

# 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 Optionl

**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:  $\pm 2$ ppm over -55 to +125°C,

B:  $\pm 1$ ppm over -45 to +85°C,

C:  $\pm 0.5$ 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, VoH  $\geq 90\%V_s$  , VoL  $\leq 10\%V_s$ , Duty Cycle= 45/55%

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

Ageing adjustment code:

with external voltage control applied to pad 10;

A=Ageing adjustment  $\geq \pm 5.0$ ppm;

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

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

Standard Voltage control ranges:

Without reference Voltage ,  $V_s=5.0V$  ,  $V_c=2.5V \pm 2V$

Without reference Voltage ,  $V_s=3.3V$  ,  $V_c=1.65V \pm 1V$

With reference voltage ,  $V_c= 0V$  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 $\Omega$  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

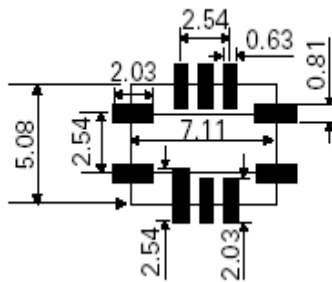
**Hermeticity:** MIL-STD-883,Method 1014 ,Test Condition C

**Vibration:**MIL-STD-883 Method 2007

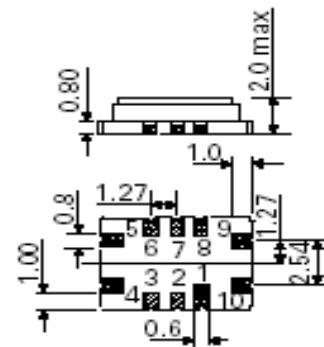
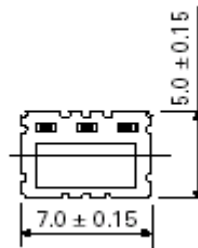
**Reflow Solder Condition:** 150 $^{\circ}$ C for 60sec.Max. ; 240 $^{\circ}$ C for 10sec.Max.

**Solderability:** MIL-STD-883,Method 2003

Solder pad layout



Outline in mm



## Pin Connections ( \*leave unconnected if not required )

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\*

**Ordering Example** : WT50B1B-16.0000Mhz , Supply Voltage is 5.0Vdc , No frequency adjustment, Reference Voltage No Output , Frequency Stability is  $\pm 1$ ppm over  $-45$  to  $+85^{\circ}$ C, Frequency 16Mhz

**WT series**

**Supply Voltage Code**

**Frequency Adjustment Code**

**Reference Voltage Code**

**Frequency Stability Code**

**Frequency**

Test Circuit

