

CRYSTAL CONTROLLED OSCILLATORS

14 PIN DIP 3.3V HCMOS FIXED FREQUENCY OCXO



OFA3AB1AA

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	

OPERATING SPECIFICATIONS

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Center Frequency	(Fo)	12.8	-	20.0	MHz	
Frequency Calibration		-1.5	-	1.5	ppm	1
Frequency Stability		-0.25	-	0.25	ppm	2
Aging (Daily)		-30	-	30	ppb	3
Aging (20 Years)		-2.5	-	2.5	ppm	
Total Frequency Tolerance		-4.6	-	4.6	ppm	4
Operating Temperature Range		0	-	70	°C	
Supply Voltage	(Vcc)	3.135	3.3	3.465	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		-	-90	-	dBc/Hz	
SSB Phase Noise at 10KHz offset		-	-150	-	dBc/Hz	
Start Up Time: Oscillator		-	-	10	mS	
Warm Up Time		-	-	5	Minutes	5
TDEV @ 1.0 Sec.		-	-	1	nS	
TDEV @ 4.0 Sec.		-	-	2	nS	

HCMOS OUTPUT CHARACTERISTICS

TABLE 3.0

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 at 50% of Vcc		45	50	55	%	
Rise / Fall Time 10% to 90%		-	-	6	nS	

PACKAGE CHARACTERISTICS

TABLE 4.0

Package	14 pin DIP, hermetically sealed, grounded case, welded package
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Notes:

- 1) Initial calibration @ 25°C
- 2) Frequency vs. temperature stability, 0 to 70°C absolute.
- 3) At the time of shipment after 48 hours of operation.
- 4) Inclusive of calibration, operating temperature range, supply voltage change, load change, shock and vibration, 10 years aging.
- 5) 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

DESCRIPTION

The Connor-Winfield OFA3AB1AA is a hermetically sealed 14 Pin DIP, 3.3V Oven Controlled Crystal Oscillator (OCXO) with an HCMOS/TTL compatible output. The OFA3AB1AA is designed for applications requiring higher frequency, low jitter and tight frequency stability.

FEATURES

- 3.3V OPERATION
- LOW JITTER <1pS RMS
- FREQUENCY STABILITY: ±0.25ppm
- TEMPERATURE RANGE: 0 to 70°C
- FREQUENCY TOLERANCE OF ±4.6ppm OVER TEN YEARS
- HERMETICALLY SEALED PACKAGE
- RoHS COMPLIANT / LEAD FREE

ORDERING INFORMATION

OFA3AB1AA - 20MHz

OCXO
SERIES

CENTER
FREQUENCY

Specifications subject to change without notice.

CRYSTAL CONTROLLED OSCILLATORS

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.

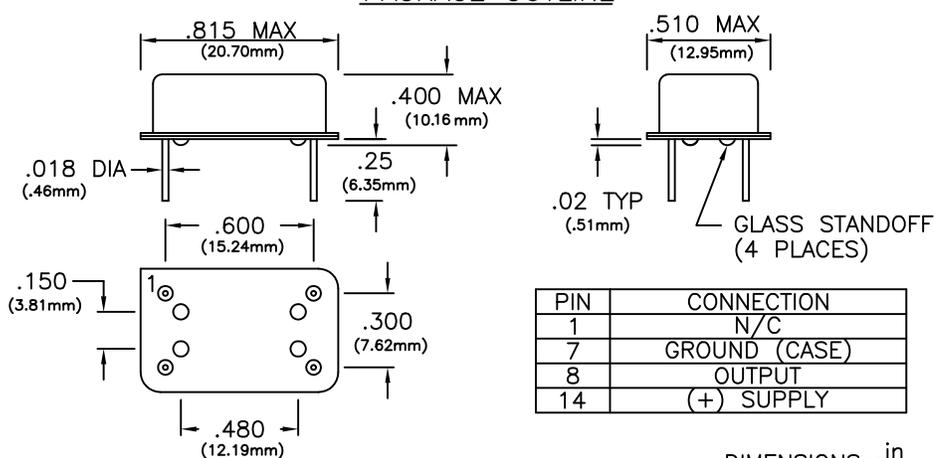
MECHANICAL CHARACTERISTICS

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 F. 1500G's, 0.5ms, half sine, 3 shocks per direction.

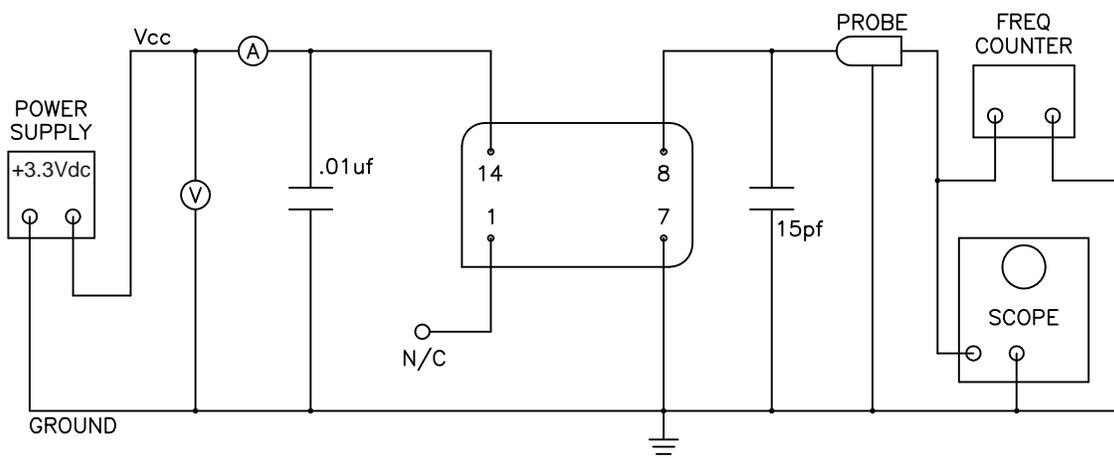
Moisture Resistance: Per MIL-STD-202, Method 106. 95% RH @ 65°C, 10 cycles 10°C to 65°C.

PACKAGE OUTLINE



DIMENSIONS: $\frac{\text{in}}{\text{mm}}$

TEST DIAGRAM



Specifications subject to change without notice.