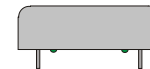
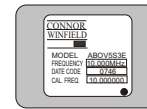


# CRYSTAL CONTROLLED OSCILLATORS

## STRATUM 3E HCMOS VCOCXO



**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	
Input Voltage		-0.5	-	Vcc+0.5	Vdc	

**OPERATING SPECIFICATIONS**

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Center Frequency	(Fo)	-	10 or 12.8	-	MHz	1
Frequency Calibration (Vc= 2.5 Vdc)		-0.2	-	0.2	ppm	2
Frequency Stability		-	-	10	ppb	3
Voltage Stability (+/-1%) ref. 5.0 Vdc		-0.5	-	0.5	ppb	
Load Stability (+/-20%) ref. 15 pF		-0.5	-	0.5	ppb	
Aging: Daily		-1	-	1	ppb/day	4
Aging: First Year		-30	-	30	ppb	
Aging: Short Term (1Sec.)		-	5.00E-11	-	RMS	5
Aging: Long Term (20 Years)		-	-	200	ppb	
Operating Temperature Range		-40	-	75	°C	
Supply Voltage	(Vcc)	4.75	5.00	5.25	Vdc	
Power Consumption: Turn On		-	-	3.5	W	6
Power Consumption: Steady-State		-	-	1.8	W	6
Start-Up Time				500	mS	7
Warm Up		-100	-	100	ppb	8
2G Tip-over		-	5	-	ppb/G	
TDEV at 300 seconds		-	-	5	nS	9
TDEV at 40 seconds		-	-	1	nS	9

**INPUT CHARACTERISTICS**

TABLE 3.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Control Voltage (Pin 1)	Vc	0.5	2.5	4.5	Vdc	
Deviation @ 25°C referenced to Fo		±0.45	-	±1.0	ppm	10
Input Impedance (Pin 1)		50K	-	-	Ohm	

**HCMOS OUTPUT CHARACTERISTICS**

TABLE 4.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		12	15	18	pF	11
Voltage (High)	(Voh)	Vcc-0.2V	-	-	Vdc	
(Low)	(Vol)	-	-	0.2	Vdc	
Duty Cycle at 50% of Vcc		45	50	55	%	
Rise / Fall Time 10% to 90%		-	-	5	nS	
Spurious Output				-80	dBc	
SSB Phase Noise at 1Hz offset		-	-	-90	dBc/Hz	
SSB Phase Noise at 10Hz offset		-	-	-115	dBc/Hz	
SSB Phase Noise at 100Hz offset		-	-	-130	dBc/Hz	
SSB Phase Noise at 1KHz offset		-	-	-140	dBc/Hz	
SSB Phase Noise at 10KHz offset		-	-	-150	dBc/Hz	

**RE-STABILIZATION TIME**

TABLE 5.0

Off Time	Re-stabilization Time	NOTE
< 1 Hour	< 2 Hours	12
< 6 Hours	< 12 Hours	12
< 24 Hours	< 48 Hours	12
1 to 16 Days	48 Hours + ¼ Off Time	12
> 16 Days	< 6 Days	12

## ABOV5S3E

### DESCRIPTION

The Connor-Winfield ABOV5S3E is a 5V Voltage Controlled Oven Controlled Crystal Oscillator (VCOCXO) with an HCMOS output. The ABOV5S3E is designed for Stratum 3E applications requiring low jitter and tight frequency stability.

### FEATURES

DESIGNED TO MEET STRATUM 3E REQUIREMENTS

VCOCXO

FREQUENCY STABILITY: 10ppb ABSOLUTE

TEMPERATURE RANGE: 0 to 70C

5.0V OPERATION

HCMOS OUTPUT

RoHS 5/6 COMPLIANT

### ORDERING INFORMATION

ABOV5S3E - 010.0M

OCXO  
SERIES

CENTER  
FREQUENCY

Specifications subject to change without notice.

# CRYSTAL CONTROLLED OSCILLATORS

**PACKAGE CHARACTERISTICS**

TABLE 6.0

Package	Metal package: solder sealed, grounded case, solder tinned pins.
Solder Process	RoHS 5/6 compliant, see solder profile below.

**ENVIRONMENTAL CHARACTERISTICS**

TABLE 7.0

Shock	100G's, 6mS, halfsine per MIL-STD-202F, Method 213B, Test Condition C
Vibration	0.06" D.A. or 10G peak 10 to 500 Hz, per MIL-STD-202F, Method 204D, Test condition A

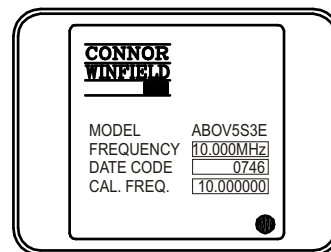
**Notes:**

- Labels will include the calibration frequency at the time of ship.
- Initial calibration referenced to Fo at time of shipment @ 25°C, Vc=2.5Vdc.
- Frequency vs. temperature stability, absolute change over 0 to 70°C.
- After ten days of continuous operation.
- Allen Variance: 1 second, 100 average.
- Vcc = 5.0Vdc.
- From Vcc=90% of final value. No more than 16 transitions at start-up before oscillator has started.
- Measured @ 0°C, within 5 minutes, referenced one hour after turn-on.
- After re-stabilization time.
- Positive slope.
- HCMOS load.
- For a given off time, the time required to meet daily aging, short-term stability and TDEV requirements.

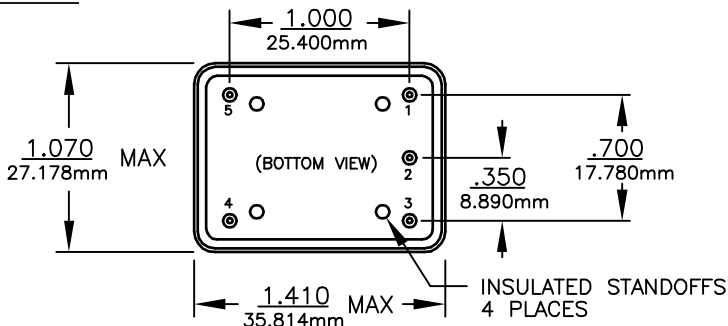
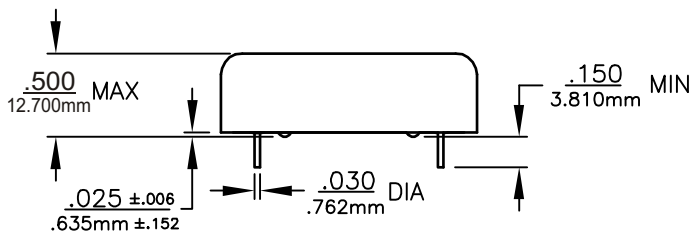
**Pin Connections**

PIN	CONNECTION
1	CONTROL VOLTAGE
2	NO CONNECT
3	SUPPLY VOLTAGE
4	RF OUTPUT
5	CIRCUIT AND PACKAGE GROUND

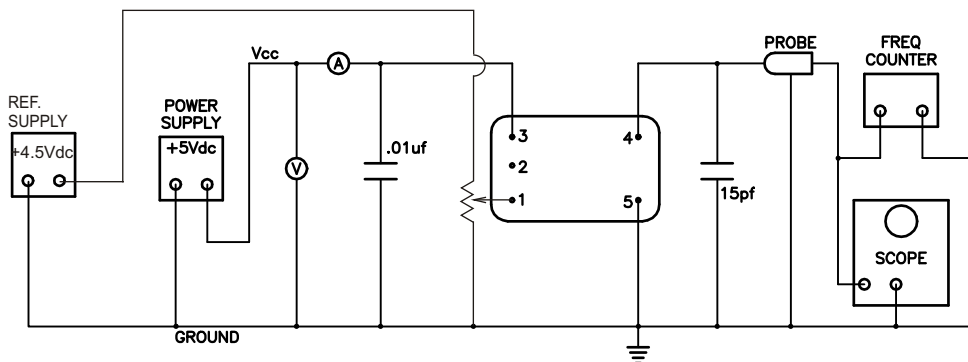
**Labeling Diagram**



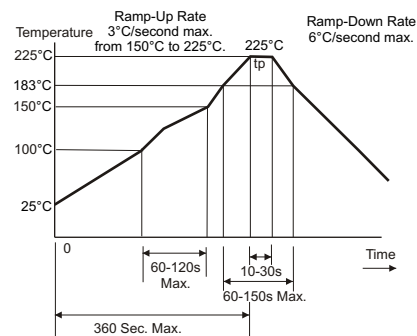
**Package Outline**



**Test Circuit**



**Solder Profile**



Specifications subject to change without notice.