OVC5EK1AB
5.0V OCVCXO
HCMOS Output

CONNOR WINFIELD

2111 Comprehensive Drive
Aurora, Illinois 60505
Phone: 630-851-4722
Fax: 630-851-5040
www.conwin.com
US Headquarters:
630-851-4722
European Headquarters:
+353-61-472221

Description:

Connor-Winfield model OVC5EK1AB is a 5.0 Vdc, Oven Compensated Voltage Controlled Crystal Oscillator (OCVCXO) in a 25.4x25.4mm package. The OVC5EK1AB is designed for use in applications requiring very high frequency stability and low phase noise.

Features:

Model: OVC5EK1AB
OCVCXO
5.0 Vdc Operation
25.4x25.4mm Package
Frequency Stability: 50 ppb Absolute
Temperature Range: 0 to 70°C
HCMOS Output
RoHS Compliant / Lead Free

Absolute Maximum Ratings

Parameter	Minimum	Nominal	Maximum	Units	Notes
Storage Temperature	-55	-	125	°C	
Supply Voltage (Vcc)	-0.5	-	7.0	Vdc	
Control Voltage (Vc)	-0.5	-	Vcc+0.5	Vdc	

Operating Specifications

Parameter	Minimum	Nominal	Maximum	Units	Notes
Center Frequency (Fo)	9.0	-	27	MHz	
Frequency Calibration	-0.3	-	0.3	ppm Absolute	1
Frequency Stability:	-	-	50	ppb	2
Aging: Daily	-1.0	-	1.0	ppb/day	3
Aging: First Year	-100	-	100	ppb	
Aging: Ten Years	-300	-	300	ppb	
Short Term Allen Variance (1s)	-	-	5.0E-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: (+/-10%)	-5.0	-	5.0	ppb	6
Power Consumption: Turn On	-	-	3.00	W	7
Power Consumption: Steady State	-	-	1.25	W	7
Warm Up:	-100	-	100	ppb	8

Input Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Control Voltage (Pin 1) (Vc)	0.0	2.0	4.0	Vdc	
Deviation @ 25°C referenced to Fo	±1.0	-	-	ppm	9
Input Impedance Pin 1	50K	-	-	Ohm	
Linearity	-10	-	10	%	

HCMOS Output Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Load -	12	15	18	pF	10
Voltage (High) Voh	4.2	-	-	V	
(Low) Vol	-	-	0.4	V	
Duty Cycle	45	50	55	%	
Rise / Fall Time (10%to 90%)	-	-	6	ns	
Spurious Output	-	-	-80	dBc	
Maximum Phase Noise		9 to 12.999 MHz	13 to 27 MHz		
SSB Phase Noise at 1Hz offset	-	-80	-75	dBc/Hz	
SSB Phase Noise at 10Hz offset	-	-120	-105	dBc/Hz	
SSB Phase Noise at 100Hz offset	-	-140	-130	dBc/Hz	
SSB Phase Noise at 1KHz offset	-	-145	-145	dBc/Hz	
SSB Phase Noise at 10KHz offset	-	-150	-150	dBc/Hz	
SSB Phase Noise at 100KHz offset	-	-150	-150	dBc/Hz	

Notes:

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

RoHS COMPLIANT

Bulletin	Cx072
Page	1 of 2
Revision	01
Date	09 Apr 2009

CONNOR WINFIELD

2111 Comprehensive Drive
Aurora, Illinois 60505
Phone: 630-851-4722
Fax: 630-851-5040
www.conwin.com

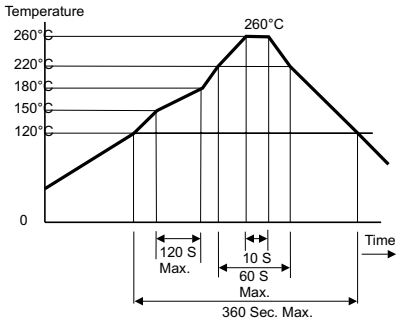
Package Characteristics

Package	Hermetically sealed welded package with grounded case.

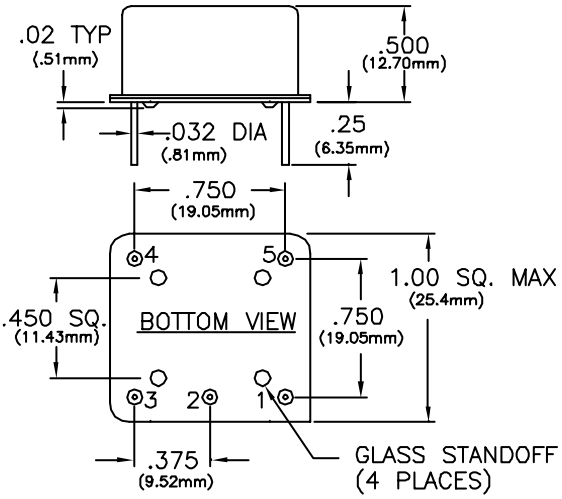
Environmental Characteristics

Shock	500 G's 1ms, Half sine, 3 shocks per direction, per MIL-STD 202F, Method 213B Test Condition D.
Sinusoidal Vibration	0.06" D.A. or 10G's Peak, 10 to 500 Hz, per MIL-STD-202F, Method 204D, Test Condition A.
Random Vibration	5.35 G's rms. 20 to 2000 Hz per MIL-STD-202F, Method 214,Test Condition 1A, 15 minutes each axis.
Moisture	10 cycles, 95% RH, Per MIL-STD-202F, Method 112.
Marking Permanency	Per MIL-STD-202F, Method 215J.
Attachment Method PCB	Through Hole Mounted
Resistance to Solder Heat	Per MIL-STD-202F, Method 210, Condition E.
Solder Process	RoHS compliant, lead free. See solder profile.

Solder Profile



Package Outline



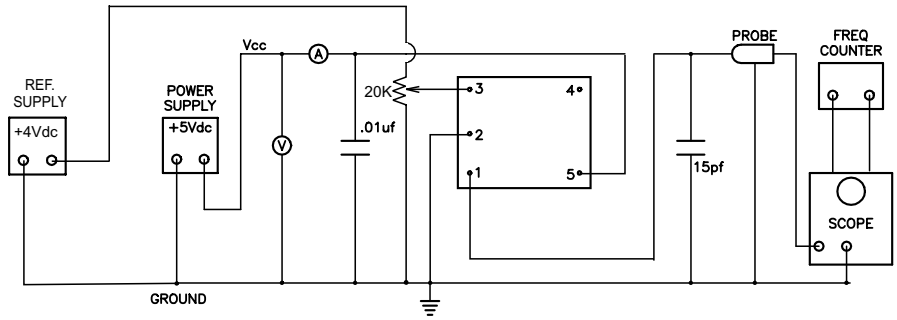
Dimensional Tolerance:
±.005 (.127mm)

Marking Diagram

Pin Connections

Pin	Connection
1:	Output
2:	Ground (Case)
3:	Control Voltage (Vc)
4:	N/C
5:	Supply Voltage (Vcc)

Test Circuit



Ordering Information

OVC5EK1AB - 013.0M

OCXO SERIES — CENTER FREQUENCY

Bulletin	**Cx072**
Page	**2 of 2**
Revision	**01**
Date	**09 Apr 2009**