

**TAI-SAW TECHNOLOGY CO., LTD.**

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Product Specifications Approval Sheet

Product Description: Crystal Unit SMD 2.0x1.6 16.0MHz

TST Part No.: TZ2486A

Customer Part No.: _____

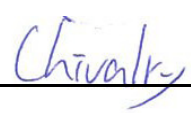
Customer signature required

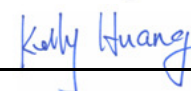
Company: _____

Division: _____

Approved by : _____

Date: _____

Checked by: _____ Chivalry Lin 

Approved by: _____ Kelly Huang 

Date: _____ 07/23/2020

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.

Rev.	Rev. Page	Rev. Account	Date	Ref. No.	Revised by
1	N/A	Initial release	12/06/12'	N/A	Stephen Wei
2	4	Update base higher	02/23/13'	ECN-201300064	Stephen Wei
3	3	Change ESR Spec	06/16/15'	ECN-201500165	Derick Lin
3	7	Revise RA table	06/16/15'	WI-76Q01	Derick Lin
4	P4	Change Base Drawing	03/30/17'	ECN-201700088	Naco Kuo
5	4、5	Change Base drawing and Mraking Rule	07/23/20'	ECN-202000279	Chivalry Lin



MODEL NO.: TZ2486A

REV. NO.: 5.0

Features:

- Surface Mount Hermetic Package
- Excellent Reliability Performance
- Good Frequency Perturbation and Stability over temperature
- Ultra Miniature Package
- Moisture Sensitivity Level (MSL) : Level-1

RoHS Compliant
Lead-free soldering

Description and Applications:

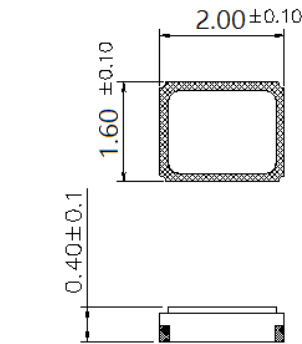
Surface mount 2.0mmx1.6mm crystal unit for use in wireless communications devices, especially for a need of ultra miniature package for mobility.

Electrical Specifications:

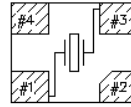
TZ2486A	Specification
Nominal Frequency	16.000000 MHz
Mode of Oscillation	Fundamental
Storage Temperature Range	-40°C to +90°C
Operating Temperature Range	-20°C to +80°C
Frequency Stability over Operating Temperature Range	+/-20 ppm (referred to the value at 25°C)
Frequency Make Tolerance (FL)	+/-10 ppm @ 25°C +/- 3°C
Equivalent Series Resistance (ESR)	150 Ω max
Nominal Drive Level	10uW typical and 100uW max
Shunt Capacitance (Co)	5.0 pF max
Load Capacitance (CL)	8 pF
Aging	+/-1ppm/year
Insulation Resistance	500 M Ω min./DC 100V
Marking	Laser Marking
Unit Weight	5.7mg+/-0.5mg

Mechanical Dimensions (mm):

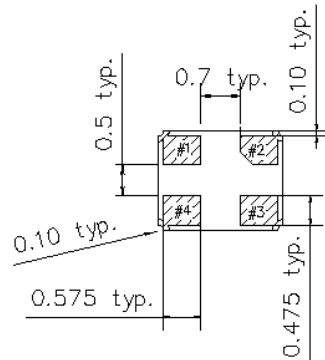
Base 1



Internal Connections
(Top View)

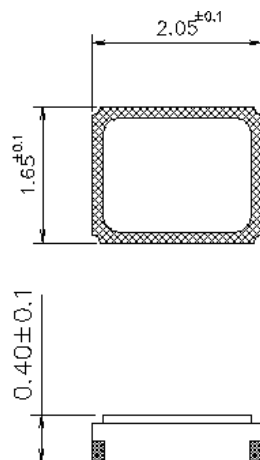


[NOTE] #2, #4 is connected with a metal cover

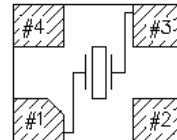


	Pin connection
#1 Pin	IN/OUT
#2 Pin	GND
#3 Pin	IN/OUT
#4 Pin	GND

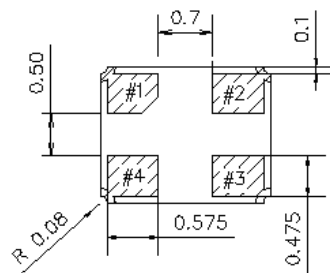
Base 2



Internal Connections
(Top View)

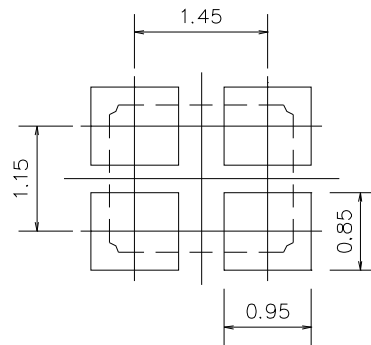


[NOTE] #2, #4 is connected with a metal cover



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

Recommended Land Pattern: (unit: mm)

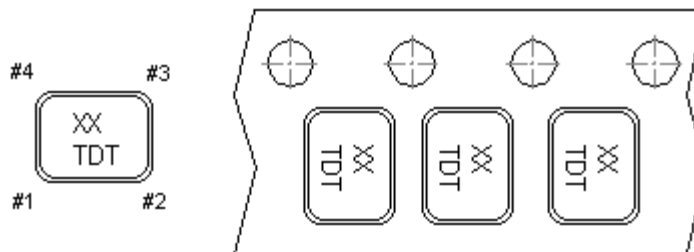


Recommended Land Pattern

Marking:

Line 1: XX; Frequency (16)

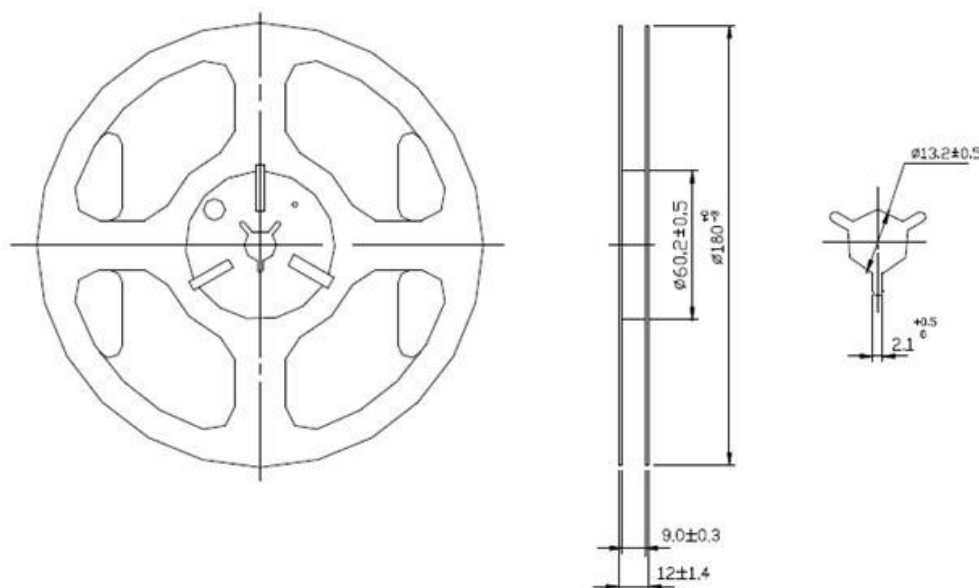
Line 2: T; Traceable Code + D; date Code of Year/Month+ T ; Traceability code (1 or no letter)



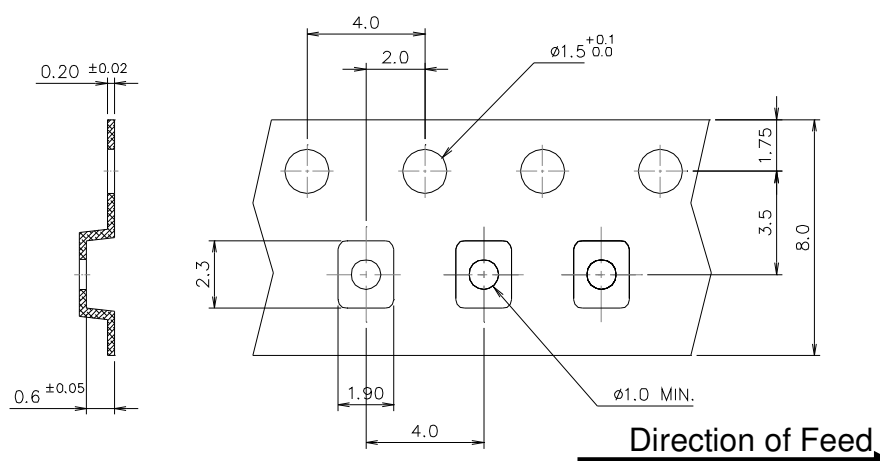
Date Code Table: Year/Month

Year/Month	1	2	3	4	5	6	7	8	9	10	11	12
2014	A	B	C	D	E	F	G	H	J	K	L	M
2015	N	P	Q	R	S	T	U	V	W	X	Y	Z
2016	a	b	c	d	e	f	g	h	i	j	k	m
2017	n	p	q	r	s	t	u	v	w	x	y	z
2018	A	B	C	D	E	F	G	H	J	K	L	M
2019	N	P	Q	R	S	T	U	V	W	X	Y	Z
2020	a	b	c	d	e	f	g	h	i	j	k	m
2021	n	p	q	r	s	t	u	v	w	x	y	z
2022	A	B	C	D	E	F	G	H	J	K	L	M
2023	N	P	Q	R	S	T	U	V	W	X	Y	Z
2024	a	b	c	d	e	f	g	h	i	j	k	m
2025	n	p	q	r	s	t	u	v	w	x	y	z

Reel Dimensions (mm):



Tape Dimensions (mm):

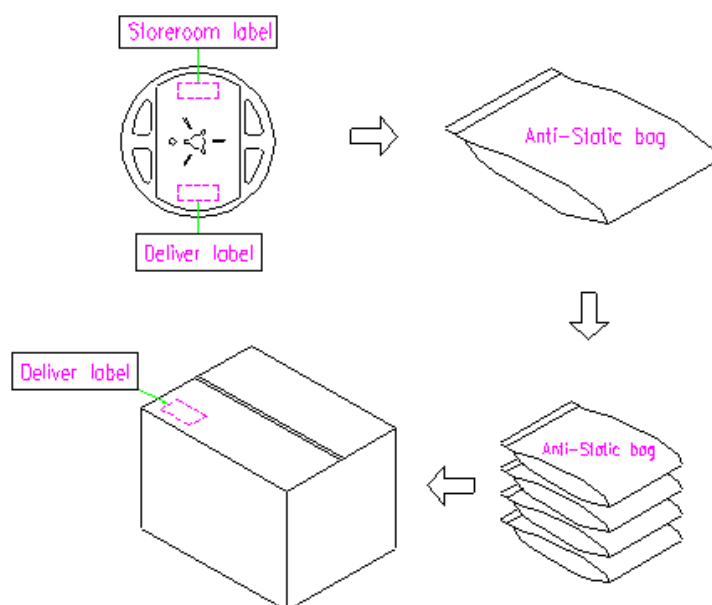


[NOTE]:

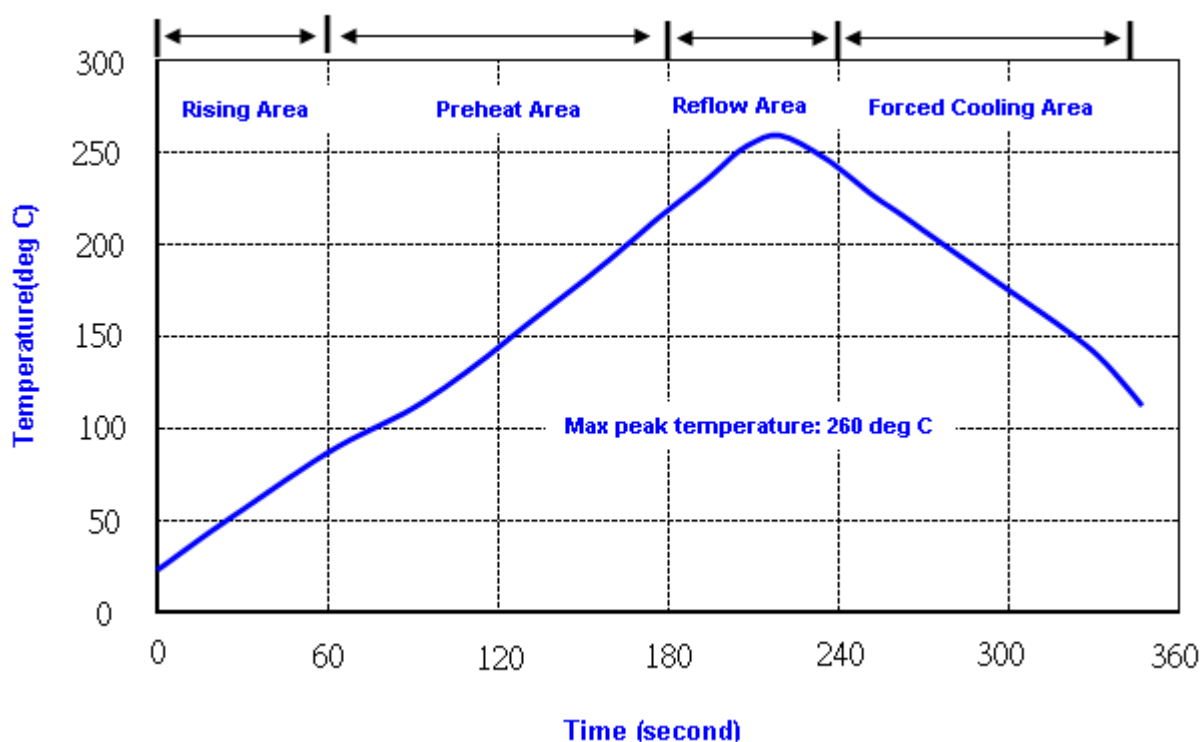
1. Unless otherwise specified tolerance on dimension ± 0.1 mm.
2. Material: conductive polystyrene with color black.
3. 10 pitch cumulative tolerance ± 0.2 mm.

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

Reliability Specifications

Test name	Test process / method	Reference standard
Mechanical characteristics		
resistance to Soldering heat (IR reflow)	Temp/ Duration : 265°C / 10sec × 2 times Total time : 4min.(IR-reflow)	EIAJED-4701 -300(301)M(II)
Vibration	Total peak amplitude : 1.5mm Vibration frequency : 10 to 2000 Hz Sweep period : 20 minute Vibration directions : 3 mutually perpendicular Duration : 2 hr / direc.	MIL-STD 202G method 204
Mechanical Shock	directions : 3 impacts per axis Acceleration : 3000g's, +20/-0 % Duration : 0.3 ms (total 18 shocks) Waveform : Half-sine	MIL-STD 202G method 213
Solderability	Solder Temperature: 265±5 °C Duration time: 5±0.5 seconds.	J-STD-002
Environmental characteristics		
Thermal Shock	Heat cycle conditions -40 °C (30min) ↔ 85 °C (30min) * cycle time : 10 times	MIL-STD 883G method 1010.8
Humidity test	Temperature : 85 ± 2 °C Relative humidity : 85% Duration : 96 hours	MIL-STD 202G method 103
Dry heat (Aging test)	Temperature : 125 ± 2 °C Duration : 168 hours	MIL-STD 202G method 108A
Cold resistance (Low Temp Storage)	Temperature : -40 ± 2 °C Duration : 96 hours	IEC 60068-2-1