

WT Series TCVCXO

DESCRIPTION

MMDC-TECH manufactured WT series surface mountable 7.0 x 5.0mm temperature compensated voltage controlled crystal oscillators (TCVCXOs). The WT series crystal oscillators provide ultra high stabilities down to 0.5ppm and operating temperature ranges as wide as -55 to +125°C. The series high performance

TCXOs are designed for military, aerospace and similar applications requiring high reliability components.

FEATURES

7.0 x 5.0mm SMD Ceramic package
Low Power Consumption and Low Aging with Very Low phase Noise
Voltage Control Option
Full Screening in accordance with MIL-STD-883 , Class B

GENERAL SPECIFICATION

Frequency Range: 1.0Mhz to 40.0Mhz

Frequency Stability Available Over Operating Temperature Ranges

A: $\pm 2\text{ppm}$ over -55 to +125°C,

B: $\pm 1\text{ppm}$ over -45 to +85°C,

C: $\pm 0.5\text{ppm}$ over -20 to +75°C

Storage Temperature Range : -55 to +125°C

Supply Voltage Code: 50=5.0Vdc $\pm 10\%$; 33=3.3Vdc $\pm 10\%$

Output Voltage levels: HCMOS, $V_{OH} \geq 90\%V_S$, $V_{OL} \leq 10\%V_S$, Duty Cycle= 45/55%

Ageing: $\pm 1.0\text{ppm}$ maximum in first year , $\pm 3.0\text{ppm}$ maximum for 10 years

Ageing adjustment code:

with external voltage control applied to pad 10;

A=Ageing adjustment $\geq \pm 5.0\text{ppm}$;

B=No frequency adjustment initial calibration $\leq \pm 1.0\text{ppm}$

Linearity $\leq 1\%$; Slope: Positive ; Input resistance $> 100\text{K}\Omega$;

Standard Voltage control ranges:

Without reference Voltage , $V_S=5.0\text{V}$, $V_C=2.5\text{V} \pm 2\text{V}$

Without reference Voltage , $V_S=3.3\text{V}$, $V_C=1.65\text{V} \pm 1\text{V}$

With reference voltage , $V_C=0\text{V}$ to V_{ref}

Tri-state: Pad 8 open circuit or $> 0.6V_S$ output enabled , $< 0.2V_S$ output disabled

Reference Voltage Code ,Vref :

optional reference voltage output on pad 1,suitable for potentiometer supply

① No output

③ 4.2V ,for Min.Vs>4. 5V

② 2.7V ,for Min.Vs>3. 0V

For manual frequency adjustment connect an external 50 K Ω potentiometer between Pad1(Vref) and Pad4(GND) with wiper connected to Pad10–Voltage Control

Environmental / Mechanical

Shock :MIL-STD-883,Method 2002 ,Test Condition B

Vibration:MIL-STD-883 Method 2007

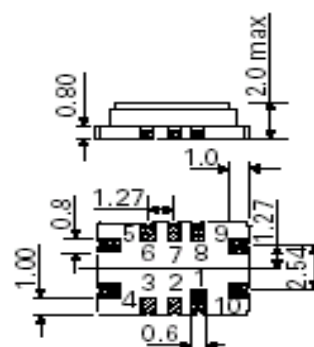
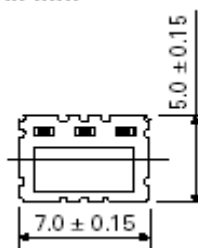
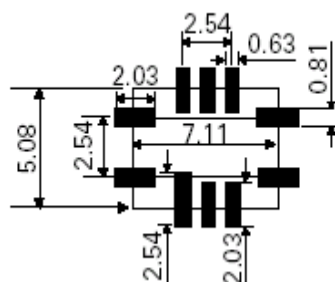
Solderability: MIL-STD-883,Method 2003

Hermeticity: MIL-STD-883,Method 1014 ,Test Condition C

Reflow Solder Condition: 150 °C for 60sec.Max. ; 240 °C for 10sec.Max.

Outline in mm

Solder pad layout



(*leave unconnected if not required)

Pin Connections

Pin1:Vref

Pins 2,3,6,7: N/C

Pin 4:GND

Pin 5:Output

Pin 8:Tri-state Control (Enable)*

Pin9: Vs

Pin10:Voltage Control*

: WT50B1B-16.0000Mhz , Supply Voltage is 5.0Vdc , No frequency adjustment,

± 1 ppm over -45 to $+85$ °C, Frequency 16Mhz

Ordering Example

Reference Voltage No Output , Frequency Stability is

WT series

Supply Voltage Code

Frequency Adjustment Code

Reference Voltage Code

Frequency Stability Code

Frequency

Test Circuit

