



SPECIFICATION FOR APPROVAL

CUSTOMER : _____

PRODUCT TYPE : SMD SEAM SEALING CXO 3.2*2.5

NOMINAL FREQ. : 32.768KHz

TXC P/N : 7XZ3200002

REVISION : A1

CUSTOMER P/N : _____

PM / SALES : _____

DATE : _____

CUSTOMER SIGNATURE & Date _____

- (1) TXC requires one copy returned with signature and title of authorized individual that signifies acceptance of the attached specifications.
- (2) Orders received and accepted by TXC after return of signed copy of specification will be produced per these specifications.
- (3) Any changes to these specifications must be agreed upon by both parties and new revision of the Product Specification Sheet will be issued.
- (4) Any issuance of purchase order prior to consigning back the Approval page of "Specification Sheets" from customers will be regarded as the agreement on the contents of these specifications.

Attachment: Product Specification Sheet

- 1
- 2
- 3
- 4
- 5

RoHS Compliant




PRODUCT SPECIFICATION SHEET

PRODUCT TYPE : SMD SEAM SEALING CXO 3.2*2.5

NOMINAL FREQ. : 32.768KHz

TXC P/N : 7XZ3200002

REVISION : A1

| PE/RD | QA | MFG |
|---|---|--|
|  |  |  |
| 7-Oct-08 | 16-Oct-08 | 8-Oct-08 |

NOTE:

- (1)Lead Free Products are "Directive 2002/95/EC of The European Parliament of 27 January 2003 on the restriction of the use of certain hazardous substances (RoHS) in electrical and electronic equipment" Compliant (Attachment: SGS Test Report).
- (2)Revision "Sx" is for engineering samples only. PE/RD's approval required.
- (3)Revision "Ax" is production ready. PE, QA and MFG's approval required.

RoHS Compliant

**ELECTRICAL SPECIFICATIONS****Standard atmospheric conditions**

Unless otherwise specified, the standard range of atmospheric conditions for making measurement and tests are as follow:

Ambient temperature : 25±5
Relative humidity : 40%~70%

If there is any doubt about the results, measurement shall be made within the following limits:

Ambient temperature : 25±3
Relative humidity : 40%~70%

Measure equipment

Electrical characteristics measured by MD 37WX-05M or equivalent.

Crystal cutting type

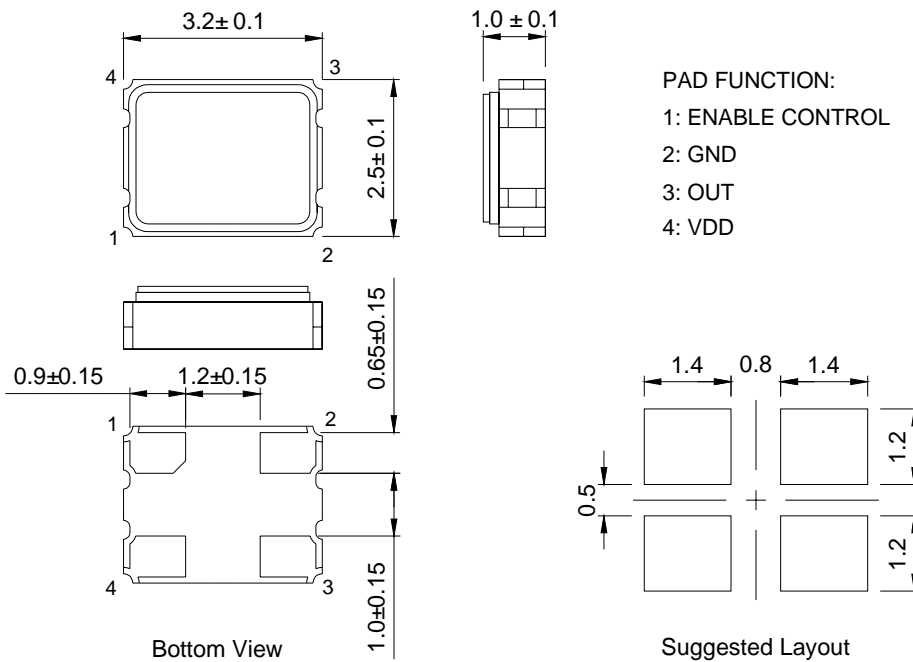
The crystal is using AT CUT (thickness shear mode).

Unit Weight:

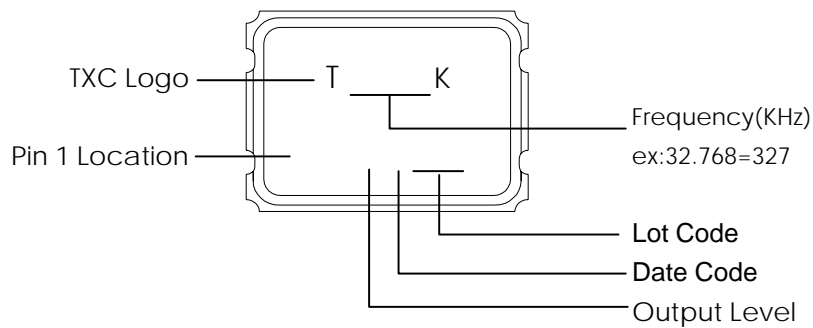
0.025±0.002 g/pcs

| | Parameters | SYM. | Electrical Spec. | | | | Notes |
|----|-----------------------|-----------------|--------------------|------|--------------------|---------|-----------------------|
| | | | MIN | TYPE | MAX | UNITS | |
| 1 | Nominal Frequency | - | 32.768 | | | KHz | - |
| 2 | Frequency Stability | - | ±25 | | | ppm | @ 3.3V from -10 to+85 |
| 3 | Operating Temperature | Topr | -10 | 25 | 85 | | - |
| 4 | Storage Temperature | Tstg | -55 | ~ | 125 | | - |
| 5 | Supply Voltage | VDD | 2.97 | 3.3 | 3.63 | V | - |
| 6 | Current Consummption | Icc | - | - | 4 | mA | - |
| 7 | Enable Control | - | Yes | | | - | Pad 1 |
| 8 | Output Load : CMOS | CL | 15 | | | pF | - |
| 9 | Output Voltage High | VoH | Vdd-0.4 | - | - | V | - |
| 10 | Output Voltage Low | VoL | - | - | 0.33 | V | - |
| 11 | Rise Time | Tr | - | - | 10 | ns | 10% 90%VDD Level |
| 12 | Fall Time | Tf | - | - | 10 | ns | 90% 10%VDD Level |
| 13 | Symmetry (Duty ratio) | TH/T | 40 | ~ | 60 | % | - |
| 14 | Enable Voltage High | V _{IH} | 0.7V _{DD} | - | - | V | - |
| 15 | Disable Voltage Low | V _{IL} | - | - | 0.3V _{DD} | V | - |
| 16 | Aging | - | ±3 | | | ppm/yr. | 1st. Year at 25 |

DIMENSIONS



MARKING



Output Level:

| | | | | | | | | | | |
|------|------|------|------|------|------|------|------|-------|------|-------|
| VDD | 5.0V | 3.3V | 2.8V | 2.5V | 1.8V | 2.9V | 3.0V | 2.85V | 2.6V | 2.55V |
| CODE | A | B | C | D | E | F | G | H | J | K |

Date Code:

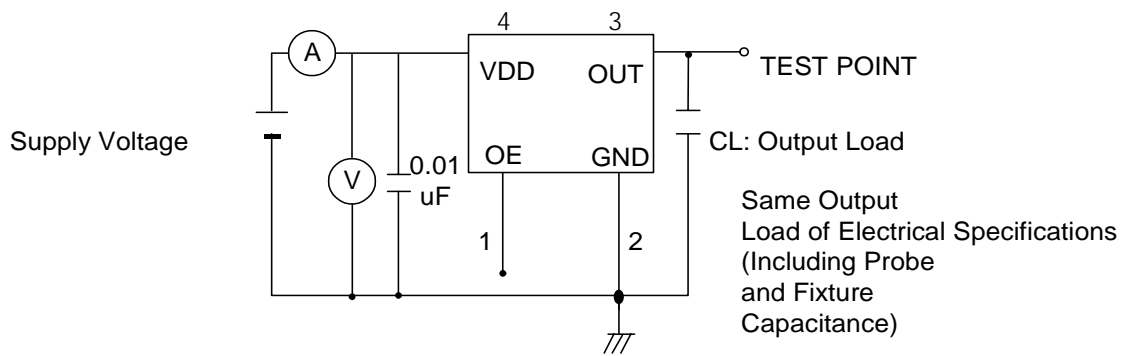
| YEAR | | | | MONTH | | | | | | | | | | | |
|------|------|------|------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
| 2005 | 2009 | 2013 | 2017 | A | B | C | D | E | F | G | H | J | K | L | M |
| 2006 | 2010 | 2014 | 2018 | N | P | Q | R | S | T | U | V | W | X | Y | Z |
| 2007 | 2011 | 2015 | 2019 | a | b | c | d | e | f | g | h | j | k | l | m |
| 2008 | 2012 | 2016 | 2020 | n | p | q | r | s | t | u | v | w | x | y | z |

*This date code will be cycled every four years

Production location: Taiwan

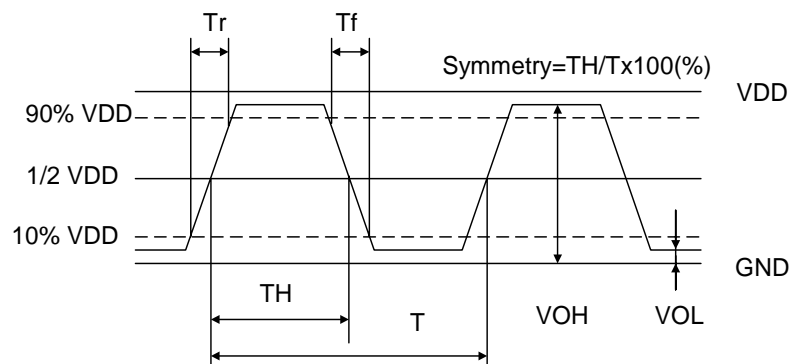
TEST DIAGRAM

- Control input (output enable/disable)
- Logic 1 or open on pad 1: Oscillator output
- Logic 0 on pad 1 : Disable output to high impedance



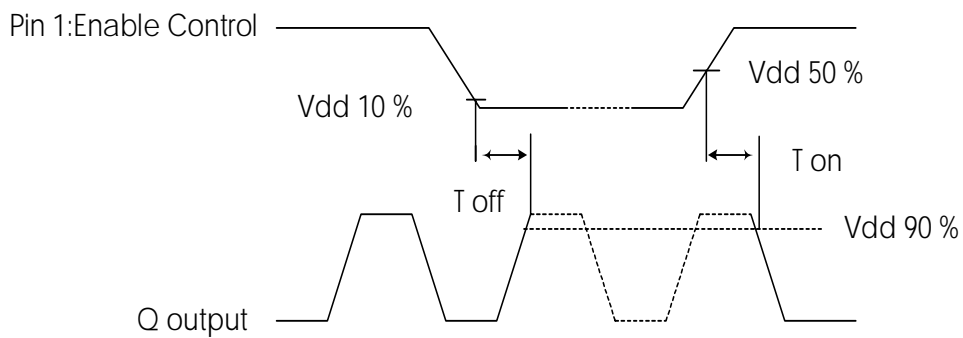
WAVEFORM CONDITIONS

Waveform measurement system should have a min. bandwidth of 5 times the frequency being tested.



OUTPUT ENABLE / DISABLE DELAY

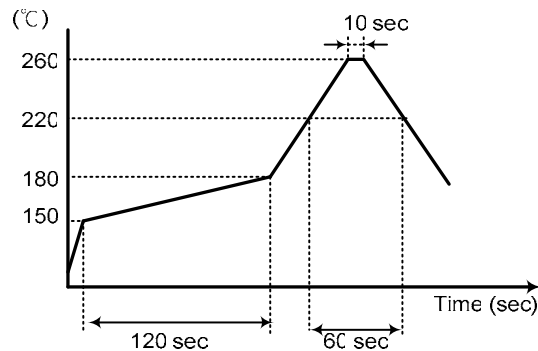
The following figure shows the oscillator timing during normal operation . Note that when the device is in standby, the oscillator stops. When standby is released, the oscillator starts and stable oscillator output occurs after a short delay.



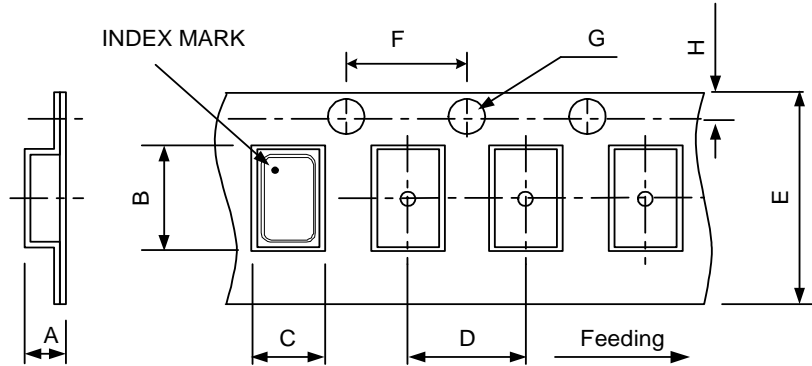
SUGGESTED REFLOW PROFILE

Total time : 200 sec. Max.

Solder melting point :220

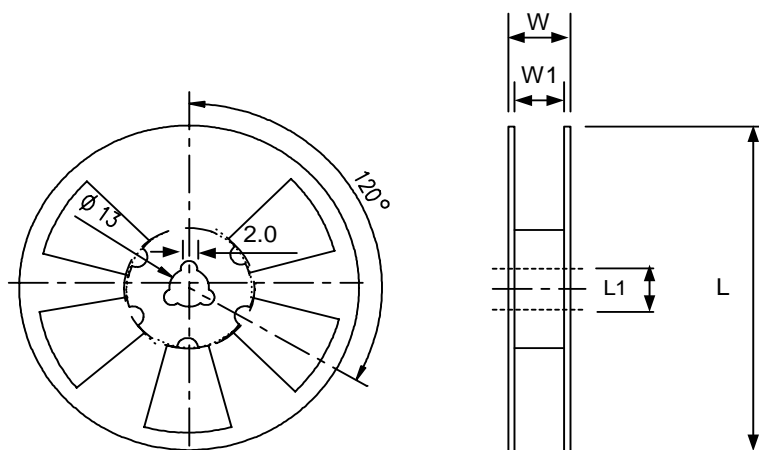
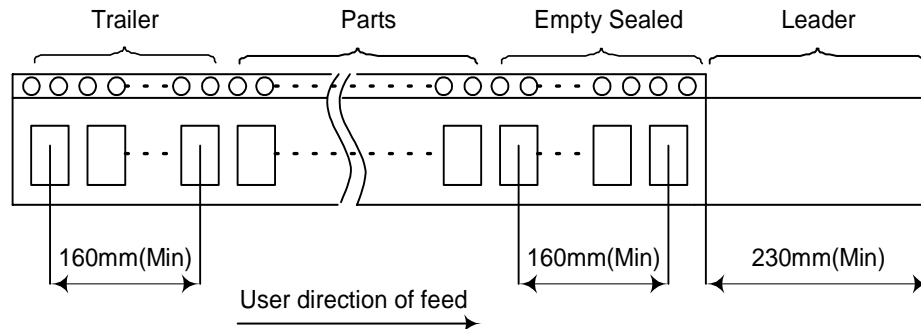


PACKING



| | | | | | | | | | |
|------------|------|------|------|------|------|------|------|------|-------------|
| DIMENSIONS | A | B | C | D | E | F | G | H | (UNIT : mm) |
| | 1.40 | 3.40 | 2.70 | 4.00 | 8.00 | 4.00 | 1.55 | 1.75 | |

REMARK :



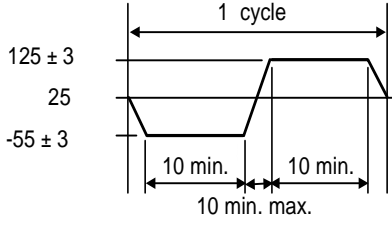
| | | | | | |
|------------|-----|----|------|----|--|
| DIMENSIONS | L | L1 | W | W1 | pcs / Reel (UNIT : mm) |
| | 178 | 13 | 11.5 | 8 | Standard Reel Quantity is 3,000 pcs per reel |

RELIABILITY SPECIFICATIONS

1.Mechanical Endurance

| No. | Test Item | Test Methods | REF. DOC |
|-----|------------------|--|--------------|
| 1.1 | Drop Test | 75 cm height,3 times on concrete floor . | JIS C6701 |
| 1.2 | Mechanical Shock | Device are shocked to half sine wave (1000 G) three mutually perpendicular axes each 3 times. 0.5m sec. duration time | MIL-STD-202F |
| 1.3 | Vibration | Frequency range 10 ~ 2000 Hz Amplitude 1.52 mm/20G Sweep time 20 minute perpendicular axes each test time 4 hours (Total test time 12 hours) | MIL-STD-883E |
| 1.4 | Gross Leak | Standard Sample For Automatic Gross Leak Detector, Test Pressure: 2Kg / cm ² | MIL-STD-883E |
| 1.5 | Fine Leak | Helium Bomging 4.5 Kgf / cm ² for 2 hr | |
| 1.6 | Solderability | Temperature 245 ± 5 Immersing depth 0.5 mm minimum Immersion time 5 ± 1 seconds Flux Rosin resin methyl alcohol solvent (1 : 4) | MIL-STD-883E |

2.Environmental Endurance

| No. | Test Item | Test Methods | REF. DOC |
|-----|------------------------------|---|--------------|
| 2.1 | Resistance To Soldering Heat | Pre-heat temperature 125 Pre-heat time 60 ~ 120 sec. Test temperature 260 ± 5 Test time 10 ± 1 sec. | MIL-STD-202F |
| 2.2 | High Temp. Storage | + 125 ± 3 for 1000 ± 12 hours | MIL-STD-883E |
| 2.3 | Low Temp. Storage | - 40 ± 3 for 1000 ± 12 hours | |
| 2.4 | Thermal Shock | Total 100 cycles of the following temperature cycle  | MIL-STD-883E |
| 2.5 | High Temp & Humidity | 85 ± 3 , RH 85% , 1000Hrs | JIS C5023 |
| 2.6 | Pressure Cooker Storage | 121 ± 3 , RH100% , 2 bar , 240Hrs | JIS C6701 |