TAITIEN
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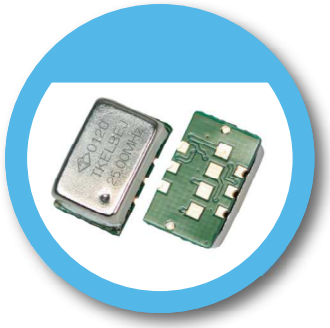
# TK Type
# 14.3 x 8.7 mm Voltage Controlled Temperature Compensated Crystal Oscillator

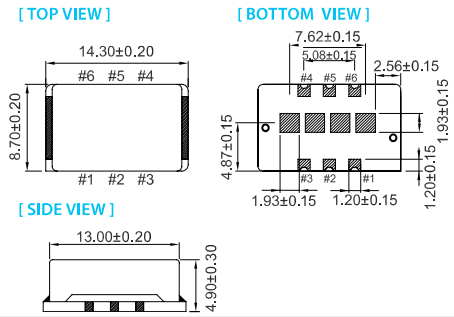


RoHS Compliant

## FEATURE
- Typical 14.3 x 8.7 x 4.9 mm.
- Metal cover, FR-4 PCB based.
- Output: TTL/CMOS or Clipped Sine Wave.
- Low current option (2mA for Clipped Sine Wave o/p).
- VCTCXO available.

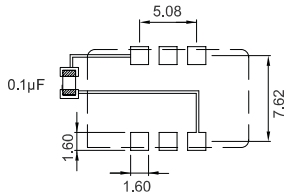
## TYPICAL APPLICATION
- Large-Scale equipment
- WLAN/WiMAX
- Mobile Phone

## DIMENSION (mm)




| Pin# | Function |
|---|---|
| 1 | Vcon:VC-TCXO<br>GND/NC:TCXO |
| 2 | Tri-State / NC |
| 3 | GND & Case |
| 4 | Output |
| 5 | NC |
| 6 | VDD |

## SOLDER PAD LAYOUT (mm)




To ensure optimal oscillator performance, place a by-pass capacitor of 0.1μF as close to the part as possible between Vdd and GND pads.

## ELECTRICAL SPECIFICATION

| Parameter | | 5.0 V | | 3.3 / 3.0 V | | Unit |
|---|---|---|---|---|---|---|
| | | Min. | Max. | Min. | Max. | |
| Supply Voltage Variation (VDD) | | VDD-5% | VDD+5% | VDD-5% | VDD+5% | V |
| Frequency Range | | 5 | 40 | 5 | 40 | MHz |
| Standard Frequency (for CMOS) | | 5, 6.4 ,8 , 8.192, 10, 12.5, 12.8, 16, 16.384, 19.44, 20, 25 | | | | MHz |
| Standard Frequency (for Clipped Sine Wave) | | 8.192, 10, 12.5, 12.8, 16, 16.384, 19.44, 20, 25 | | | | MHz |
| Frequency Tolerance* | | – | ±2.0 | – | ±2.0 | ppm |
| Frequency Stability | | | | | | |
| | Vs Supply Voltage (±5%) change | – | ±0.2 | – | ±0.2 | ppm |
| | Vs Load (±10%) change | – | ±0.2 | – | ±0.2 | ppm |
| | Vs Aging (@1st year) | – | ±1.0 | – | ±1.0 | ppm |
| Supply Current (CMOS output) | | – | 6 | – | 6 | mA |
| Supply Current (Clipped Sine Wave) | | – | 3.5 | – | 3.5 | mA |
| Output Level (CMOS) | Output High (Logic "1") | 90%VDD | – | 90%VDD | – | V |
| | Output Low (Logic "0") | – | 10%VDD | – | 10%VDD | V |
| | Duty | 45 | 55 | 45 | 55 | % |
| Output Level (Clipped Sine Wave) | | 0.8 | – | 0.8 | – | Vp-p |
| Lead (CMOS) | | 15pF | | 15pF | | |
| Lead (Clipped Sine Wave) | | 10 KΩ // 10pF | | 10 KΩ // 10pF | | |
| Control Voltage Range (VCTCXO) | | 0.5 | 2.5 | 0.5 | 2.5 | V |
| Pulling Range (VCTCXO) | | ±5.0 | – | ±5.0 | – | ppm |
| Vc Input Impedance (VCTCXO) | | 100 | – | 100 | – | kΩ |
| Phase Noise @ 12.8 MHz | 100 Hz | -120 | | -120 | | dBc/Hz |
| | 1 kHz | -140 | | -140 | | dBc/Hz |
| | 10 kHz | -148 | | -148 | | dBc/Hz |
| Start time | | – | 2 | – | 2 | mSec |
| Tri-State (option) | Disable | – | 1.5 | – | 0.99 | V |
| | Enable | 3.5 | – | 2.31 | – | V |
| 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.
*Frequency at 25°C, 1 hour after reflow.

## FREQ. STABILITY vs. TEMP. RANGE

| Temp. (°C) \ ppm | ±0.05 | ±0.1 | ±0.14 | ±0.2 | ±0.28 | ±0.37 | ±0.5 |
|---|---|---|---|---|---|---|---|
| -10 ~ +70 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| -20 ~ +70 | × | ○ | ○ | ○ | ○ | ○ | ○ |
| -40 ~ +85 | × | × | × | ○ | ○ | ○ | ○ |

* ○: Available △:Conditional X: Not available

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

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Specifications subject to change without notice.

# 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: 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 | 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: TCXO (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 | | 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) | | | | | | | |

**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 |