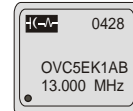
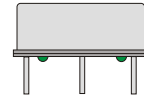


# CRYSTAL CONTROLLED OSCILLATORS

## 5V HCMOS OCVCXO



### OVC5EK1AB

#### DESCRIPTION

The Connor-Winfield OVC5EK1AB is a 5V Oven Controlled Crystal Oscillator (OCVCXO) with HCMOS output. The OVC5EK1AB is designed for applications requiring low phase noise and tight frequency stability.

#### FEATURES

- VOLTAGE CONTROLLED FREQUENCY ADJUST
- FREQUENCY STABILITY:  $\pm 50$ ppb MAX
- TEMPERATURE RANGE: 0 to 70°C
- 5.0V OPERATION
- HCMOS OUTPUT
- HERMETICALLY SEALED PACKAGE

#### ORDERING INFORMATION

OVC5EK1AB - 13.000MHz

OCXO  
SERIES

CENTER  
FREQUENCY

#### ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-55	-	125	°C	
Supply Voltage	(Vcc)	-0.5	-	7	Vdc	
Control Voltage	(Vc)	-0.5	-	7	Vdc	

#### OPERATING SPECIFICATIONS

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Center Frequency	(Fo)	9	-	13	MHz	
Frequency Calibration @ 25°C (Vc = 2.0V)		-0.3	-	0.3	ppm	1
Frequency Stability vs. Temperature		-50	-	50	ppb	2
Aging: Daily		-1	-	1	ppb/day	3
Aging: First Year		-100	-	100	ppb	
Aging: Ten Years		-300	-	300	ppb	
Aging: Short Term (1Sec.)		-	-	5.00E-11	RMS	4
Operating Temperature Range		0	-	70	°C	
Supply Voltage	(Vcc)	4.75	5.00	5.25	Vdc	
Voltage Stability (+/-5%)		-5.0	-	5.0	ppb	5
Load Stability (+/-20%)		-5.0	-	5.0	ppb	6
Power Consumption: Turn On		-	-	3.0	W	7
Power Consumption: Steady-State		-	-	1.25	W	7
Warm Up		-100	-	100	ppb	8

#### INPUT CHARACTERISTICS

TABLE 3.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Control Voltage (Pin 1)	Vc	0.0	2.0	4.0	Vdc	
Deviation @ 25°C referenced to Fo		$\pm 1.0$	-	-	ppm	9
Input Impedance (Pin 1)		50K	-	-	Ohm	
Deviation Linearity		-10	-	10	%	

#### HCMOS OUTPUT CHARACTERISTICS

TABLE 4.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		12	15	18	pF	10
Voltage (High)	(Voh)	4.2	-	-	Vdc	
(Low)	(Vol)	-	-	0.4	Vdc	
Duty Cycle at 50% of Vcc		45	50	55	%	
Rise / Fall Time 10% to 90%		-	-	6	nS	
Spurious Output		-	-	-80	dBc	
SSB Phase Noise at 1Hz offset		-	-	-80	dBc/Hz	
SSB Phase Noise at 10Hz offset		-	-	-120	dBc/Hz	
SSB Phase Noise at 100Hz offset		-	-	-140	dBc/Hz	
SSB Phase Noise at 1KHz offset		-	-	-145	dBc/Hz	
SSB Phase Noise at 10KHz offset		-	-	-150	dBc/Hz	
SSB Phase Noise at 100KHz offset		-	-	-150	dBc/Hz	

#### PACKAGE CHARACTERISTICS

TABLE 5.0

Package	Metal package: resistive welded, grounded case, solder tinned pins.
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#### Notes:

- 1) Initial calibration @ 25°C, Vc=2.0Vdc at the time of delivery.
- 2) Frequency vs. temperature stability, absolute 0 to 70°C.
- 3) After three days continuous operation.
- 4) Allen Variance: 1 second, 100 average.
- 5) Frequency vs. change in supply voltage, absolute 4.75V to 5.25V
- 6) Frequency vs. change in load, absolute 12pF to 18pF.
- 7) Vcc = 5.0Vdc @ 25°C.
- 8) Measured @ 25°C, within 5 minutes, referenced one hour after turn-on.
- 9) Positive Slope
- 10) Two HCMOS loads

Specifications subject to change without notice.

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## ENVIRONMENTAL CHARACTERISTICS

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

## SOLDERING

Pin Solderability: Per MIL-STD-883, Method 200. 8 hour steam age prior to 254°C ±5°C Solder pot dip, 95% Coverage.

## MECHANICAL CHARACTERISTICS

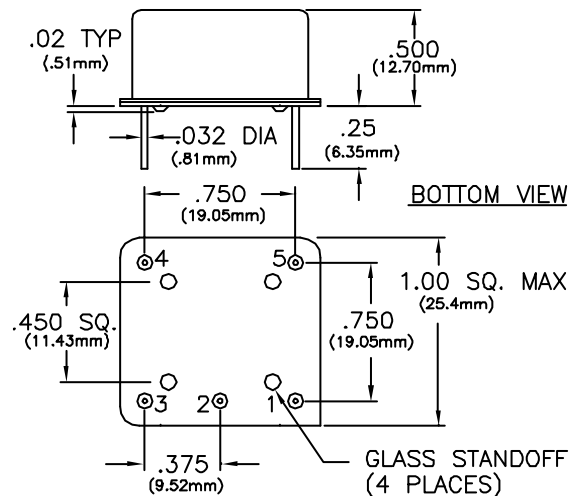
Vibration: Per MIL-STD-202, Method 204D, Condition A. 10G's peak, 10Hz to 500Hz, 15 minute cycles 12 times each perpendicular axis.

Shock: Per MIL-STD-202, Method 213, Condition C. 100G's, 6ms, 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.

Thermal Shock: Per MIL-STD-202, Method 107, Condition A, -55°C to 85°C.

Pin	Connection
1	Output
2	Ground, Case
3	Control Voltage
4	N/C
5	Vcc



Dimensional Tolerance:  
±.005 (.127mm)

