Stratum 3E HCMOS Oscillator OX125 TiMax Series

CONNOR WINFIELD

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VCOCXO

The Connor-Winfield OX125 TiMax Series is a 5V Voltage Controlled Oven Controlled Crystal Oscillator (VCOCXO) with an HCMOS output. The OX125 Series is designed for Stratum 3E applications requiring low jitter and tight frequency stability.

Features:

- Designed to meet Stratum 3E requirements
- Variable frequency (VCOCXO)
- Frequency Stability ±10ppb
- 5.0V Operation
- HCMOS Output

Absolute Maximum Ratings

Parameter	Minimum	Nominal	Maximum	Units	Notes
Storage Temperature	-40	-	85	°C	
Supply Voltage (Vcc)	-0.5	-	7	Vdc	

Operating Specifications

Parameter	Minimum	Nominal	Maximum	Units	Notes
Center Frequency (Fo)	-	10-12.8	-	MHz	1
Frequency Calibration (Vc=2.5 Vdc)	-0.2	-	0.2	ppm	2
Frequency Stability	-10	-	10	ppb	3
Aging: Daily	-1	-	1	ppb/day	4
Aging: First Year	-30	-	30	ppb	
Aging: Short Term (1 Sec)	-	5.00E-11	-	RMS	5
Aging: Long Term (20 years)	-	-	300	ppb	
Operating Temp Range	0	-	70	°C	
Supply Voltage (Vcc)	4.75	5.00	5.25	Vdc	
Voltage Stability (±1%)	-0.5	-	0.5	ppb	6
Load Stability ±20%)	-0.5	-	0.5	ppb	7
Power Consumption: Turn On Steady-State	- -	- -	2.75 1.5	W	8
Start-Up Time	-	-	500	mS	9
Warm Up	-100	-	100	ppb	10
2G Tip-over	-	5	-	ppb/G	
TDEV at 300 seconds TDEV at 40 seconds	- -	- -	5 1	nS	11

Input Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Control Voltage (Pin 1) Vc	0.5	2.5	4.5	Vdc	
Deviation @ 25°C referenced to Fo	±0.3	-	±1.0	ppm	9
Input Impedance (Pin 1)	50k	-	-	Ohm	

RoHS-5/6 COMPLIANT

Notes:

1. Labels will include the calibration frequency at the time of ship.
2. Initial calibration @ 25°C, Vc=2.5Vdc
3. Frequency vs temperature stability
4. After ten days of continuous operation
5. Allen Variance: 1 second, 100 average
6. Frequency vs change in supply voltage
7. Frequency vs change in load
8. Vcc = 5.0Vdc
9. From Vcc=90% of final value. No more than 16 transitions at start-up before oscillator has started.
10. Measured @ 0°C, within 5 minutes, referenced one hour after turn-on.
11. At time of delivery.
12. HCMOS load.
13. For a given off time, the time required to meet daily aging, short-term stability and TDEV requirements.

Ordering Information

OX125 - 010.0 MHz

OCXO SERIES — CENTER FREQUENCY

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HCMOS Output Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Load	12	15	18	pf	12
Voltage: High (Voh)	Vcc-0.2V	-	-	Vdc	
Low (Vol)	-	-	0.2		
Duty Cycle at 50% of Vcc	45	50	55	%	
Rise / Fall Time 10% to 90%	-	-	5	nS	
Spurious Output	-	-	-80	dBc	
SSB Phase Noise					
at 1 Hz offset	-	-	-90	dBc/Hz	
at 10 Hz offset	-	-	-115		
at 100 Hz offiset	-	-	-130		
at 1 kHz offset	-	-	-135		
at 10 kHz offset	-	-	-140		

Restabilization Time

Off Time	Restabilization Time	Notes
< 1 Hour	< 2 Hours	
< 6 Hours	< 12 Hours	
<24 Hours	< 48 Hours	13
1 to 16 Days	48 Hours + ¼ Off Time	
> 16 Days	< 6 Days	

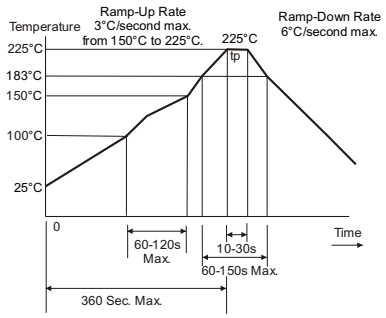
Package Characteristics

Package	Metal package: solder sealed, grounded case, solder tinned pins.

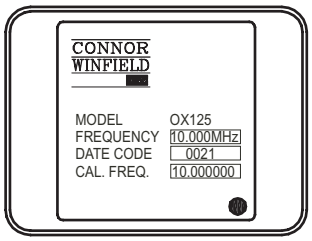
Environmental Characteristics

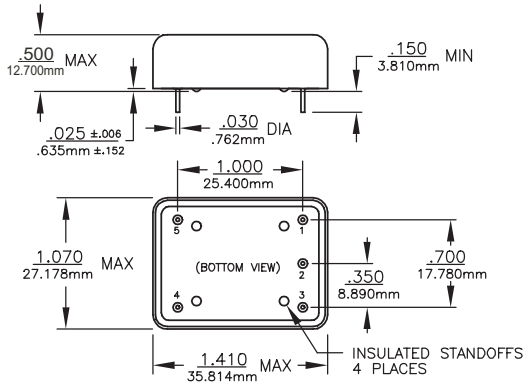
Shock	100G's, 6mS, halfsine per MIL-STD-202F, Method 213B, Test Condition C
Vibration	0.06" D.A. or 10G peak 10 to 500 Hz, per MIL-STD-202F, Method 204D, Test condition A

RoHS 5-6 Solder Profile

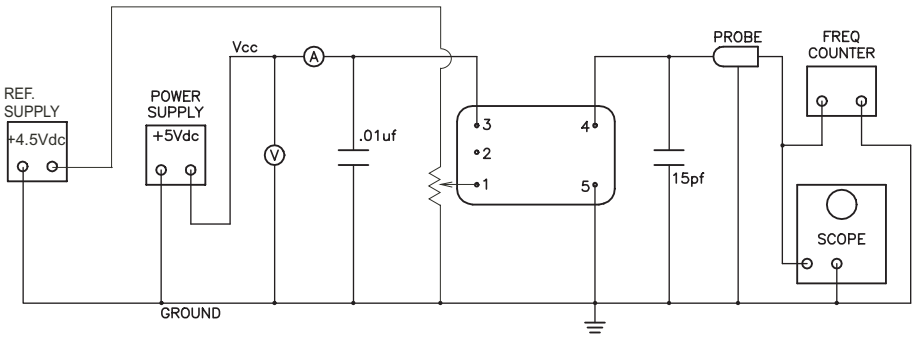


Package Outline





Test Diagram



Pin Connections

1: Control Voltage
2: No Connect
3: Supply Voltage
4: RF Output
5: Circuit & Package Ground

Dimensional Tolerance: ±.005 (.127mm)

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