



TAI-SAW TECHNOLOGY CO., LTD.

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Product Specifications Approval Sheet

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

TST Part No.: TZ3253A

Customer Part No.: _____

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

Checked by: _____ Chivalry Lin *Chivalry*

Approved by: _____ Kelly Huang *Kelly Huang*

Date: _____ 05/04/2017

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 25.00MHz

MODEL NO.: TZ3253A

REV. NO.: 2

Revise:

| Rev. | Rev. Page | Rev. Account | Date | Ref. No. | Revised by |
|------|-----------|-----------------------------------|-----------|---------------|--------------|
| 1 | N/A | Initial release | 01/04/17' | N/A | Chivalry Lin |
| 2 | 3、6 | Add DLD spec and MSL : Level-1 | 05/04/17' | ECN-201700164 | Chivalry Lin |



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Crystal Unit SMD 3.2x2.5 25.00MHz

MODEL NO.: TZ3253A

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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:

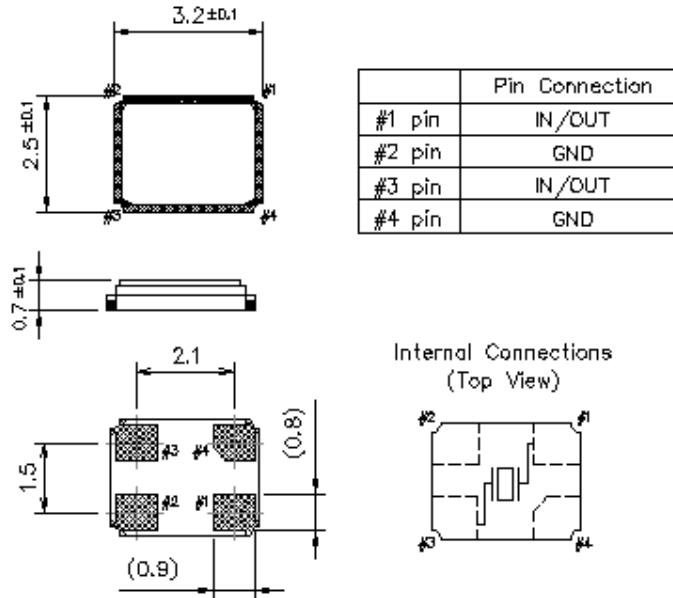
Surface mount 3.2mmx2.5mm crystal unit for customer for use in wireless communications devices, especially for a need of ultra miniature package for mobility.

Electrical Specifications:

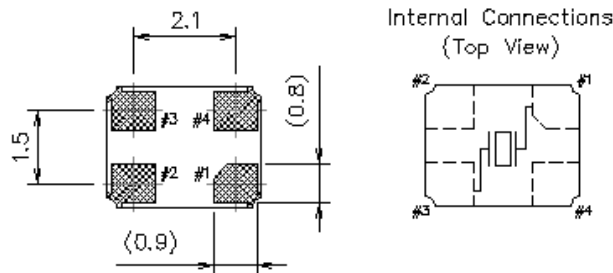
| TZ3253A | Specification |
|---|--|
| Nominal Frequency | 25.000000 MHz |
| Mode of Oscillation | Fundamental |
| Storage Temperature Range | -55°C to +125°C |
| Operating Temperature Range | -40°C to +105°C |
| Frequency Stability over Operating Temperature | +/- 20 ppm (referred to the value at 25°C) |
| Frequency Make Tolerance (FL) | +/- 10 ppm @ 25°C +/- 3°C |
| Equivalent Series Resistance (ESR) | 50 Ω max. |
| Nominal Drive Level | 10uW typical and 200uW max |
| Shunt Capacitance (Co) | 3.0 pF max |
| Load Capacitance (CL) | 10 pF |
| DLD DR Retrace DR Max-Min DF Retrace DF Max-Min | 8point (0.001, 0.01, 0.03, 0.1, 0.3, 1, 50, 100uW) 2 ohm max. 4 ohm max. 2 ppm max. 4 ppm max. |
| Aging | +/-3 ppm/year |
| Insulation Resistance | 500 MΩ min./DC 100V |
| Marking | Laser Marking |
| Unit Weight | 0.017+/-0.005 g |

Mechanical Dimensions (mm):

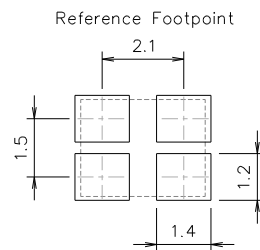
Base 1



Base 2



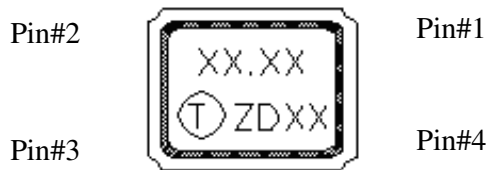
Recommended Land Pattern: (unit: mm)



Marking:

Line 1: Frequency (25.00)

Line 2: TST Logo + Crystal Product Code + Date Code + Traceability code (1 or 2 letters)



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

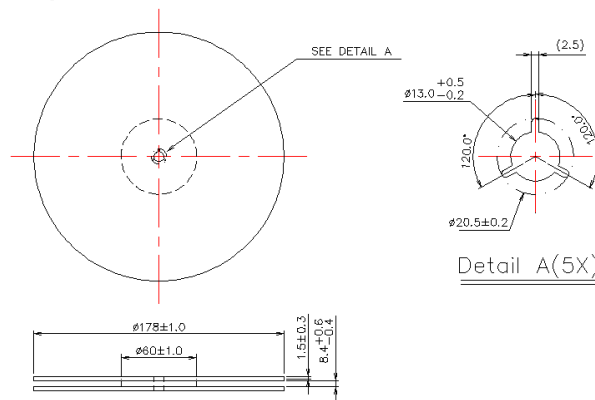
Product Code Table

| | | | | |
|--------------|------|------|----------|----------|
| Year | 2013 | 2014 | 2015 | 2016 |
| | 2017 | 2018 | 2019 | 2020 |
| | 2021 | 2022 | 2023 | 2024 |
| product code | Z | z | <u>Z</u> | <u>z</u> |

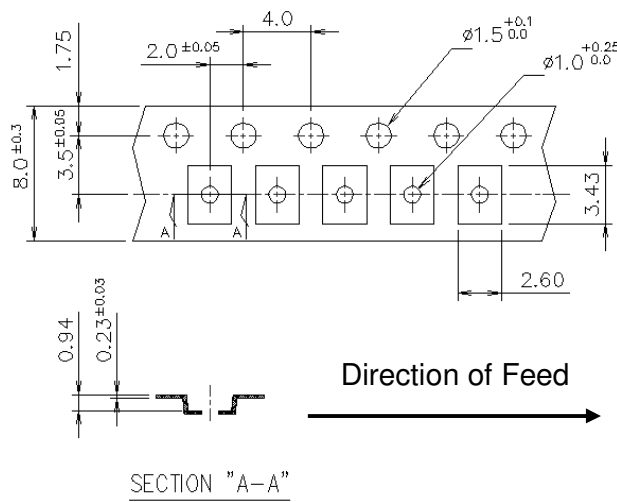
Date Code Table

| | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 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):

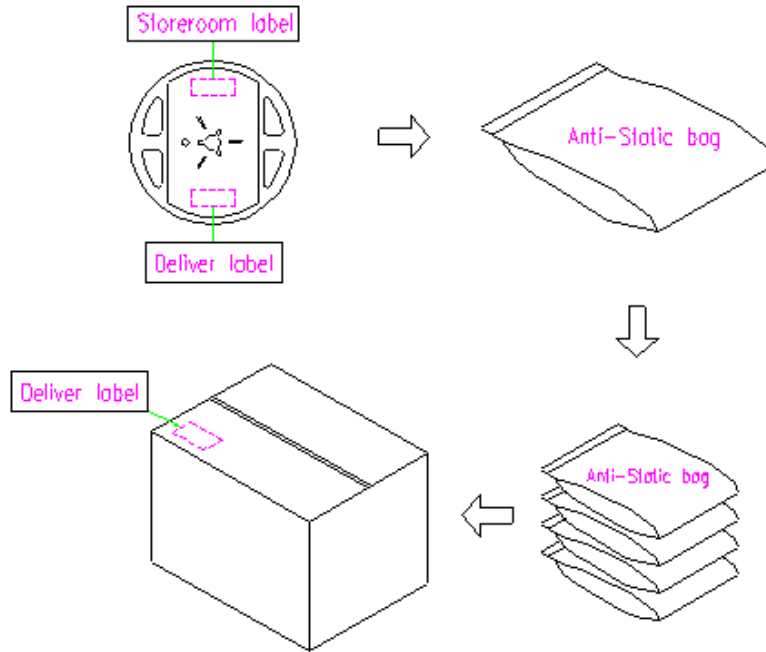


[NOTE]

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

Packing Quantity/Packing:

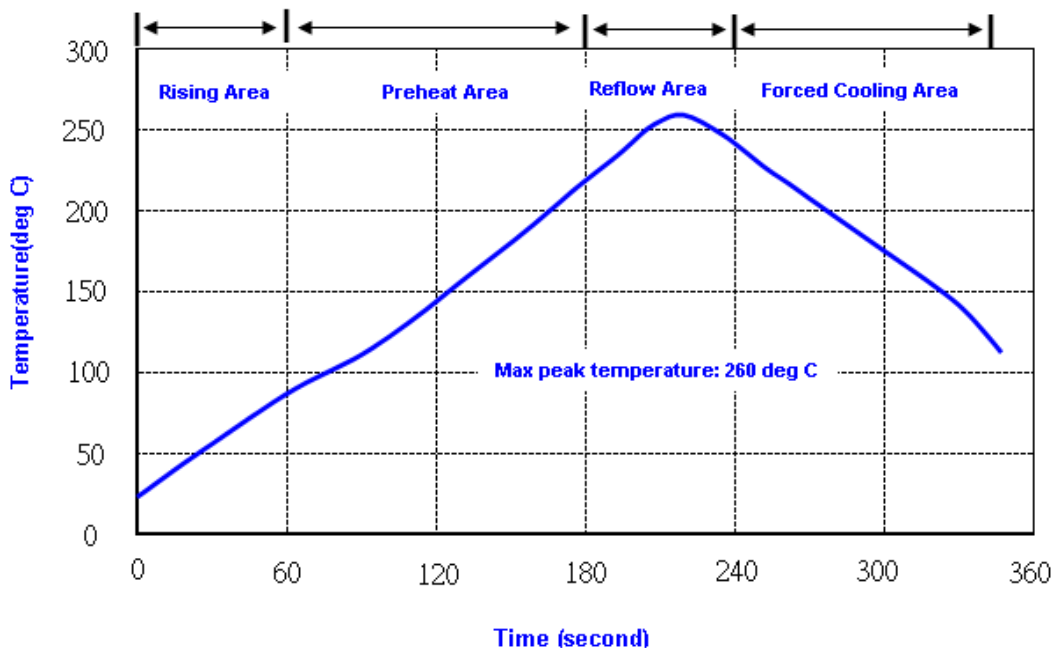
3K pcs maximum per reel



MSL : Level-1

Place of Production : Taiwan

Reflow Profile: Two times in process before function test



Note: 1. Max peak temperature: 260+/-5 deg C; Time: 10+/-2 sec

2. Temperature: 217+/-5 deg C; Time: 90~100 sec

TAI-SAW TECHNOLOGY CO., LTD.

TST DCC
Release document

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 |