



# 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: [tstsales@mail.taisaw.com](mailto:tstsales@mail.taisaw.com) Web: [www.taisaw.com](http://www.taisaw.com)

## Product Specifications Approval Sheet

Product Description: Crystal Oscillator SMD 3.2x2.5 25.00MHz

TST Part No.: TW0623BA4232

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

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

Checked by: \_\_\_\_\_ Glen Peng *Glen*

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

Date: \_\_\_\_\_ 03/29/2022

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.**  
**SMD 3.2x2.5 25.00MHz Crystal Oscillator**

MODEL NO.: TW0623BA4232

REV. NO.: 1.0

**Revise:**

| Rev. | Rev. Page | Rev. Account    | Date      | Ref. No. | Reviser   |
|------|-----------|-----------------|-----------|----------|-----------|
| 1    | N/A       | Initial release | 03/29/22' | N/A      | Glen Peng |



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## SMD 3.2x2.5 25.00MHz Crystal Oscillator

MODEL NO.: TW0623BA4232

REV. NO: 1.0

### Features:

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

RoHS Compliant  
Lead free  
Lead-free soldering

### Application:

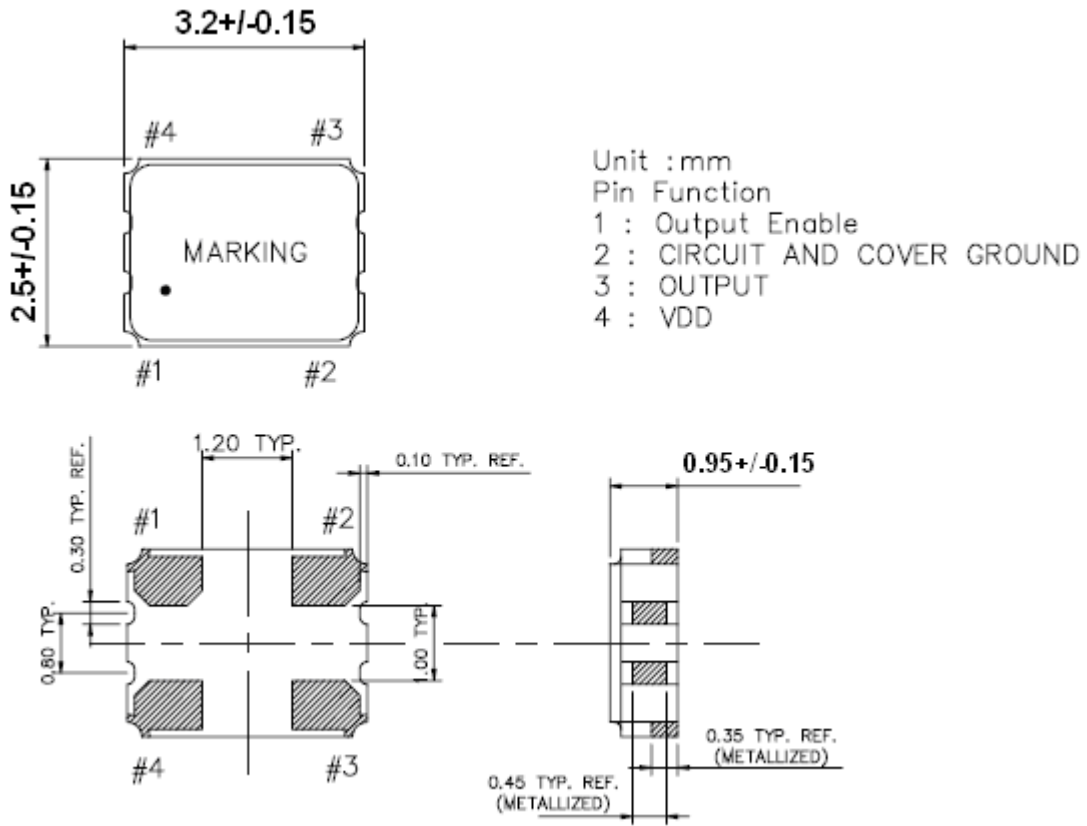
- Supply Voltage CMOS Output
- Option-able stand-by functions for output (Tri-state output).

### Electrical Characteristics:

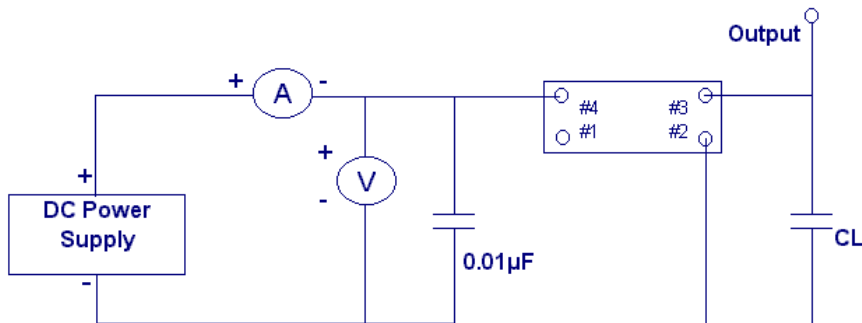
| TW0623BA4232   | Specifications   |
|--|--|
| Nominal Frequency, Fo  | 25.000000 MHz  |
| Storage Temperature Range  | -40°C to +125°C  |
| Operating Temperature Range  | -40°C to +85°C   |
| Power Supply Voltage, Vcc  | 1.2 V +/- 5%   |
| Load   | 15pF   |
| “0” Level<br>“1” Level   | Vol: 10%Vcc max<br>Voh:90%Vcc min  |
| Power Supply Current, Icc  | 4 mA max   |
| Frequency Accuracy <sup>1</sup>  | +/-25 ppm max  |
| Duty Cycle   | 40% ~ 60%  |
| Start-up Time  | 5 ms max   |
| Rise Time ( 10% -> 90% of final RF level in Vp-p )<br>Fall Time ( 90% -> 10% of final RF level in Vp-p ) | 3 nsec (max.)  |
| Aging  | +/- 3.0 ppm/first year   |
| Enable/Disable Function  | PIN 1: Vih:70%Vcc min or Open, PIN 3: Output Enable<br>PIN 1: Vil:30%Vcc max, PIN 3:Output Disable |

#Note 1: Frequency accuracy includes 25C tolerance, operating temperature range -40 to 85 deg C, aging and voltage or load change

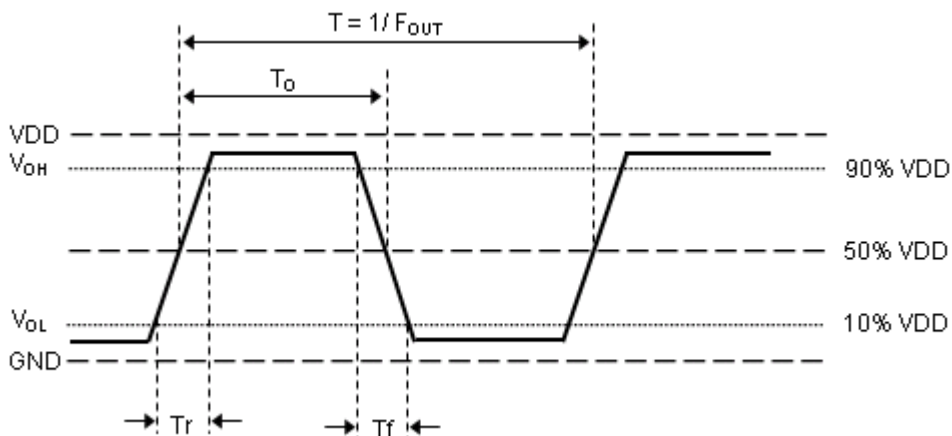
### Mechanical Dimensions: (Unit: mm)



### Test Circuit:



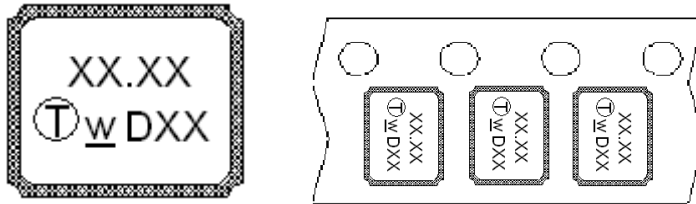
### Output Waveform :



# Marking:

Line 1: 25.00(Frequency)

Line 2: TST logo + Product Code + Data Code + Traceability Code (1 or 2 letters)



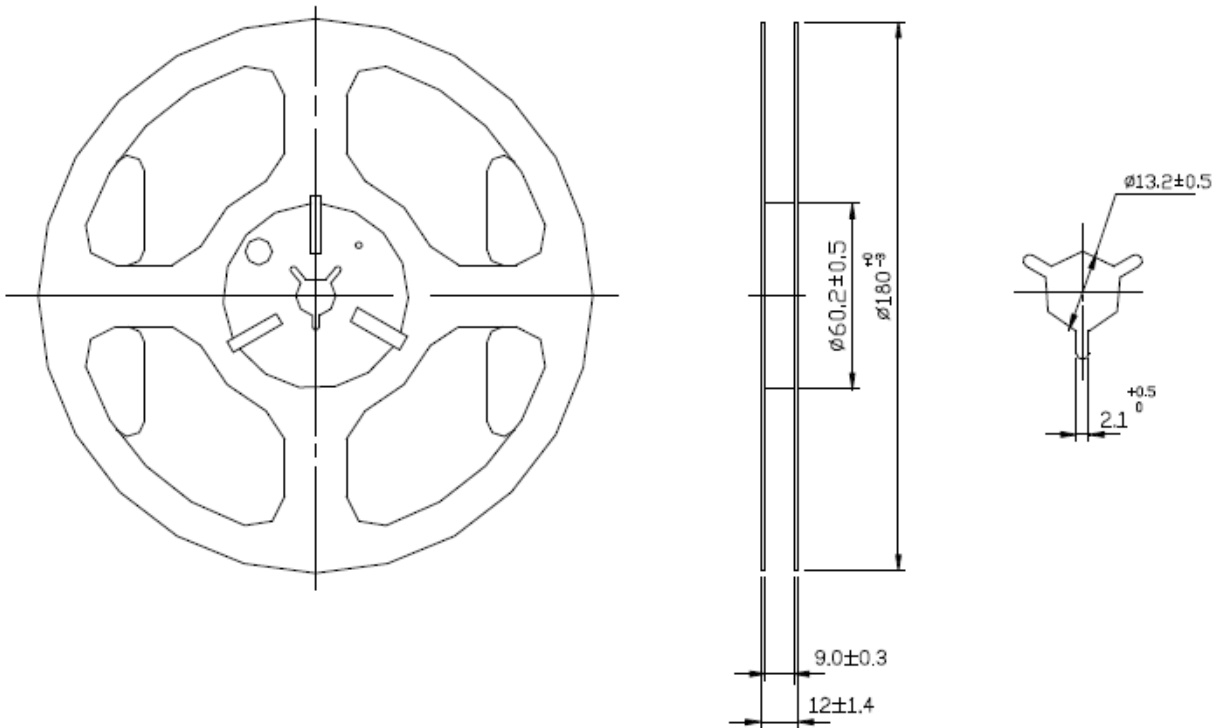
## Product Code Table

|              |      |      |          |          |
|--------------|------|------|----------|----------|
| Year         | 2021 | 2022 | 2023     | 2024     |
|              | 2025 | 2026 | 2027     | 2028     |
|              | 2029 | 2030 | 2031     | 2032     |
| Product Code | W    | w    | <u>W</u> | <u>w</u> |

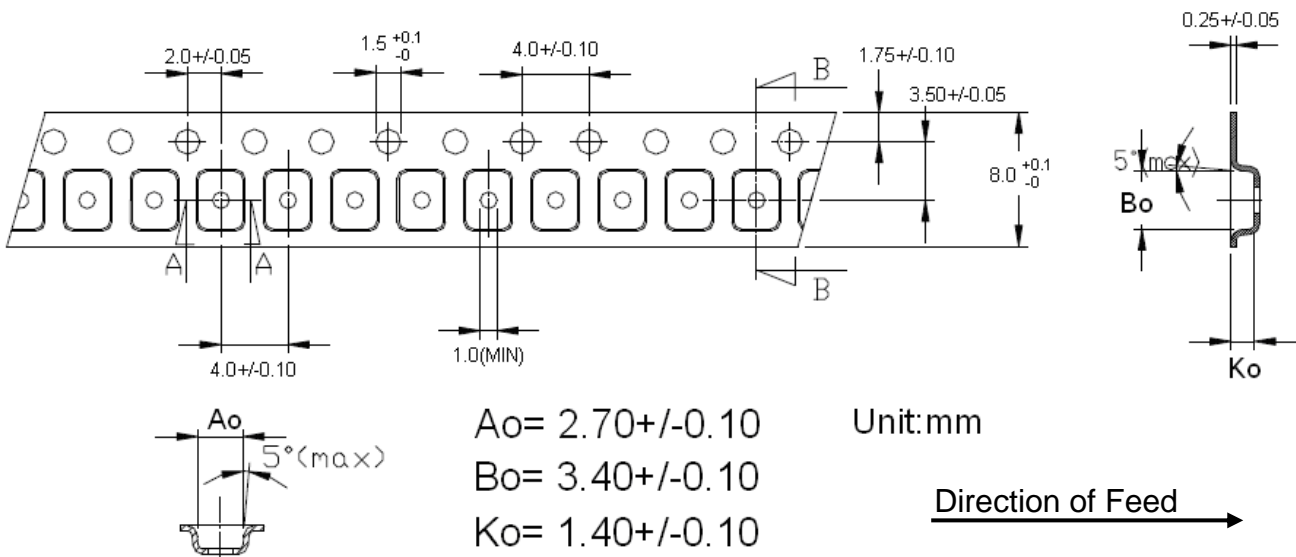
## Date Code Table

| 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):

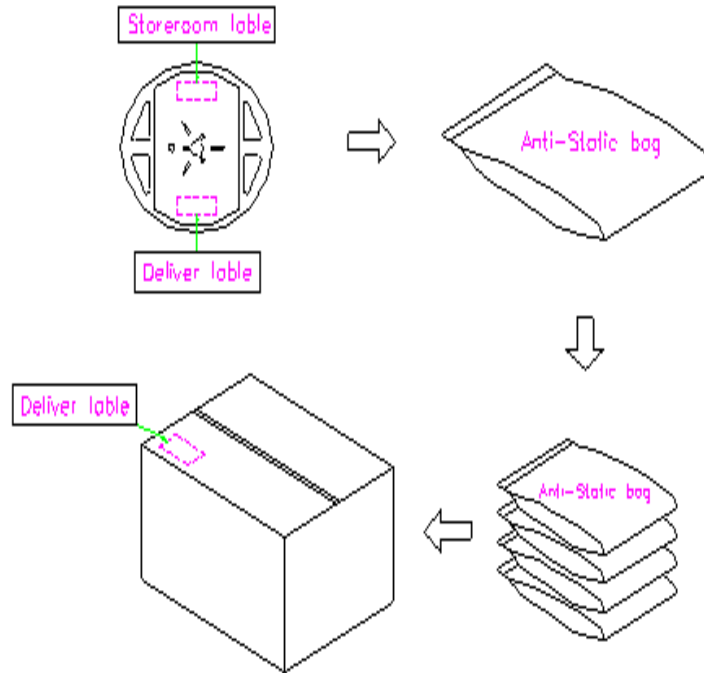


[NOTE]:

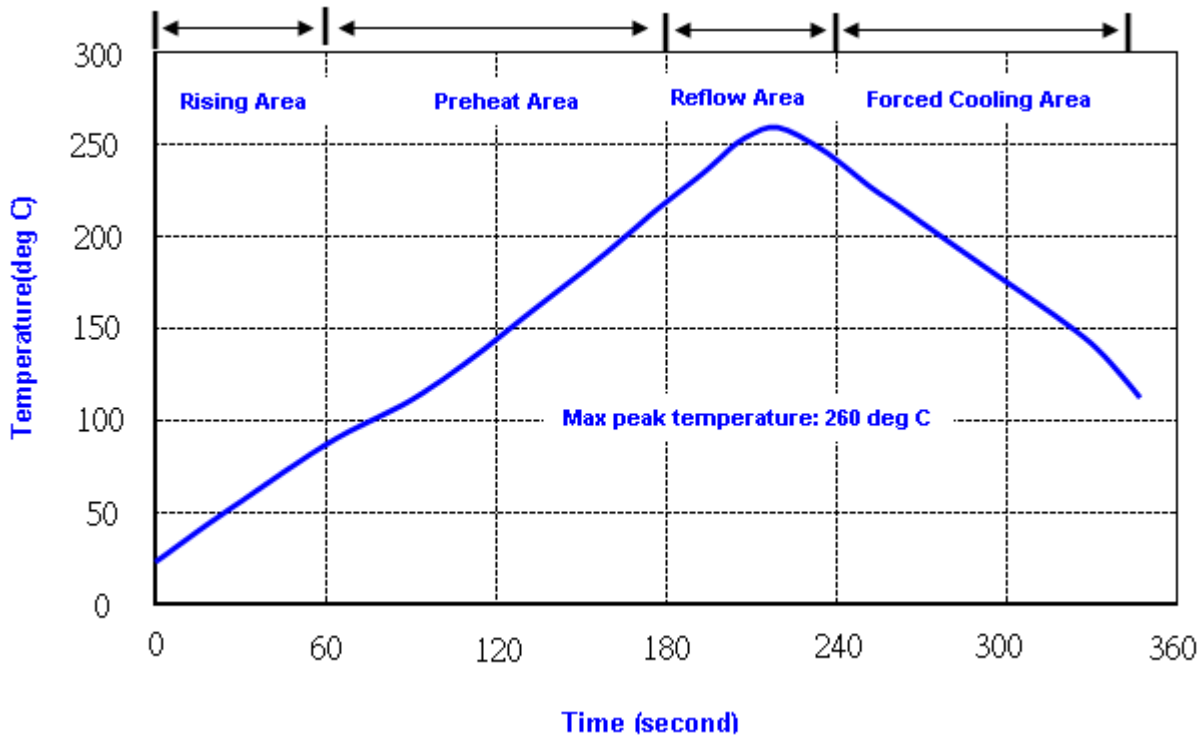
1. Unless otherwise specified tolerance on dimension  $\pm 0.1$  mm.
2. Material: conductive polystyrene with color black.
3. 10 pitch cumulative tolerance  $\pm 0.2$  mm.

## 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            |
|--|--|-------------------------------|
| <b>Mechanical characteristics</b>        |  |                               |
| resistance to Soldering heat (IR reflow) | Temp./ Duration : 265°C /10sec x2 times<br>Total time : 4min.(IR-reflow)   | EIAJED-4701<br>-300(301)M(II) |
| Vibration                                | Total peak amplitude : 1.5mm<br>Vibration frequency : 10 to 2000 Hz<br>Sweep period : 20 minute<br>Vibration directions : 3 mutually perpendicular<br>Duration : 2 hr / direc. | MIL-STD 202G<br>method 204    |
| Mechanical Shock                         | directions : 3 impacts per axis<br>Acceleration : 3000g's, +20/-0 %<br>Duration : 0.3 ms (total 18 shocks)<br>Waveform : Half-sine   | MIL-STD 202G<br>method 213    |
| Solderability                            | Solder Temperature:265±5°C<br>Duration time: 5±0.5 seconds.  | J-STD-002                     |
| <b>Environmental characteristics</b>     |  |                               |
| Thermal Shock                            | Heat cycle conditions<br>-40 °C (30min) ↔ 85 °C (30min)<br>* cycle time : 10 times   | MIL-STD 883G<br>method 1010.8 |
| Humidity test                            | Temperature : 85 ± 2 °C<br>Relative humidity : 85%<br>Duration : 96 hours  | MIL-STD 202G<br>method 103    |
| Dry heat ( Aging test )                  | Temperature : 125 ± 2 °C<br>Duration : 168 hours   | MIL-STD 202G<br>method 108A   |
| Cold resistance (Low Temp Storage)       | Temperature : -40 ± 2 °C<br>Duration : 96 hours  | IEC 60068-2-1                 |