

TV Type

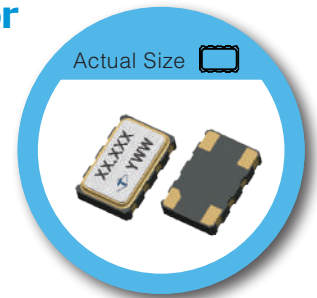
5.0 x 3.2 mm SMD Voltage Controlled Temperature Compensated Crystal Oscillator

FEATURE

- Typical 5.0 x 3.2 x 1.1 mm ceramic SMD package.
- For automatic assembly
- Compactness and light weight
- Low Power consumption.
- CMOS and Clipped Sine wave (without DC-Cut capacitor) output optional.
- Voltage control TCXO available
- -40 to 85°C operation

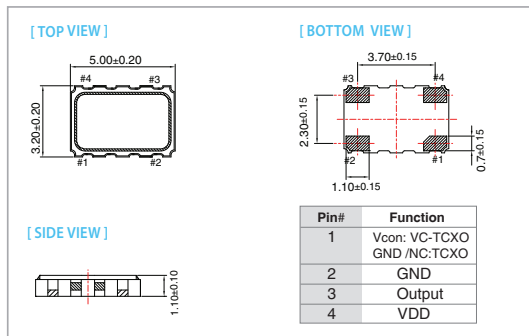
TYPICAL APPLICATION

- WLAN
- Telecommunication
- Mobile Application

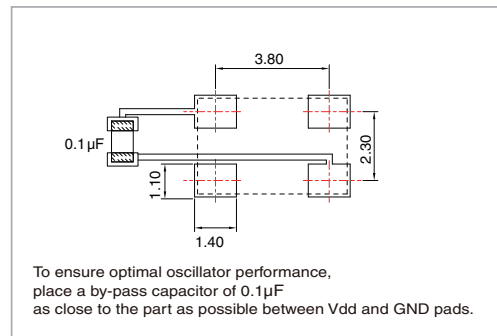


RoHS Compliant

DIMENSION (mm)



SOLDER PAD LAYOUT (mm)



ELECTRICAL SPECIFICATION

| Parameter | 3.3V/3.0V/2.8V | | 2.5V | | 1.8V | | Unit |
|---|--|--------------------|--------------------|--------------------|--------------------|--------------------|--------|
| | Min. | Max. | Min. | Max. | Min. | Max. | |
| Supply Voltage Variation (V _{DD}) | 2.66 | 3.465 | 2.375 | 2.625 | 1.71 | 1.89 | V |
| Frequency Range | 10 | 52 | 10 | 52 | 10 | 52 | MHz |
| Standard Frequency | 10, 12.8, 13, 16.368, 16.369, 19.2, 19.44, 20, 25, 26, 27, 30, 30.72, 32, 38.4 | | | | | | MHz |
| Frequency Tolerance | - | ±2.0 | - | ±2.0 | - | ±2.0 | ppm |
| Frequency Stability | | | | | | | |
| vs Supply Voltage (±5%) change | - | ±0.2 | - | ±0.2 | - | ±0.2 | ppm |
| vs Load (±10%) change | - | ±0.2 | - | ±0.2 | - | ±0.2 | ppm |
| vs Aging (@1 st year) | - | ±1.0 | - | ±1.0 | - | ±1.0 | ppm |
| Supply Current (Clipped Sine) | | | | | | | |
| 10MHz ≤ Fo ≤ 26MHz | - | 1.5 | - | 1.5 | - | 1.5 | mA |
| 26MHz < Fo ≤ 52MHz | - | 2 | - | 2 | - | 2 | mA |
| Supply Current (CMOS) | | | | | | | |
| 10MHz ≤ Fo ≤ 52MHz | - | 10 | - | 7 | - | 5 | mA |
| Clipped Sine | | | | | | | |
| Output Level | 0.8 | - | 0.8 | - | 0.8 | - | V |
| Load | 10KΩ/10pF | | | | | | |
| CMOS | | | | | | | |
| Output High | 90%V _{DD} | - | 90%V _{DD} | - | 90%V _{DD} | - | V |
| Output Low | - | 10%V _{DD} | - | 10%V _{DD} | - | 10%V _{DD} | V |
| Load | - | 15 | - | 15 | - | 15 | pF |
| Control Voltage Range | 0.5 | 2.5 | 0.4 | 2.4 | 0.3 | 1.5 | V |
| Pulling Range | ±5 | - | ±5 | - | ±5 | - | ppm |
| Vc Input Impedance | 500 | - | 500 | - | 500 | - | kΩ |
| Phase Noise | | | | | | | |
| @100Hz | - | -115 | - | -115 | - | -115 | dBc/Hz |
| @Fo=19.2M | - | -135 | - | -135 | - | -135 | dBc/Hz |
| Clipped Sine | - | -148 | - | -148 | - | -148 | dBc/Hz |
| Start Time | - | 2 | - | 2 | - | 2 | mSec |
| Storage Temp. Range | -40 | 85 | -40 | 85 | -40 | 85 | °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 | ±0.5 | ±1.0 | ±1.5 | ±2.0 | ±2.5 |
|------------|-----|------|------|------|------|------|
| -20 ~ +70 | ○ | ○ | ○ | ○ | ○ | ○ |
| -30 ~ +85 | ○ | ○ | ○ | ○ | ○ | ○ |
| -40 ~ +85 | ○ | ○ | ○ | ○ | ○ | ○ |

* O: Available Δ: Conditional X: Not available

*Inclusive of calibration @ 25°C, operating temperature range, input voltage variation, load variation, aging (1st year), shock, and vibration

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

Specifications subject to change without notice.