



TAI-SAW TECHNOLOGY CO., LTD.

No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,
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Product Specifications Approval Sheet

Product Name: TCXO SMD 3.2x2.5 24.0000MHz

TST Part No.: TX0283D

Customer Part No.: _____

| |
|--------------------|
| Company: _____ |
| Division: _____ |
| Approved by: _____ |
| Date: _____ |

Checked by: CC Hsu *CC Hsu*

Approved by: Kelly Huang *Kelly Huang*

Date: 4/19/2010

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.



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TCXO SMD 3.2x2.5 24.0000MHz

MODEL NO.: TX0283D

REV. NO.: 1

Revise:

| Rev. | Rev. Page | Rev. Account | Date | Ref. No. | Revised by |
|------|-----------|-----------------|----------|----------|------------|
| 1 | N/A | Initial release | 4/19/10' | N/A | C.C. Hsu |



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TCXO SMD 3.2x2.5 24.0000MHz

MODEL NO.: TX0283D

REV. NO.: 1

Features:

- Ultra Miniature SMD Package
- Good Frequency Stability
- Good Phase Noise Response

RoHS Compliant
Lead free
Lead-free soldering

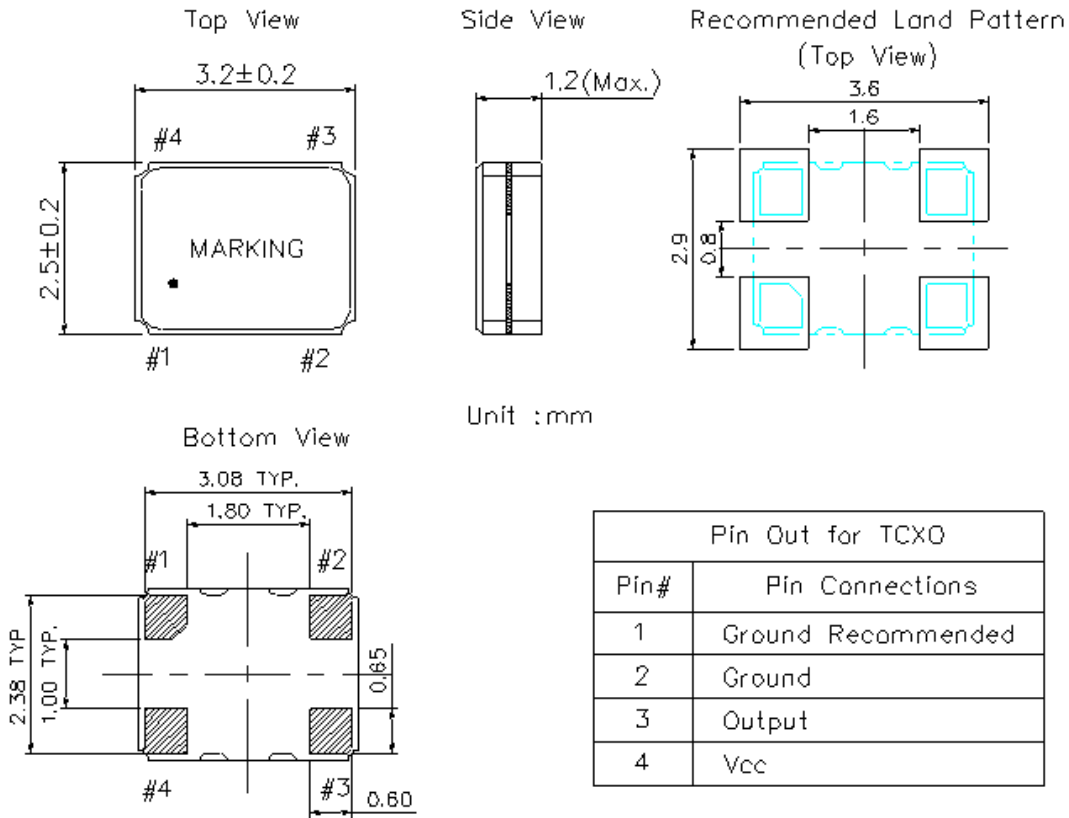
Description and Applications:

Surface mount 3.2mmx2.5mm TCXO for use in wireless communications devices

Electrical Specifications:

| TX0283D | Specifications |
|---|-------------------------------|
| Nominal Frequency, Fo | 24.000000 MHz |
| Storage Temperature Range | -40°C to +85°C |
| Operating Temperature Range | -20°C to +85°C |
| Power Supply Voltage, Vcc | 3.3 V +/- 5% |
| Output Voltage with Load 10pF//10KΩ, Vout | 1.2 Vp-p min |
| Output Waveform | Clipped Sinewave |
| Power Supply Current, Icc | 2.0 mA max |
| Frequency Tolerance after reflow | +/-2.0 ppm max @ 25°C +/- 3°C |
| Frequency Stability | |
| a. Vs. Temperature (-20~85°C) | +/- 3.0 ppm reference to 25°C |
| b. Vs. Load varied 10pF//10KΩ+/-10% | +/- 0.2 ppm |
| c. Vs. Supply Voltage varied 3.3V+/-5% | +/- 0.2 ppm |
| Start Up Time (90% of final RF level in Vp-p) | 2.0 msec max. |
| Aging | +/-1.0 ppm/year @25°C |
| Harmonics | -5.0 dBc max |
| SSB Phase Noise (@1KHz Carrier Offset) | -130 dBc/Hz max |

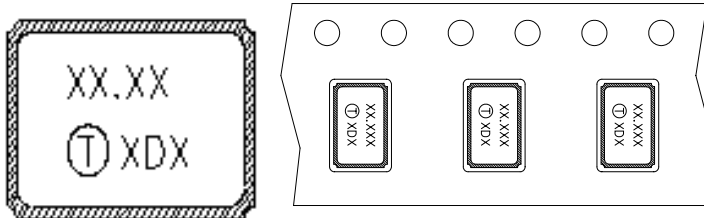
Mechanical Dimensions (mm):



Marking:

Line 1: Customer Frequency (24.00)

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



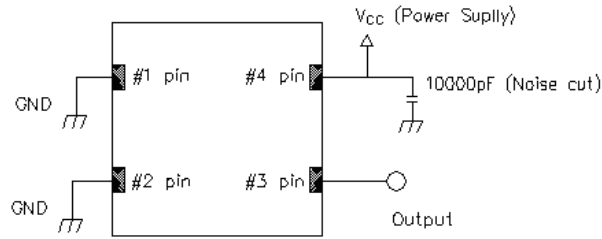
Product Code Table

| Year | 2005 2009 | 2006 2010 | 2007 2011 | 2008 2012 |
|--------------|--------------|--------------|--------------|--------------|
| Product Code | X | x | <u>X</u> | <u>x</u> |

Date Code Table

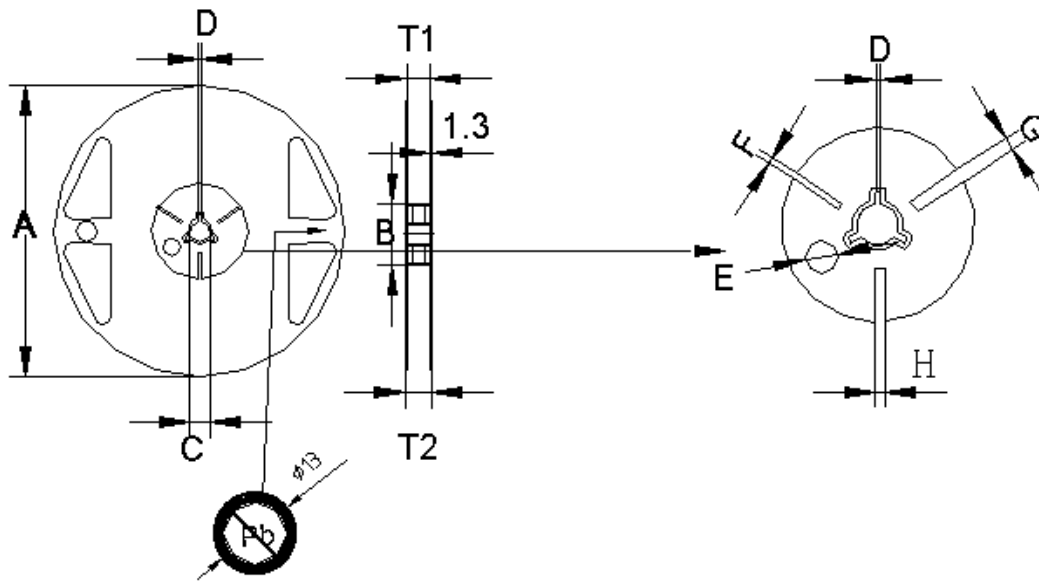
| | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| WK01 | WK02 | WK03 | WK04 | WK05 | WK06 | WK07 | WK08 | WK09 | WK10 | WK11 | WK12 | WK13 |
| A | B | C | D | E | F | G | H | I | J | K | L | M |
| WK14 | WK15 | WK16 | WK17 | WK18 | 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 |

Recommended Circuit



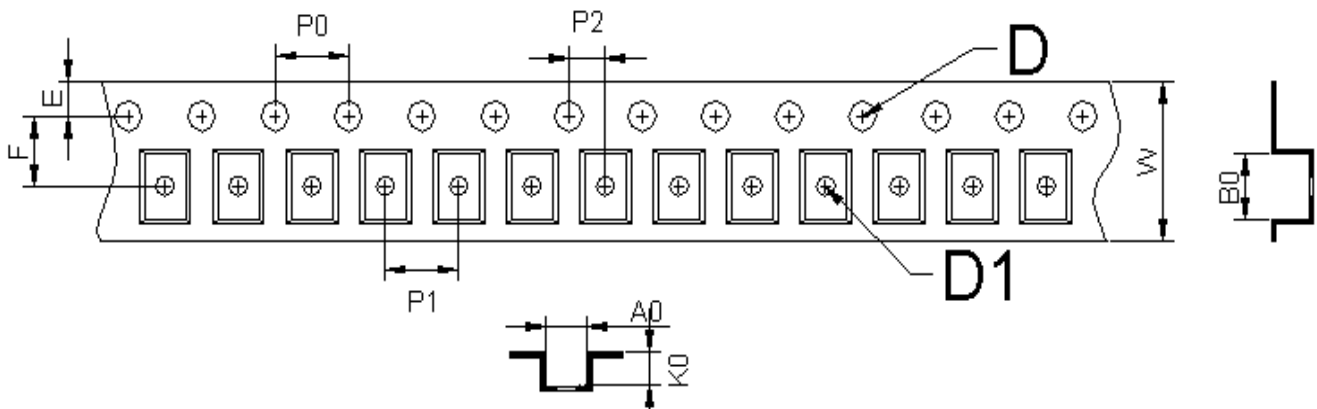
Packing (mm):

1. Reel Dimension



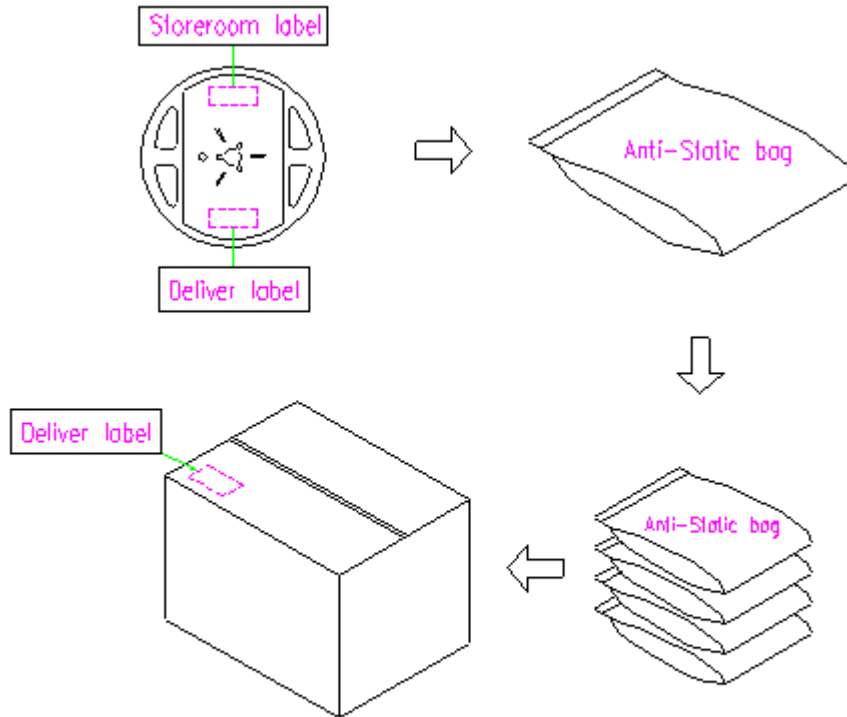
| | A | B | C | D | E | F | H | G | T ₂ | T ₁ | T ₃ |
|------------|------|------|------|------|------|------|------|------|----------------|----------------|----------------|
| Dimensions | 180 | 60 | 13.0 | 2.0 | 9.1 | 2.9 | 3.9 | 4.9 | 11.4 | 9.0 | 1.2 |
| Tolerance | ±1.0 | +1.0 | ±0.2 | ±0.5 | ±0.5 | ±0.5 | ±0.5 | ±0.5 | ±1.0 | ±0.3 | ±0.1 |

2. Tape Dimension

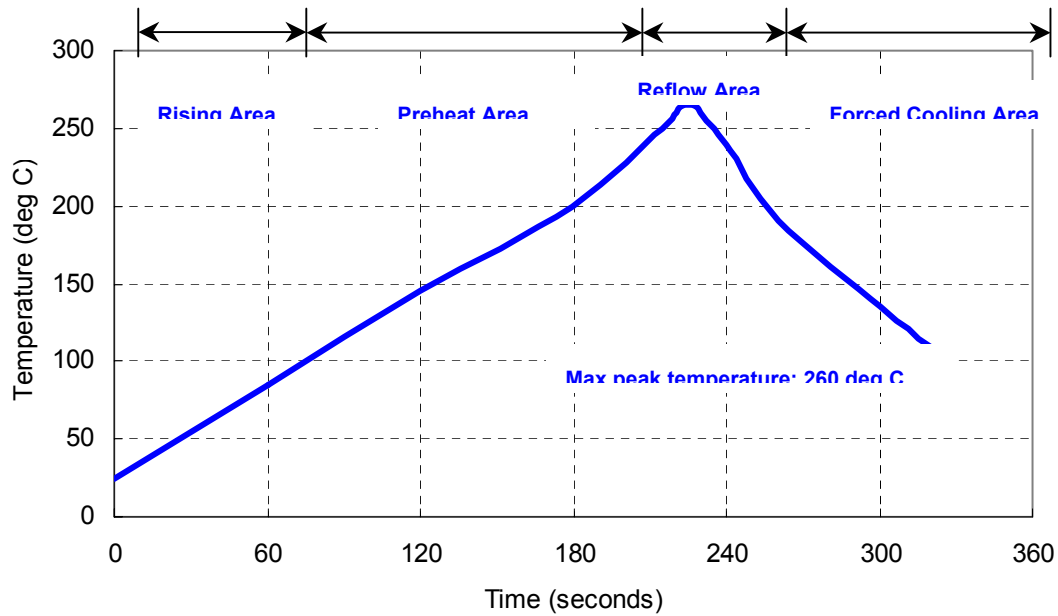


| Unit: mm | A ₀ | B ₀ | W | F | E | P ₀ | P ₁ | P ₂ | D ₁ | D | K ₀ | t |
|-----------|----------------|----------------|-----------|-------|------|----------------|----------------|----------------|----------------|-------------|----------------|-------|
| Dimension | 2.80 | 3.71 | 8.00 | 3.5 | 1.75 | 4.00 | 4.00 | 2 | 1.50 | 1.0 | 1.75 | 0.25 |
| Tolerance | ±0.1 | ±0.1 | +0.3/-0.1 | ±0.05 | ±0.1 | ±0.1 | ±0.1 | ±0.05 | +0.1/-0.00 | +0.25/-0.00 | ±0.1 | ±0.02 |

Packing Quantity/Packing:



Reflow Profile:



Notes of the Usage:

1. Touch the solder iron at 260 ± 5 deg C onto the leads for 10 ± 2 sec max or touch the solder at 350 ± 5 deg C onto the leads for 3 ± 0.5 sec.
2. In the customer's reflow process, if it will remain some mechanical stress at the soldering terminals, also make some cracks on the soldering termination. Some cracks will cause open or short circuit and cause of thermal increasing or smoking. Don't make any excess mechanical stress to soldering points.
3. In case of giving a heavy shock to the products, it may make an open or short circuit and cause of thermal increasing and smoking. To avoid heavy shock impact applying to products is strictly required.

Notes of the Storage:

1. To keep products under the condition at the room temperature ($-5\sim 35$ deg C) with normal humidity (45~75%). Absorption of moisture and dewdrop may make inferiority of characteristics and a short circuit.
2. Oxidization of terminals shall make the solderability more inferior. Dusts and corrosive gas will make a cause of the open or short circuit. Keep it in the clean place where is not in dusty and no corrosive gas.
3. Use the anti-static material to the storage package.
4. Don't put any excess weight to the TCXO in the storage process.
5. Don't move the product from the cold place to the hot place in the short time, otherwise it may make some dew-drop, then a short circuit may happen in case.
6. Storage periods should be maximum 6 months under condition of above item 1 after delivery from TST factory.
7. Once open the bag, there is possibility of electrical characteristics deterioration due to absorption of moisture. So, please use parts within 7 days after opening the bag.
8. If you have to keep parts without using after opening the bag, please put the drying agent in the bag, fold the bag and keep it in the place where temperature and humidity are controlled (nitrogen atmosphere box etc.)