

SPECIFICATION FOR APPROVAL

CUSTOMER : _____

PRODUCT TYPE : SMD SEAM SEALING X'TAL 3.2×2.5

NOMINAL FREQ. : 37.400000MHz

TXC P/N : 7M37400001

REVISION : S1

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



TXC CORPORATION

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PRODUCT SPECIFICATION SHEET

PRODUCT TYPE : SMD SEAM SEALING X'TAL 3.2×2.5

NOMINAL FREQ. : 37.400000MHz

TXC P/N : 7M37400001

REVISION : S1

| PE/RD | QA | MFG |
|---|----|-----|
|  | | |
| 4-Jun-10 | | |

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 HP E5100A or equivalent.

Crystal cutting type

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

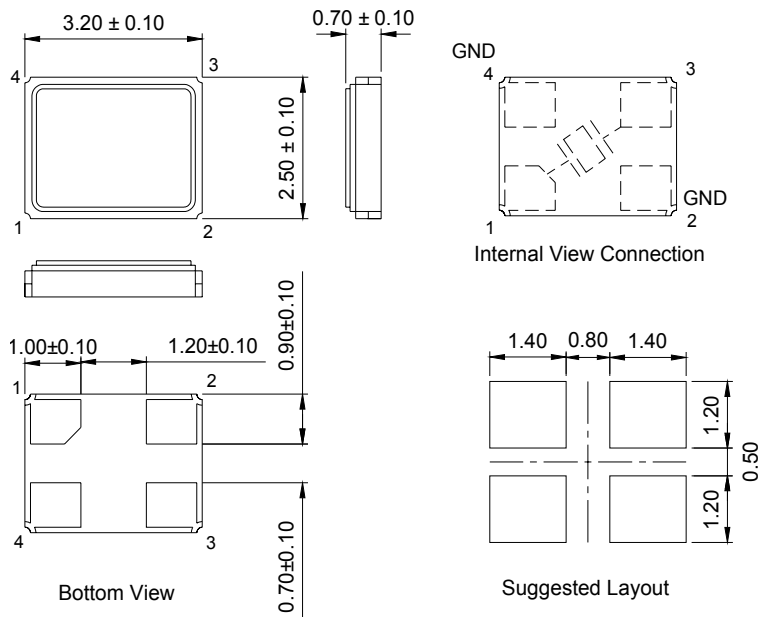
Unit Weight:

0.018±0.001 g/pcs

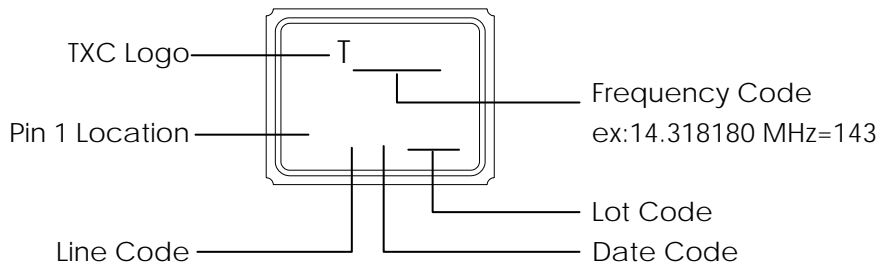
| | Parameters | Symbol | Electrical Spec. | | | | Notes |
|----|------------------------------|--------|------------------|------|------|-------|--|
| | | | Min. | Typ. | Max. | Units | |
| 1 | Nominal Frequency | FL | 37.400000 | | | MHz | - |
| 2 | Oscillation Mode | - | Fundamental | | | - | - |
| 3 | Load Capacitance | CL | 12 | | | pF | - |
| 4 | Frequency Tolerance | - | ±10 | | | ppm | at 25 ± 3 |
| 5 | Frequency Stability | - | ±10 | | | ppm | Over Operating Temp. Range (Reference 25) |
| 6 | Operating Temperature | - | -20 | ~ | 85 | | - |
| 7 | Aging | - | ±3 | | | ppm | 1st Year |
| 8 | Drive Level | DL | - | 100 | - | uW | - |
| 9 | Equivalent Series Resistance | ESR | - | - | 50 | Ω | - |
| 10 | Insulation Resistance | - | 500 | - | - | MΩ | at DC 100V |
| 11 | Storage Temperature Range | - | -40 | ~ | 85 | | - |

DIMENSIONS

(Unit:mm)



MARKING



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 |

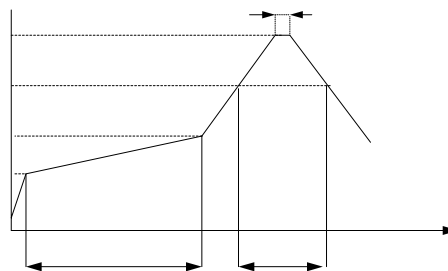
*This date code will be cycled every four years

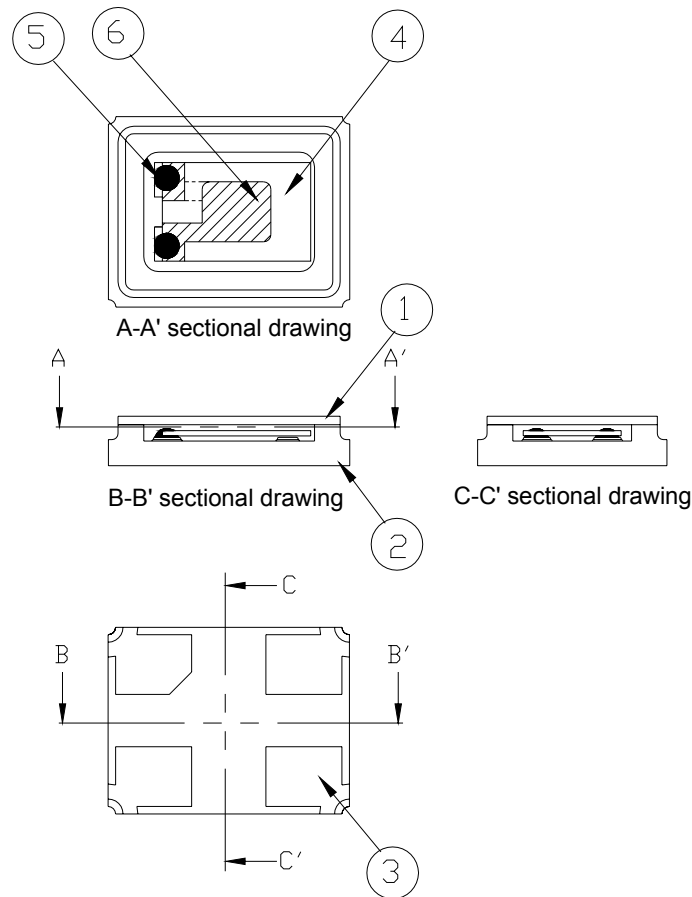
Production location: Taiwan

SUGGESTED REFLOW PROFILE

Total time : 200 sec. Max.

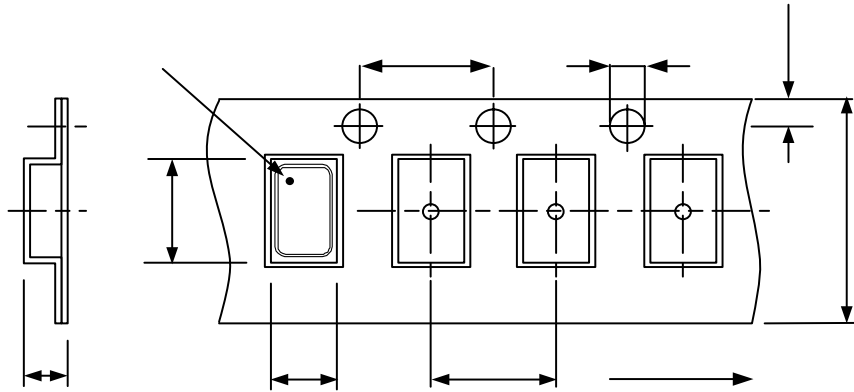
Solder melting point :220



STRUCTURE ILLUSTRATION


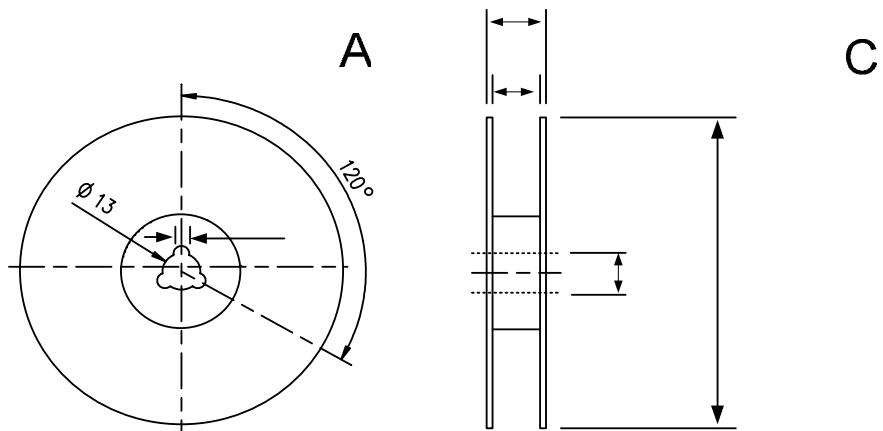
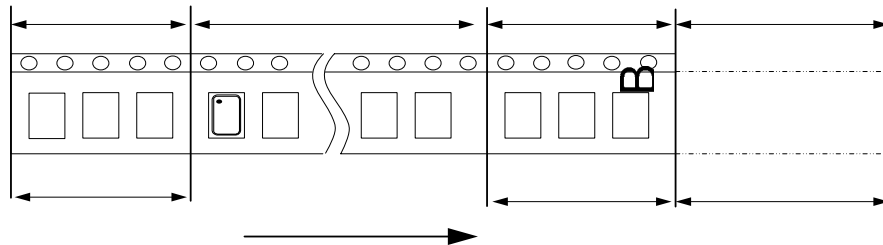
| NO | COMPONENTS | MATERIALS | FINISH/SPECIFICATIONS |
|----|---------------------|---|---|
| 1 | Lid | Kovar (Fe/Co/Ni) | - |
| 2 | Base(Package) | Ceramic (Al ₂ O ₃) + Kovar (Fe/Co/Ni)+ Ag/Cu | Color black |
| 3 | PAD | Au | Tungsten metalize + Ni plating + Au plating |
| 4 | Crystal blank | SiO ₂ | - |
| 5 | Conductive adhesive | Ag | Silicon resin |
| 6 | Electrode | Noble Metal | - |

PACKING



| | | | | | | | | |
|------------|------|-----|-----|---|---|---|-------------------|------------------|
| DIMENSIONS | A | B | C | D | E | F | INDEX MARK | |
| | 1.65 | 3.4 | 2.7 | 4 | 8 | 4 | 1.55 | 1.75 (UNIT : mm) |

REMARK :



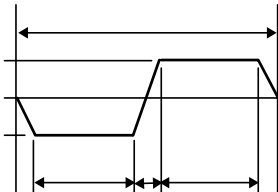
| | | | | | |
|------------|-----|----|------|----|--|
| DIMENSIONS | L | L1 | W | W1 | pcs / Reel (UNIT : mm) |
| | 178 | 13 | 11.5 | 8 | Standard Reel Quantity is 3,000 pcs per reel |

RELIABILITY SPECIFICATIONS

1. Mechanical Endurance

| No. | Test Item | Test Methods | REF.DOC |
|-----|------------------|--|-------------|
| 1.1 | Drop Test | 150 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-202 |
| 1.3 | Vibration | Frequency range 10 ~ 2000 Hz Amplitude 1.52 mm/20G Sweep time 20 minutes Perpendicular axes each test time 4 Hrs (Total test time 12 Hrs) | MIL-STD-883 |
| 1.4 | Gross Leak | Standard Sample For Automatic Gross Leak Detector, Test Pressure: 2kg / cm ² | MIL-STD-883 |
| 1.5 | Fine Leak | Helium Bombing 4.5 kg/ cm ² for 2 Hrs | |
| 1.6 | Solder ability | Temperature 245 ± 5 Immersing depth 0.5 mm minimum Immersion time 5 ± 1 seconds Flux Rosin resin methyl alcohol solvent (1 : 4) | MIL-STD-883 |

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-202 |
| 2.2 | High Temp. Storage | + 125 ± 3 for 500 ± 12 Hrs | MIL-STD-883 |
| 2.3 | Low Temp. Storage | - 40 ± 3 for 500 ± 12 Hrs | |
| 2.4 | Thermal Shock | Total 100 cycles of the following temperature cycle  | MIL-STD-883 |
| 2.5 | High Temp & Humidity | 85 ± 3 , RH 85% , 500 Hrs | JIS C5023 |
| 2.6 | Pressure Cooker Storage | 121 ± 3 , RH100% , 2 bar , 240 Hrs | JIS C6701 |