

# TAI-SAW TECHNOLOGY CO., LTD.

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## Product Specifications Approval Sheet

Product Description: Crystal Unit SMD 3.2x2.5 26MHz

TST Part No.: TZ1689A

Customer Part No.: \_\_\_\_\_

Customer signature required
Company: _____
Division: _____
Approved by : _____
Date: _____

Checked by: \_\_\_\_\_ Ginger Huang *Ginger Huang*

Approved by: \_\_\_\_\_ Kelly Huang *Kelly Huang*

Date: \_\_\_\_\_ 09/04/2012

1. Customer signed back is required before TST can proceed with sample build and receive orders.
2. Orders received without customer signed back will be regarded as agreement on the specifications.
3. Any specifications changes must be approved upon by both parties and a new revision of specifications shall be released to reflect the changes.



**TAI-SAW TECHNOLOGY CO., LTD.**  
Crystal Unit SMD 3.2x2.5 26MHz

MODEL NO.: TZ1689A

REV. NO.: 4.0

**Revise:**

Rev.	Rev. Page	Rev. Account	Date	Ref. No.	Reviser
1	N/A	Initial release	10/30/09'	N/A	Ann Liu
2	4	Pin connection updated	07/28/10'	ECN-20100267	Ann Liu
3	4	Change Mechanical Dimensions	03/12/12'	ECN-201200106	Ginger Huang
4	3	Add DLD spec	09/04/12'	ECN-201200258	Ginger Huang



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## Crystal Unit SMD 3.2x2.5 26MHz

MODEL NO.: TZ1689A

REV. NO.: 4.0

### Features:

- Surface Mount Hermetic 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 3.2mmx2.5mm crystal unit for use in wireless communications devices, especially for a need of ultra miniature package for mobility.

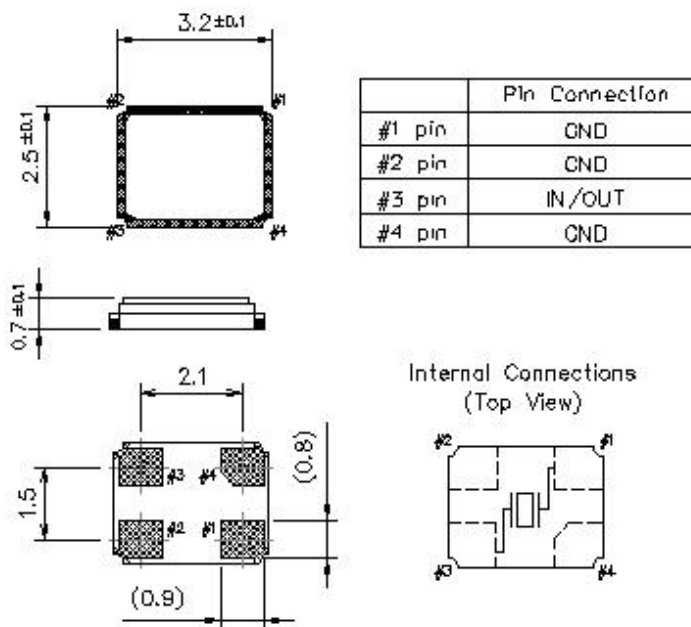
### Electrical Specifications:

TZ1689A	Specification
Nominal Frequency	26.000000 MHz
Mode of Oscillation	Fundamental
Storage Temperature Range	-40°C to +85°C
Frequency Perturbation	+/-1.0 ppm
Operating Temperature Range	-20°C to +75°C
Frequency Stability over Operating Temperature Range	+/-10 ppm (referred to the value at 25°C)
Frequency Make Tolerance (FL)	+/-10 ppm @ 25°C +/- 3°C
Equivalent Series Resistance (ESR)	30Ω max.
Drive Level Dependence Delta R Delta F	8 drive levels (0.00003, 0.0003, 0.003, 0.03, 0.3, 3, 50, 100uW) < 1.8 Ω max < 2 ppm max
Nominal Drive Level	100 uW (typ.) ; 200uW (max.)
Motional Capacitance (C1)	4.4 fF +/- 15%
Shunt Capacitance (Co)	3.0 pF max
Pulling Sensitivity	32ppm/pF +/- 10% (@7.3pF Load)
Load Capacitance (CL)	7.3 pF
Insulation Resistance	500 MΩ min./DC 100V

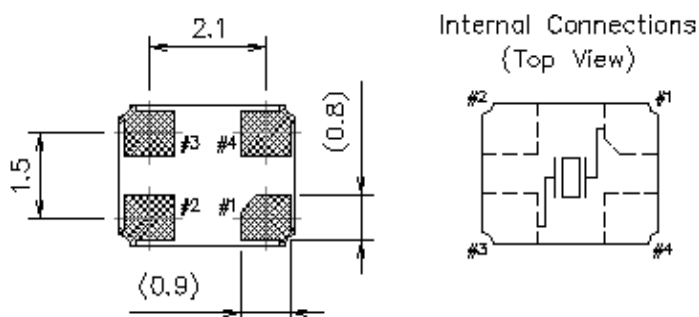
Marking	Laser Marking
Unit Weight	0.017+/-0.005 g

## Mechanical Dimensions (mm):

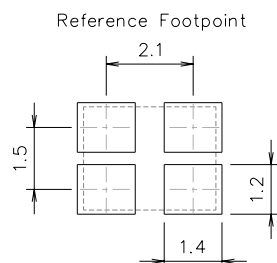
### Base1



### Base2



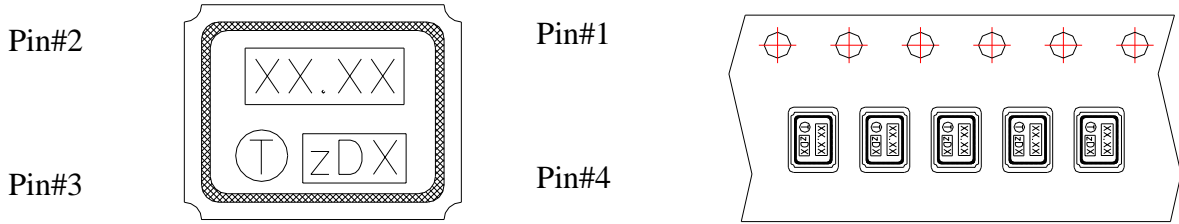
## Recommended Land Pattern: (unit: mm)



# Marking:

Line 1: Frequency (26.00)

Line 2: TST Logo + Crystal Product Code + Date Code + Traceability Code (XX)



The inner vision of Pin#1, Pin#4 side is XTAL blank mounting pad.

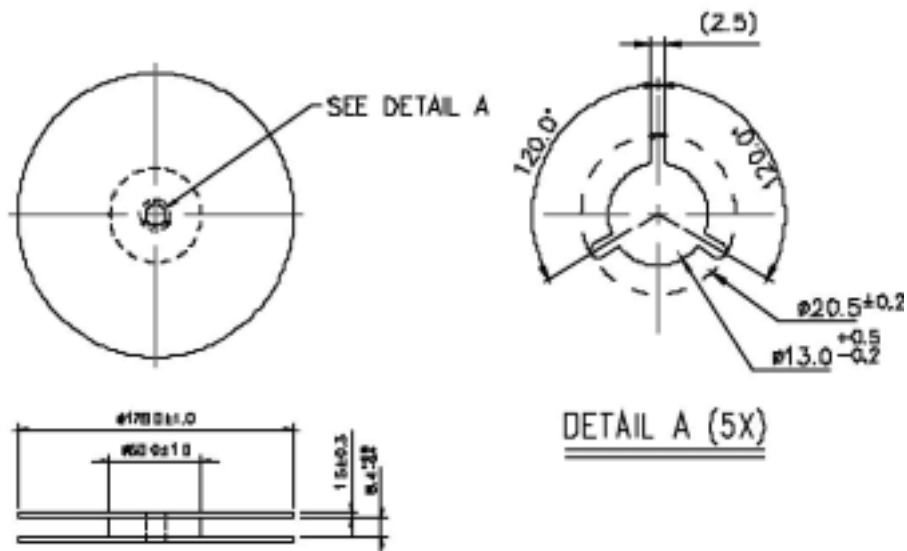
## Product Code Table

Year	2009	2010	2011	2012
	2013	2014	2015	2016
	2017	2018	2019	2020
product code	Z	z	Z	Z

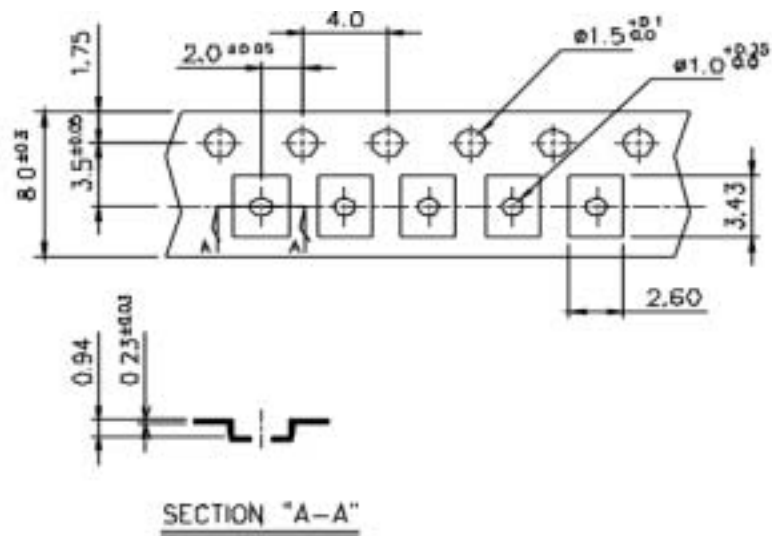
## Date Code Table

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):

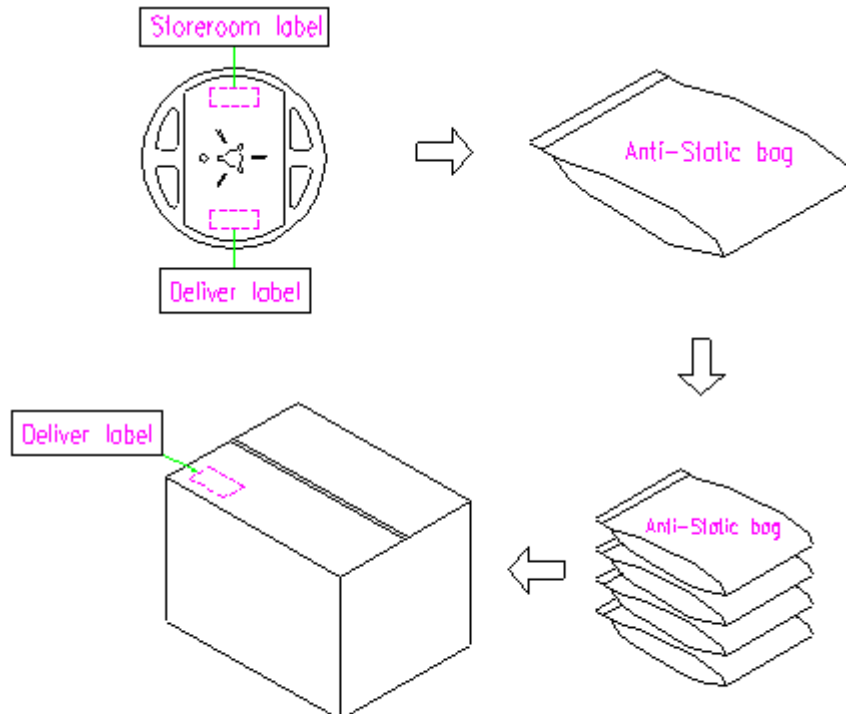


## [NOTE]

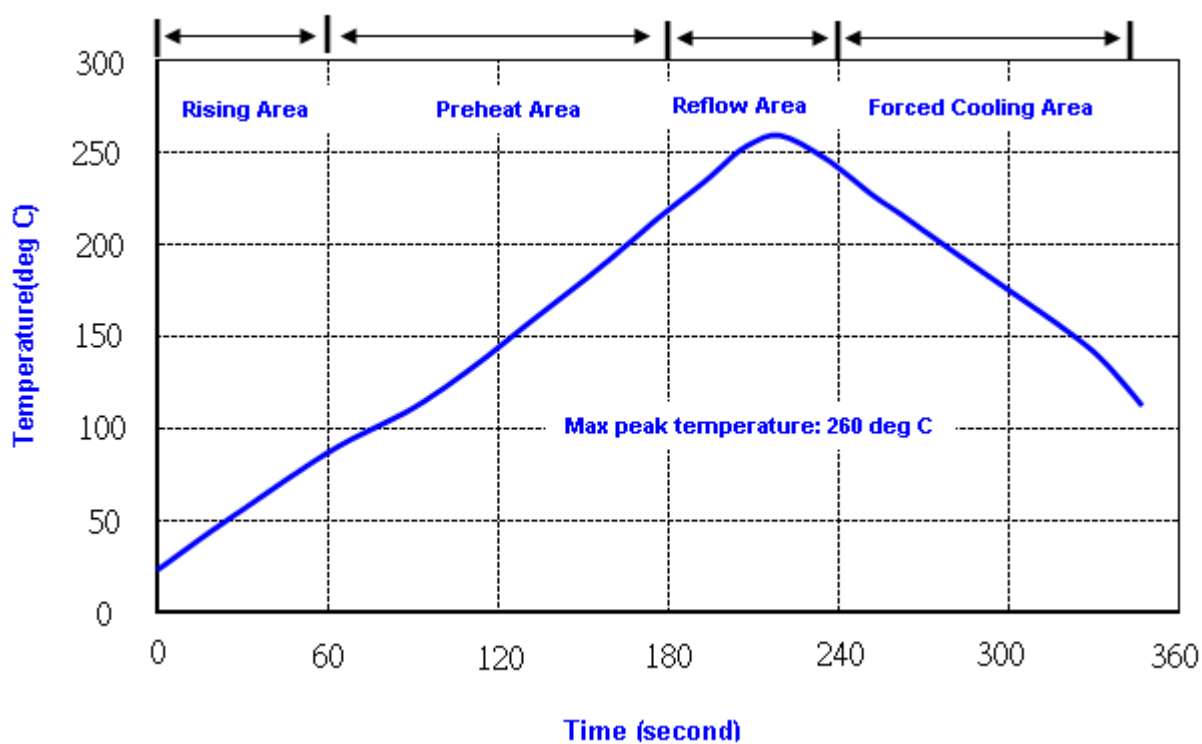
1. UNIT : mm.
2. UNLESS OTHERWISE SPECIFIED TOLERANCE ON DIM.  $\pm 0.1$ mm.
3. MATERIAL : CONDUCTIVE POLYSTYRENE.
4. COLOR : BLACK.
5. 10 PITCHES CUMULATIVE TOLERANCE  $\pm 0.2$ mm.

## Packing Quantity/Packing:

3K pcs maximum per reel



## Reflow Profile:



- Note: 1. Max peak temperature: 260 $\pm$ 5 deg C; Time: 10 $\pm$ 2 sec  
2. Temperature: 217 $\pm$ 5 deg C; Time: 90~100 sec

