CONNOR WINFIELD

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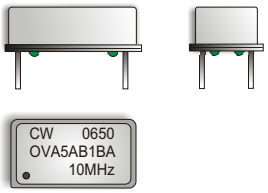
RoHS COMPLIANT

PRODUCT DATA SHEET

CRYSTAL CONTROLLED OSCILLATORS

14 PIN DIP 5.0V SINEWAVE OCVCXO



ABSOLUTE MAXIMUM RATINGS — TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-55	-	125	°C	
Supply Voltage	(Vcc)	-0.5	-	7.0	Vdc	
Control Voltage	(Vc)	-0.5	-	7.0	Vdc	

OPERATING SPECIFICATIONS — TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Center Frequency	(Fo)	6.4	-	25	MHz	
Frequency Calibration		-1.5		1.5	ppm	1, 4
Frequency Stability		-	-	0.25	ppm	2
Frequency vs. Change in Supply Voltage		-0.05	-	0.05	ppm	3
Aging (Daily		-30	-	30	ppb	4
Aging (20 years)		-2.5	-	2.5	ppm	
Total Frequency Tolerance		-4.6	-	4.6	ppm	5
Operating Temperature Range		0	-	70	°C	
Supply Voltage	(Vcc)	4.75	5.00	5.25	Vdc	
Supply Current	(Icc)	-	-	300	mA	
Steady State Supply Current @ 25°C		-	150	-	mA	
Phase Jitter (BW =10KHz to Fo/2)		-	-	1	ps RMS	
Phase Jitter (BW =10Hz to Fo/2)		-	-	3	ps RMS	
Period Jitter		-	-	3	ps RMS	
Start-Up Time: Oscillator		-	-	35	ms	
Warm Up Time		-	-	5	Minutes	6
TDEV at 1.0 seconds		-	-	1	ns	
TDEV at 4.0 seconds		-	-	2	ns	

INPUT CHARACTERISTICS — TABLE 3.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Control Voltage Range	(Vc)	0.5	2.0	4.1	Vdc	
Frequency at Vc=0.5 Vdc		-		-5	ppm	7
Frequency at Vc=4.1 Vdc		5		-	ppm	7
Slope of Frequency Adjust		2.8	-	-	ppm/V	
Input Impedance		100k	-	-	Ohm	

SINEWAVE OUTPUT CHARACTERISTICS — TABLE 4.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		45	50	55	Ohms	
Output Power		0	3	-	dBm	
Spurious Output				-80	dBc	
SSB Phase Noise at 1Hz offset		-	-60	-	dBc/Hz	
SSB Phase Noise at 10Hz offset		-	-90	-	dBc/Hz	
SSB Phase Noise at 100Hz offset		-	-120	-	dBc/Hz	
SSB Phase Noise at 1KHz offset		-	-140	-	dBc/Hz	
SSB Phase Noise at 10KHz offset		-	-150	-	dBc/Hz	

PACKAGE CHARACTERISTICS — TABLE 5.0

Package	14 pin DIP, hermetically sealed, welded package.

OVA5AB1BA

DESCRIPTION

The Connor-Winfield OVA5AB1BA is a hermetically sealed 14 Pin DIP, 5.0V Voltage Controlled Oven Stabilized Crystal Oscillator (OCVCXO) with a Sinewave output. The OVA5AB1BA is designed for applications requiring low jitter and tight frequency stability.

FEATURES

5.0V OPERATION
OCVCXO
SINEWAVE OUTPUT
LOW JITTER <1pS RMS
FREQUENCY STABILITY:
0.25ppm ABSOLUTE
TOTAL FREQUENCY TOLERANCE:
±4.6ppm OVER TWENTY YEARS
TEMPERATURE RANGE:
0 to 70°C
HERMETICALLY SEALED
14 PIN DIP PACKAGE
RoHS COMPLIANT / LEAD FREE

ORDERING INFORMATION

OVA5AB1BA - 10MHz

OCXO SERIES — CENTER FREQUENCY

Specifications subject to change without notice.

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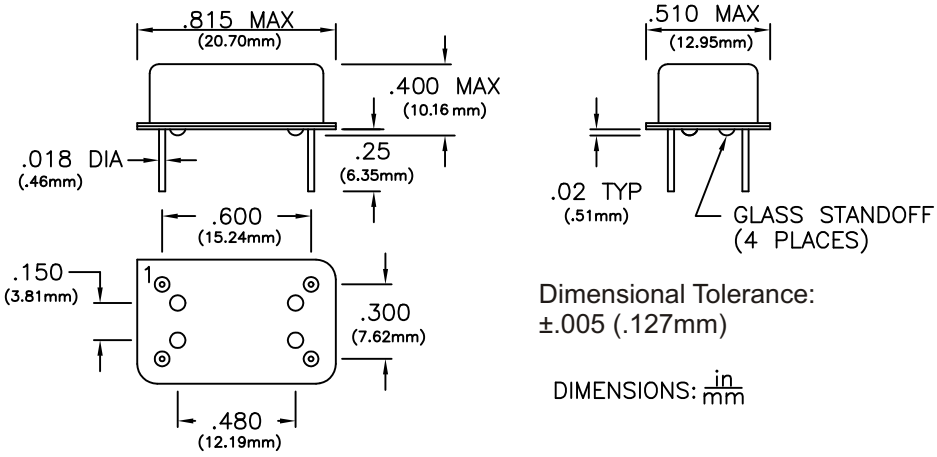
Notes:

1) Initial calibration @ 25 C, Vc = 2.0 Vdc.
2) Frequency stability, absolute over the temperature range of 0 to 70 C.
3) Frequency stability per 5% change in supply voltage.
4) At the time of shipment after 48 hours of operation.
5) Inclusive of calibration, operating temperature range, supply voltage change, shock and vibration and aging (20 years).
6) Measured @ 25 C, within 5 minutes, the unit will be within +/-0.1ppm of its reference frequency, measured after 30 minutes of continuous operation at a stable 25 C.
7) Referenced to Fo @ 25°C, Positive Transfer Characteristic.

Package Layout



Dimensional Tolerance:
±.005 (.127mm)

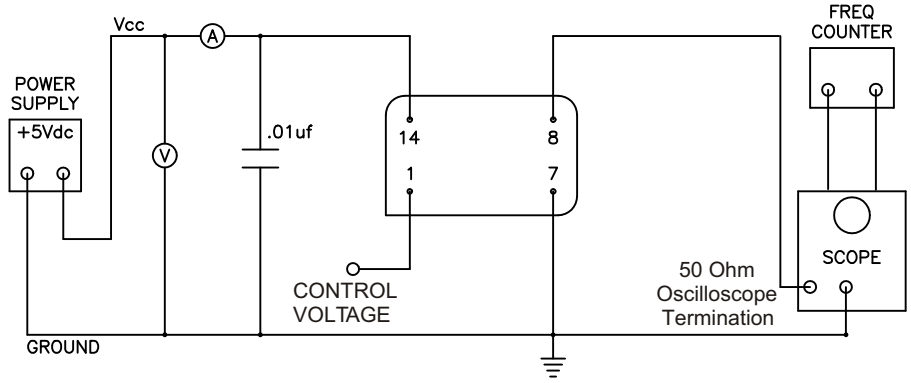
DIMENSIONS: in / mm

Pin Connections

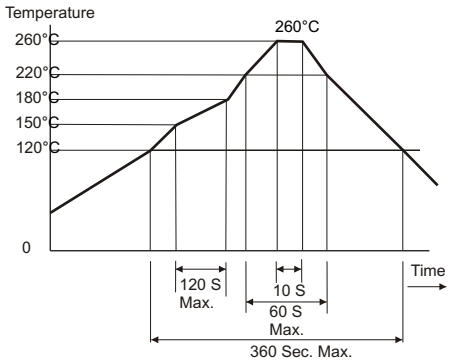
TABLE 6.0

Pin	Function
1	Voltage Control
7	Ground (Case)
8	Output
14	Vcc

Test Circuit



Solder Profile



ENVIRONMENTAL CHARACTERISTICS

Temperature Cycle: Per MIL-STD-883, Method 1010, Condition B. -55°C to 125°C, 300 cycles, 10 minute dwell, 1minute transition.
Gross Leak Test: Per MIL-STD-202, Method 112, Condition D. No Bubbles in flourinert (FC-43) at 125°C ±5°C for 20 seconds.

SOLDERING

Pin Solderability: Per MIL-STD-883, Method 2003. 8 hour steam age prior to 254°C ±5°C Solder pot dip, 95% Coverage.
Resistance to Solder Heat: Per MIL-STD-202, Method 210, Condition C. Wave: Topside board-mount product, 260°C ±5°C for 20 seconds.

MECHANICAL CHARACTERISTICS

Vibration: Per MIL-STD-202, Method 204, Condition A. 10G's peak, 10Hz to 500Hz, 15 minute cycles 12 times each perpendicular axis.
Shock: Per MIL-STD-202, Method 213, Condition F. 1500G's, 0.5ms, half sine, 3 shocks per direction.
Moisture Resistance: Per MIL-STD-202, Method 106. 95% RH @ 65°C, 10 cycles 10°C to 65°C.

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