mm):



<PIN CONNECTION>  
TOP VIEW



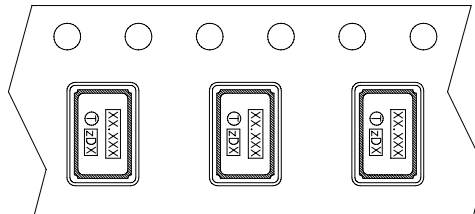
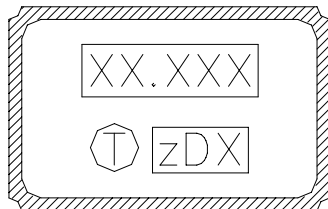
Marking #2, #4 is connected with metal cap of top.

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

## Marking:

Line 1: Frequency (12.288)

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



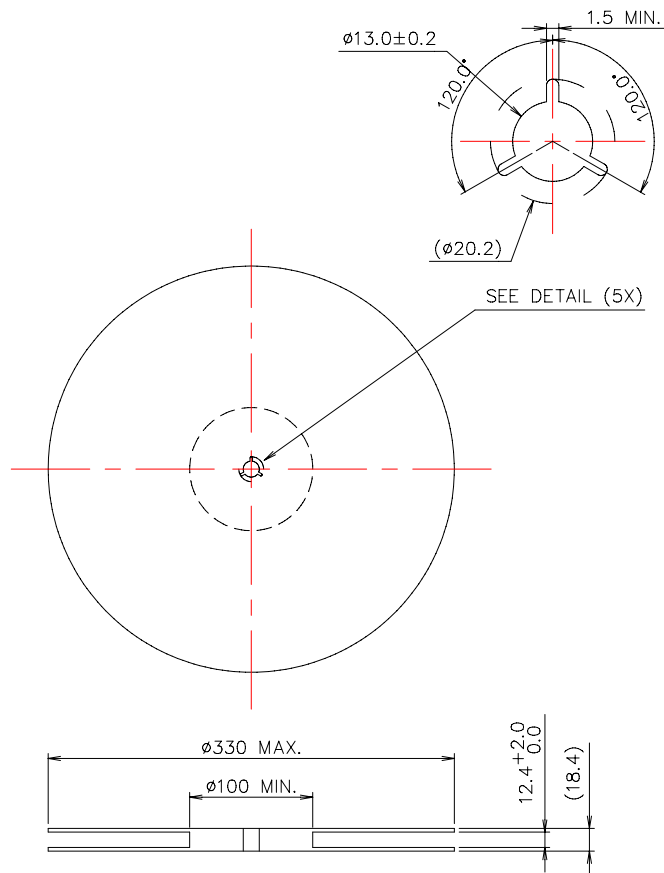
## Product Code Table

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

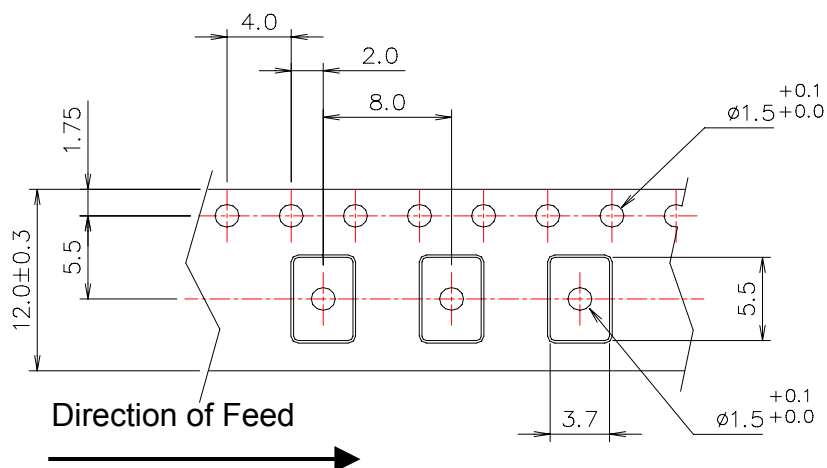
## Date Code Table

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  $\pm 0.1$  mm.
2. Material: conductive polystyrene with color black.
3. 10 pitch cumulative tolerance  $\pm 0.2$  mm.

# Reflow Profile:

1. Preheating shall be fixed at 140 ~ 160 °C for 60 ~ 90 seconds.
2. Ascending time to preheating temperature 150 °C shall be 30 seconds min.
3. Heating shall be fixed at 200 °C for 50 ~ 60 seconds and at 230±10 °C peak.

