

CRYSTAL CONTROLLED OSCILLATORS

14 PIN DIP 3.3V HCMOS STRATUM 3 OCVCXO with OVEN READY MONITOR



OVA3HA1CB

DESCRIPTION

The Connor-Winfield OVA3HA1CB is a hermetically sealed 14 Pin DIP 3.3V Oven Controlled, Voltage Controlled Crystal Oscillator (OCVCXO) with a Tri-State HCMOS output. The OVA3HA1CB features an Oven Ready Monitor and is designed for Stratum 3 applications requiring low jitter and tight frequency

FEATURES

- 3.3V OPERATION
- FREQUENCY ADJUST
- TRI-STATE ENABLE / DISABLE FUNCTION
- LOW JITTER <1pS RMS
- FREQUENCY STABILITY: ±0.25ppm
- FREQUENCY TOLERANCE: ±4.6ppm
- TEMPERATURE RANGE: 0 to 70°C
- OVEN READY MONITOR
- HERMETICALLY SEALED PACKAGE

ORDERING INFORMATION

OVA3HA1CB - 24.057MHz

OCXO
SERIES

CENTER
FREQUENCY

Specifications subject to change without notice.

ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-40	-	85	°C	
Supply Voltage	(Vcc)	-0.5	-	4.5	Vdc	
Control Voltage	(Vc)	-0.5	-	4.5	Vdc	

OPERATING SPECIFICATIONS

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Center Frequency	(Fo)	1.5	-	40	MHz	
Frequency Stability		-0.25	-	0.25	ppm	1
Total Frequency Tolerance		-4.6	-	4.6	ppm	2
Operating Temperature Range		0	-	70	°C	
Supply Voltage	(Vcc)	3.13	3.3	3.47	Vdc	
Supply Current	(Icc)	-	-	450	mA	
Phase Jitter (BW =12KHz to Fo/2)		-	-	1	pS RMS	
Phase Jitter (BW =10Hz to Fo/2)		-	-	3	pS RMS	
Period Jitter		-	-	3	pS RMS	
SSB Phase Noise at 10Hz offset		-	-75	-	dBc/Hz	
SSB Phase Noise at 10KHz offset		-	-130	-	dBc/Hz	
Start Up Time: Oscillator		-	-	10	mS	
Warm Up Time		-	-	1	Minute	3
TDEV @ 1.0 Sec.		-	-	1	nS	
TDEV @ 4.0 Sec.		-	-	2	nS	

INPUT CHARACTERISTICS

TABLE 3.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Control Voltage Range	(Vc)	0.3	1.65	3.0	Vdc	
Frequency at Vc=0.5 Vdc		-22.5	-	-13.5	ppm	4
Frequency at Vc=4.1 Vdc		13.5	-	22.5	ppm	4
Slope of Frequency Adjust		10	-	-	ppm/V	
Input Impedance		100k	-	-	Ohm	
Enable Voltage (High)	(Vih)	2.0	-	-	Vdc	5
Disable Voltage (Low)	(Vil)	-	-	0.8	Vdc	

HCMOS OUTPUT CHARACTERISTICS

TABLE 4.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	15	pf	
Voltage (High)	(Voh)	2.6	-	-	Vdc	
(Low)	(Vol)	-	-	0.4	Vdc	
Current (High)	(Ioh)	-4	-	-	mA	
(Low)	(Iol)	-	-	4	mA	
Duty Cycle measured at 1.5V		45	50	55	%	
Rise / Fall Time 10% to 90%		-	-	6	nS	
Oven Ready Monitor voltage when oven is cold, not at operating temperature.	Pin 12	-	-	0.4	Vdc	
Oven Ready Monitor voltage when oven is warm, at operating temperature.	Pin 12	3.0	-	-	Vdc	

PACKAGE CHARACTERISTICS

TABLE 5.0

Package	14 pin DIP, hermetically sealed, grounded case, welded package
---------	--

CRYSTAL CONTROLLED OSCILLATORS

Notes:

- 1) Frequency vs. temperature stability, Vc = 1.65V.
- 2) Inclusive of calibration, operating temperature range, supply voltage change, load change, shock and vibration, 10 years aging, Vc = 1.65V.
- 3) After one minute of operation at 25°C, the unit will be within +/-0.5ppm of its final stabilized frequency. The final stabilized frequency is that which is measured after 30 minutes of continuous operation at a stable 25°C ambient temperature.
- 4) Referenced to Fo @ 25°C, Positive Transfer Characteristic
- 5) Oscillator output is enabled with no connection on pin 3.

ENVIRONMENTAL CHARACTERISTICS

Temperature Cycle: Per MIL-STD-883, Method 1010, Condition B. -55°C to 125°C, 20 cycles, 10 minute dwell, 1 minute 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 200. 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.

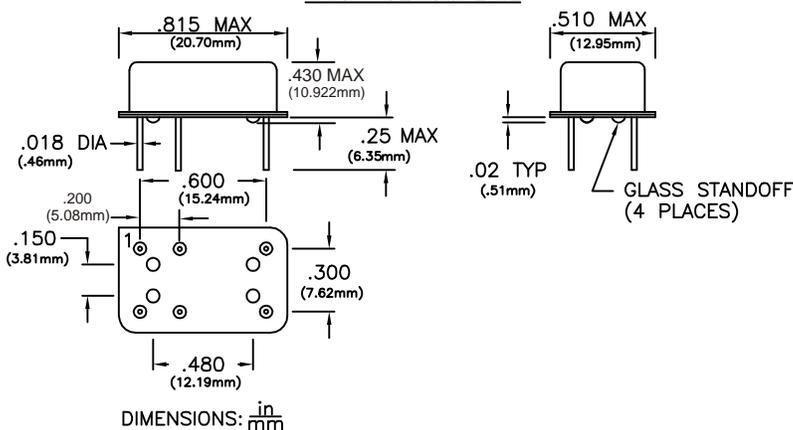
MECHANICAL CHARACTERISTICS

Vibration: Per MIL-STD-202, Method 204, Condition A. 10G's peak, 10Hz to 500Hz, 15 minute cycles 12 times each perpendicular axis.

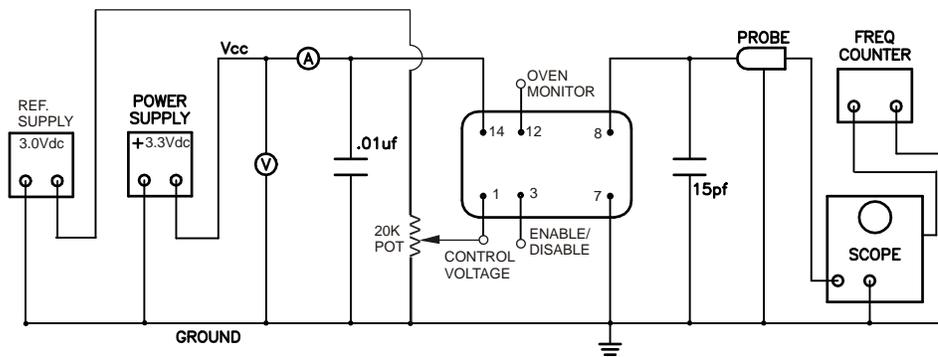
Shock: Per MIL-STD-202, Method 213, Condition D. 500G's, 1ms, half sine, 3 shocks per direction.

Moisture Resistance: Per MIL-STD-202, Method 106. 95% RH @ 65°C, 10 cycles 10°C to 65°C.

PACKAGE OUTLINE



PIN	CONNECTION
1	CONTROL VOLTAGE
3	ENABLE / DISABLE
7	GROUND (CASE)
8	OUTPUT
12	OVEN MONITOR
14	+ SUPPLY



Specifications subject to change without notice.