

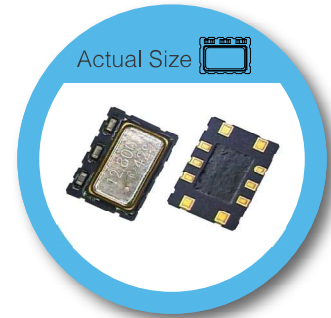
# TS Type < for Stratum 3 > 7.0 x 5.0 mm SMD Stratum 3 Voltage Controlled Temperature Compensated Crystal Oscillator

## FEATURE

- Typical 7.0 x 5.0 x 1.9 mm ceramic SMD package.
- Stratum 3 (Overall  $\pm 4.6$ ppm including 20 years aging.)
- CMOS and Clipped Sine wave (without DC-cut capacitor) output optional.

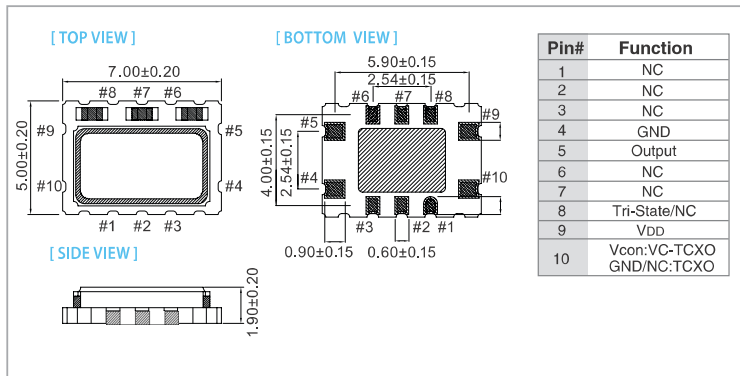
## TYPICAL APPLICATION

- Base Stations
- Stratum 3

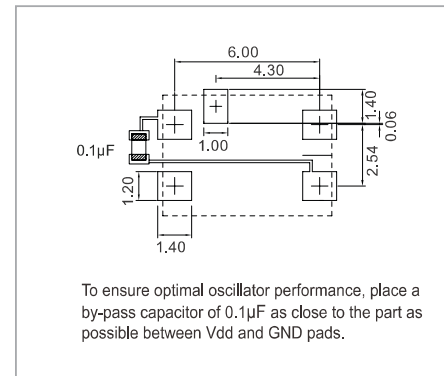


RoHS Compliant

## DIMENSION (mm)



## SOLDER PAD LAYOUT (mm)



## ELECTRICAL SPECIFICATION

| Parameter                                  | 5.0 V  |            | 3.3V      |            | Unit     |
|--|--|------------|-----------|------------|----------|
|  | Min.   | Max.       | Min.      | Max.       |          |
| Supply Voltage Variation (VDD)             | VDD-5%   | VDD+5%     | VDD-5%    | VDD+5%     | V        |
| Frequency Range                            | 5  | 52         | 5         | 52         | MHz      |
| Standard Frequency (for CMOS)              | 8.192, 10, 12.8, 20                              |            |           |            |          |
| Standard Frequency (for Clipped sine Wave) | 8.192, 10, 12.8, 16.384, 19.2, 19.44, 20, 25, 26 |            |           |            |          |
| Operating Temp. Range                      | -20 ~ 70<br>-40 ~ 85                             |            |           |            | °C       |
| Frequency Stability (Overall, 20 Years)*   | -  | $\pm 4.6$  | -         | $\pm 4.6$  | ppm      |
| Frequency Stability Vs Temp. Range         | -  | $\pm 0.28$ | -         | $\pm 0.28$ | ppm      |
| Holdover Stability +                       | -  | $\pm 0.37$ | -         | $\pm 0.37$ | ppm      |
| Supply Current (CMOS output)               | -  | 6.0        | -         | 6.0        | mA       |
| Supply Current (Clipped Sine Wave)         | -  | 3.5        | -         | 3.5        |          |
| Output Level (CMOS)                        |  |            |           |            | V        |
| Output High (Logic"1")                     | 90%VDD   | -          | 90%VDD    | -          |          |
| Output Low (Logic"0")                      | -  | 10%VDD     | -         | 10%VDD     |          |
| Duty                                       | 45   | 55         | 45        | 55         | %        |
| Output Level (Clipped Sine Wave)           | 0.8  | -          | 0.8       | -          | Vp-p     |
| Load (CMOS)                                | 15pF   |            | 15pF      |            |          |
| Load (Clipped Sine Wave)                   | 10 KΩ // 10pF                                    |            |           |            |          |
| Control Voltage Range (VCTCXO)             | 0.5  | 2.5        | 0.5       | 2.5        | V        |
| Pulling Range (VCTCXO)                     | $\pm 5.0$  | -          | $\pm 5.0$ | -          | ppm      |
| Vc Input Impedance (VCTCXO)                | 100  | -          | 100       | -          | kΩ       |
| Phase Noise @ 10 MHz                       | 100 Hz   | -120       | -120      |            | dBc / Hz |
|  | 1 kHz  | -140       | -140      |            |          |
|  | 10 kHz   | -148       | -148      |            |          |
| Start Time                                 | -  | 2          | -         | 2          | mSec     |
| Tri-State                                  |  |            |           |            | V        |
| Disable                                    | -  | 1.5        | -         | 0.99       |          |
| Enable                                     | 3.5  | -          | 2.31      | -          |          |
| Storage Temp. Range                        | -55  | 125        | -55       | 125        | °C       |

Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position.

\* Including calibration @ 25°C, supply voltage VDD $\pm 5\%$ , load 15pF $\pm 5\%$ , reflow soldering, 20 years aging and frequency stability over temperature.

+ Including 24hours aging, supply voltage VDD $\pm 5\%$  and frequency stability over temperature.

**Note: not all combination of options are available. Other specifications may be available upon request.**

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# Model Numbering Guide – VCTCXO / TCXO

## Available options

| Type                                      | package (mm)   | Supply Voltage (V)                                     | Pulling Range (ppm)  | Freq. Stability (ppm)  | Temp. Range(°C)  | Output Logic And Symmetry   | Oscillator Mode                                     | Appearance | Lead Free         | Dash | Freq. (MHz) |
|---|--|--|--|--|--|---|---|------------|-------------------|------|-------------|
| T:<br>TCXO                                | Z: 2.0x1.6<br>Y: 2.5x2.0<br>X: 3.2x2.5<br>S: 7.0x5.0 (10Pads)<br>A: 7.0x5.0 (4Pads)<br>K: 14.3x8.4<br>F: 20.4x12.8 (Dip) | C: 5.0<br>E: 2.8/3.0/3.3<br>J: 2.5<br>K: 1.8 (TX / TY) | A: ± 5<br>B: ± 8<br>C: ± 10<br>T: TCXO<br><br>Vcon range: 0.5V to 2.5V | A: ±0.5<br>B: ±1.0<br>P: ±1.5<br>C: ±2.0<br>D: ±2.5<br><br>Q: ±0.05<br>M: ±0.1<br>J : ±0.14<br>R: ±0.2<br>K: ±0.28<br>L : ±0.37<br>T : ±4.6 (Including 20 Years Aging) | B: 0~+55<br>I : -10~+60<br>J: -10~+70<br>C: -20~+70<br>H: -30~+75<br>D: -30~+85<br>L : -40~+85 | A: TTL 15pF / 50±5%<br>J: CMOS 15pF / 50±5%<br>K: CMOS 15pF / 50±10%<br>S: Clipped sine wave 10KΩ//10pF | A: AT Fundamental<br><br>Not selectable by customer | N: Normal  | F: RoHs Compliant | -    | XX.XXXXXX   |
| T:<br>TCXO<br>(High Precision /Stratum 3) | W: 5.0x3.2<br>S: 7.0x5.0 (10Pads)<br>T: 7.0x5.0 (4Pads)  | C: 5.0<br>E: 3.3                                       |  |  |  |   |   |            |                   |      |             |

T X E C D D S A N F – 26.000000

\*Not all combinations of options are available.

### Example: TXECDDSANF-26.000000

|                   |                   |
|-------------------|-------------------|
| Type              | VCTCXO            |
| Package           | 3.2 x 2.5 mm      |
| Supply Voltage(V) | 3.0 V             |
| Pulling Range     | ±10 ppm           |
| Freq. Stability   | ±2.5 ppm          |
| Temp Range        | -30~+85 °C        |
| Output            | Clipped sine wave |
| Oscillator Mode   | AT Fundamental    |
| Appearance        | Normal Appearance |
| Lead Free         | RoHs Compliant    |
| Frequency         | 26.000000 MHz     |