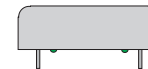
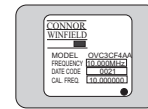


# CRYSTAL CONTROLLED OSCILLATORS

## STRATUM 3E LVCMOS OCVCXO 3.3V



### ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-55	-	125	°C	
Supply Voltage	(Vcc)	-0.5	-	4.5	Vdc	
Input Voltage		-0.5	-	Vcc+0.5	Vdc	

### OPERATING SPECIFICATIONS

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Center Frequency	(Fo)	-	10, 12.8, 20	-	MHz	1
Frequency Calibration (Vc= 1.65 Vdc)		-0.2	-	0.2	ppm	2
Frequency Stability		-10	-	10	ppb	3
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)		-	-	300	ppb	
Operating Temperature Range		-40	-	70	°C	
Supply Voltage	(Vcc)	3.13	3.30	3.47	Vdc	
Voltage Stability (+/-1%)		-0.5	-	0.5	ppb	
Load Stability (+/-20%)		-0.5	-	0.5	ppb	
Power Consumption: Turn On		-	-	4.0	W	6
Power Consumption: Steady-State		-	-	1.25	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

## OVC3CF4AA

### DESCRIPTION

The Connor-Winfield OVC3CF4AA is a 3.3V Voltage Controlled Oven Controlled Crystal Oscillator (OCVCXO) with an LVCMOS output. The OVC3CF4AA is designed for Stratum 3E applications requiring low jitter and tight frequency stability.

### FEATURES

- DESIGNED TO MEET STRATUM 3E REQUIREMENTS
- VARIABLE FREQUENCY (OVCCXO)
- FREQUENCY STABILITY ±10ppb
- TEMPERATURE RANGE -40 to 70°C
- 3.3V OPERATION
- LVCMOS OUTPUT
- RoHS 5/6 COMPLIANT

### ORDERING INFORMATION

OVC3CF4AA - 010.0M

OCXO  
SERIES

CENTER  
FREQUENCY

Specifications subject to change without notice.

### INPUT CHARACTERISTICS

TABLE 3.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Control Voltage (Pin 1)	Vc	0.3	1.65	3.3	Vdc	
Deviation @ 25°C referenced to Fo		±0.3	-	±1.0	ppm	10
Input Impedance (Pin 1)		50K	-	-	Ohm	

### LVCMOS 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	

### RESTALLIZATION TIME

TABLE 5.0

Off Time	Restabilization 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

# 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

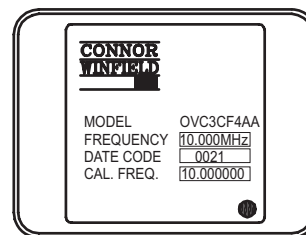
**Pin Connections**

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

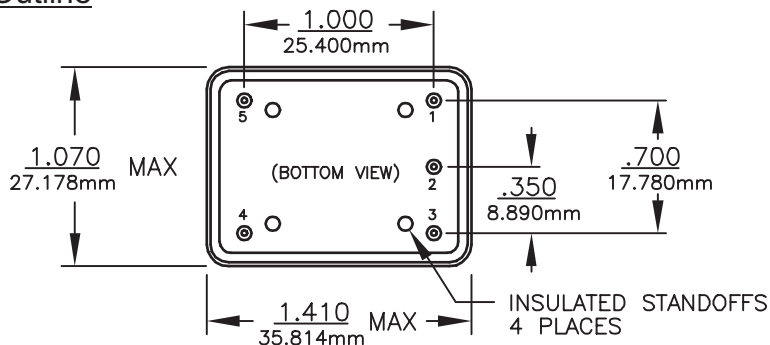
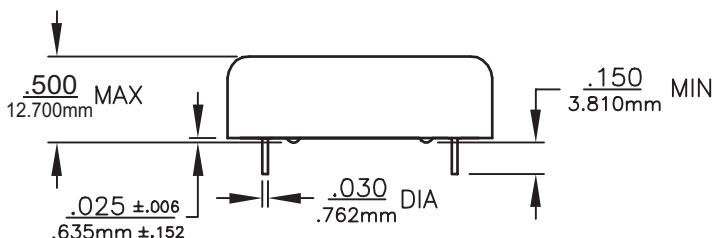
**Notes:**

- 1) Labels will include the calibration frequency at the time of ship.
- 2) Initial calibration @ 25 C, Vc=1.65Vdc, at time of shipment.
- 3) Frequency vs. temperature stability, referenced to 25 C.
- 4) After ten days of continuous operation.
- 5) Allen Variance: 1 second, 100 average.
- 6) Vcc = 3.3Vdc.
- 7) From Vcc=90% of final value. No more than 16 transitions at start-up before oscillator has started.
- 8) Measured @ -40 C, within 5 minutes, referenced one hour after turn-on.
- 9) After stabilization in a controlled airflow environment.
- 10) At time of delivery.
- 11) LVCMOS load.
- 12) For a given off time, the time required to meet daily aging, short-term stability and TDEV requirements.

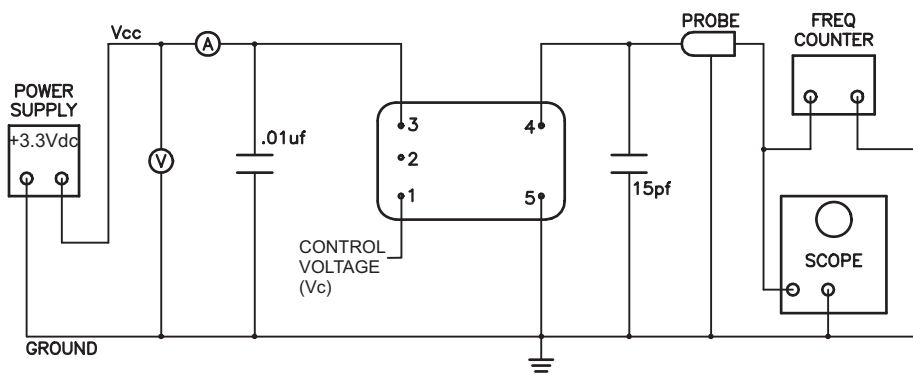
**Labeling Diagram**



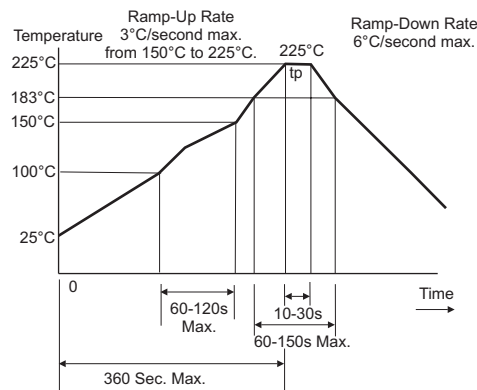
**Package Outline**



**Test Circuit**



**Solder Profile**



Specifications subject to change without notice.