## Features

- Ultra Stable
- Wide Temperature Range
- SMD Package (7.0×5.0mm)
- Provide Stratum Ⅲ Level Frequency Stability

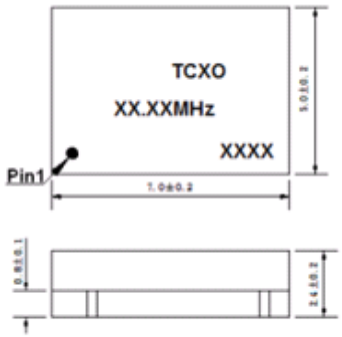
## Applications

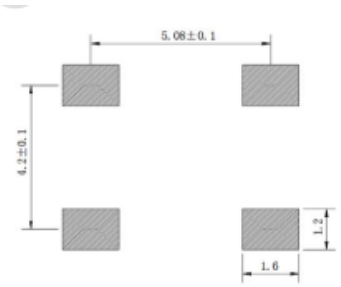
- Base Stations
- Instrumentations
- Synthesizer
- SDH/SONET
- Medical Electronics

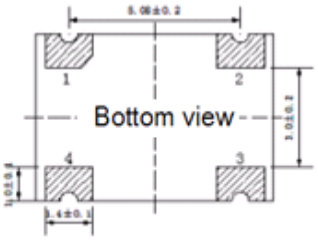
## BT0507D_H Specifications

| Parameter | | Value | | | Unit | Conditions | |
|---|---|---|---|---|---|---|---|
| | | Min. | Typ. | Max. | | | |
| Supply Voltage | | – | 3.3 | – | V | | |
| | | – | 5 | – | V | | |
| Supply Current | | - | – | 15 | mA | | |
| Frequency Range | | 1.2~ 200 | | | MHz | | |
| Nominal Frequency | | 10, 12.8, 13, 15.36, 16, 16.32, 16.384, 19.2, 19.44, 20, 24.576, 25, 26, 30.72, 38.4, 38.88, 40, 50 | | | MHz | | |
| Initial Frequency Tolerance | | - | – | ±1.0 | ppm | At shipment, nominal EFC, +25℃ | |
| Freq. Stability Vs. Temp. | | ±0.28 | – | ±2 | ppm | -40℃～+85℃ | |
| CMOS | $V_{OH}$ | 2.4 | – | – | V | CMOS Output, Load=15pf | |
| | $V_{OL}$ | – | – | 0.4 | V | CMOS Output, Load=15pf | |
| | Duty Cycle | 45 | – | 55 | % | ( $V_{OH}$ - $V_{OL}$)/2 | |
| | Rise/Fall Edge | – | – | 6 | ns | CMOS Output, Load=15pf | |
| | Load | – | – | 10 | pf | | |
| Clipped Sine Wave | Output Level | 0.8 | – | – | Vp-p | | |
| | Load | 10KΩ//10pF | | | | | |
| Output Sine Wave | Output Level | 0 | – | – | dBm | | |
| | Harmonics | – | – | -30 | dBc | | |
| | Spurious | – | – | -70 | dBc | | |
| | Load | – | 50 | – | Ω | 90%~10% Vdd | |
| Supply Sensitivity | | – | – | ±0.2 | ppm | Vcc±5% | |
| Load Sensitivity | | – | – | ±0.2 | | Load±10% | |
| Aging/ First Year | | – | – | ±1.0 | | Standard | |
| | | - | – | ±1.0 | | Customized | |
| SSB Phase Noise @10MHz | | – | – | -95 | dBc/Hz | Offset 10Hz | At +25℃ |
| | | – | – | -120 | | Offset 100Hz | |
| | | – | – | -138 | | Offset 1kHz | |
| | | – | – | -145 | | Offset 10kHz | |
| | | – | – | -150 | | Offset 100kHz | |
| Control Voltage Range | | 1.65± 1.65 | | | V | Vs=3.3Vdc | |
| | | 2.5 ± 2.5 | | | V | Vs=5.0Vdc | |
| Frequency Turning Range | | ±8 | – | - | ppm | | |
| Tuning Slope | | positive | | | | | |
| Non-linearity | | – | – | 10 | % | | |

## Outline Dimension & Pin Connections




**Pin Connection**

| | |
|---|---|
| Pin 1 | Vcon,Control Voltage |
| Pin 2 | Gnd,Ground |
| Pin 3 | Fo,Output |
| Pin 4 | Vdd,Supply voltage |

**Note:**

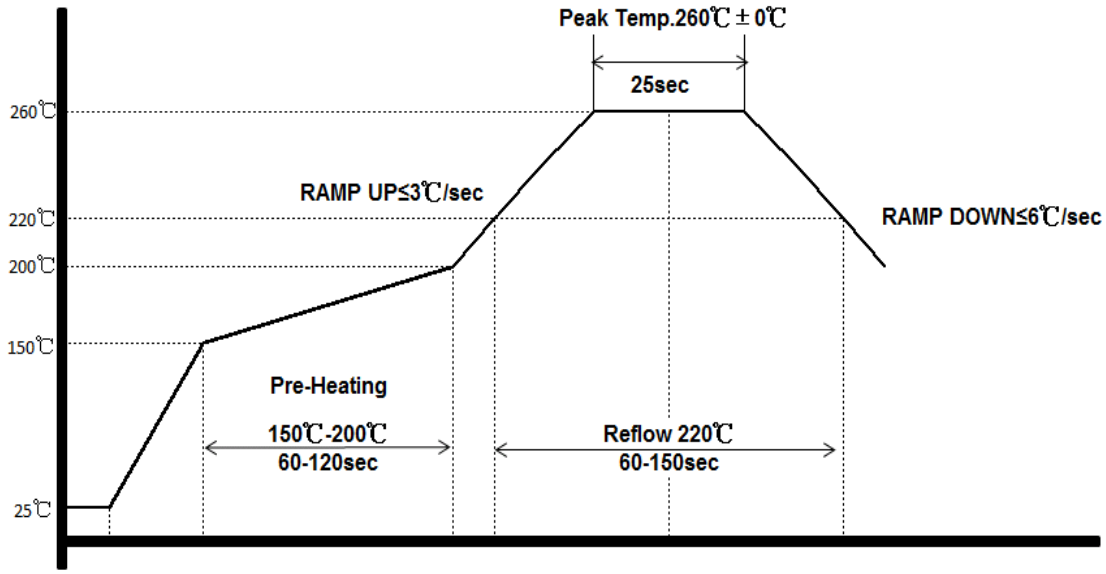
1. The pins with '*' are for factory test.
2. Leave pin 1 unconnected If Vcon is not used.

| Environmental Conditions | |
|---|---|
| Operating Temperature Range | -55℃～+95℃ |
| Storage Temperature Range | -55℃ ~ +125℃ |

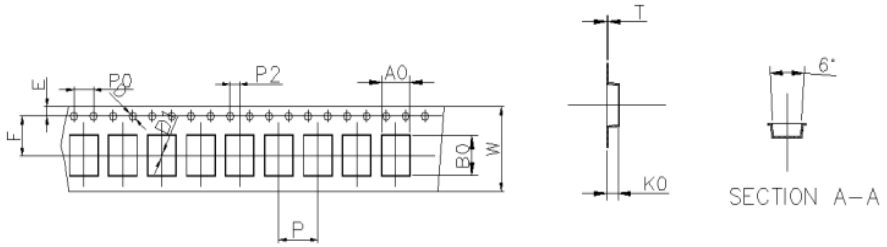
| Maximum Ratings | | |
|---|---|---|
| **Parameter** | **Symbol** | **Rating** |
| Supply Voltage | Vdd | -0.5V / 6V |
| Control Voltage | Vcon | 0V / 3V |
| ESD, HBM/CDM/MM | | 4KV/ 2KV/ 200V |

| Reliability | |
|---|---|
| **Parameter** | **Condition** |
| Temperature Stress Test | IEC60068, GJB360B |
| Mechanical Stress Test | IEC60068, GJB360B |
| EMC Test (ESD) | IEC61000, JESD22 |
| Solderability | EIA/JESD22-B102-C |
| Contact Pads | Gold over Nickel |
| RoHS | RoHS Directive 2011/65/EU Annex II Recasting 2002/95/EC |

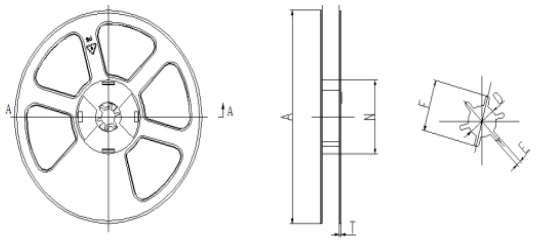
## IR Reflow Profile



## Tape & Reel




| ITEM | W | A0 | B0 | K0 | P | F | E | D | P0 | P2 | t | 7" | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DIM | 16.0 | 5.7 | 7.6 | 2.4 | 8 | 7.5 | 1.75 | 1.50 | 4.00 | 2.00 | 0.30 | L/R | QTY/PCS |
| TOLE | +0.30 −0.30 | +0.15 −0.15 | +0.15 −0.15 | +0.15 −0.15 | +0.10 −0.10 | +0.10 −0.10 | +0.10 −0.10 | +0.10 −0.00 | +0.10 −0.10 | +0.10 −0.10 | +0.05 −0.05 | 5M/R | 500 PCS |




| Item | W | A | N | T | E | F | D |
|---|---|---|---|---|---|---|---|
| Size | 16.4 | 178 | 62 | 1.8 | 2 | 21.8 | 13.5 |
| TOL | ±0.3 | ±0.5 | ±0.4 | ±0.2 | ±0.5 | ±0.8 | ±0.3 |

## Ordering Guide

**BT 0507 X X X X XXX X X XX.XX**

- Product: TCXO
- Outline: 7.0mm x 5.0mm
- Package: D: Pakcage D
- Output: H: LVCMOS; C: Clipped Sine Wave
- Supply Voltage: 3: 3.3 Vdc; 5: 5.0 Vdc
- Temp. Range: C: -20℃ ~ +70℃; I: -40℃ ~ +85℃; M: -50℃ ~ +90℃; U: -55℃ ~ +95℃; F: Customized
- Frequency: xx MHz
- Tuning Range: N:No Tuning; A: ±5ppm; B: ±7ppm; C: ±12ppm
- Phase Noise: A: -120dBc/Hz@1kHz; B: -125dBc/Hz@1kHz; C: -130dBc/Hz@1kHz; D: -135dBc/Hz@1kHz; E: -140dBc/Hz@1kHz; G: -145dBc/Hz@1kHz
- Temp. Stability: 306: ±3.0ppm; 206: ±2.0ppm; 106: ±1.0ppm; 507: ±0.5ppm; 287: ±0.28ppm

**Example:** BT0507DH3C287DN20

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