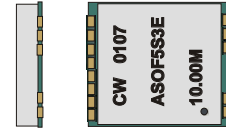


# CRYSTAL CONTROLLED OSCILLATORS

## SURFACE MOUNT STRATUM 3E HCMOS OCXO



### ASOF5S3E

#### DESCRIPTION

The Connor-Winfield ASOF5S3E is a 5V Surface Mount Oven Controlled Crystal Oscillator (OCXO) with an HCMOS output. The ASOF5S3E is designed for Stratum 3E applications requiring low jitter and tight frequency stability.

#### FEATURES

- SURFACE MOUNT PACKAGE
- FIXED FREQUENCY OCXO
- DESIGNED TO MEET STRATUM 3E REQUIREMENTS
- FREQUENCY STABILITY  $\pm 10$ ppb
- 5.0V OPERATION
- HCMOS OUTPUT
- TAPE AND REEL PACKAGING

#### ORDERING INFORMATION

ASOF5S3E - 10.00MHz

OCXO  
SERIES

CENTER  
FREQUENCY

ABSOLUTE MAXIMUM RATINGS

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-40	-	85	°C	
Supply Voltage	(Vcc)	-0.5	-	7	Vdc	

TABLE 1.0

OPERATING SPECIFICATIONS

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Center Frequency	(Fo)		10 12.8		MHz	1
Frequency Calibration		-4	-	4	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		0	-	70	°C	
Supply Voltage	(Vcc)	4.75	5.00	5.25	Vdc	
Frequency vs. Voltage Stability (+/-1%)		-0.5	-	0.5	ppb	6
Frequency vs. Load Stability (+/-20%)		-0.5	-	0.5	ppb	7
Power Consumption: Turn On		-	-	2.75	W	8
Power Consumption: Steady-State		-	-	1.50	W	8
Start-Up Time		-	-	500	mS	9
Warm Up		-100	-	100	ppb	10
2G Tip-over		-	5	-	ppb/G	
TDEV at 300 seconds		-	-	5	nS	11
TDEV at 40 seconds		-	-	1	nS	11

TABLE 2.0

HCMOS OUTPUT

CHARACTERISTICS

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		12	15	18	pF	12
Voltage (High)	(Voh)	Vcc-0.2V	-	-	Vdc	
Voltage (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	
Sub-Harmonics		-	-	-25	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		-	-	-135	dBc/Hz	
SSB Phase Noise at 10KHz offset		-	-	-140	dBc/Hz	

TABLE 3.0

RESTALLIZATION TIME

Off Time	Restabilization Time	NOTE
< 1 Hour	< 2 Hours	13
< 6 Hours	< 12 Hours	13
< 24 Hours	< 48 Hours	13
1 to 16 Days	48 Hours + 1/4 Off Time	13
> 16 Days	< 6 Days	13

TABLE 4.0

PACKAGE

CHARACTERISTICS

PARAMETER	CHARACTERISTICS
Package	Non-hermetic package consisting of an FR4 substrate with grounded metal cover.

TABLE 5.0

ENVIRONMENTAL

CHARACTERISTICS

PARAMETER	CHARACTERISTICS
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

TABLE 6.0

PROCESS

RECOMMENDATIONS

PARAMETER	RECOMMENDATIONS
Solder Reflow	The component solder used internal to this device has a melting point of 221°C. The peak temperature inside the device should be less than or equal to 220°C for a maximum of 10 seconds
Wash	Ultrasonic cleaning is not recommended.

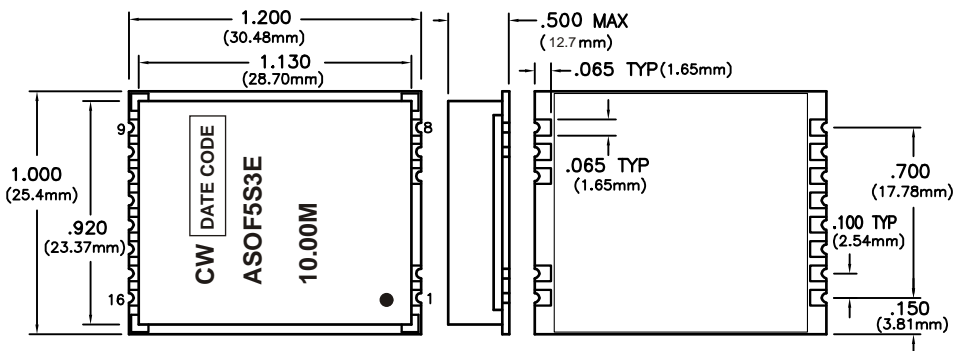
TABLE 7.0

#### Notes:

- 1) Labels will include the calibration frequency at the time of ship.
- 2) Initial calibration @ 25°C
- 3) Overall Frequency Stability, 0° to 70°C
- 4) After ten days of continuous operation.
- 5) Allen Variance: 1 second, 100 average.
- 6) Frequency vs. change in supply voltage.
- 7) Frequency vs. change in load.
- 8) Vcc = 5.0Vdc.
- 9) From Vcc=90% of final value. No more than 16 transitions at start-up before oscillator has started.
- 10) Measured @ 0°C, within 5 minutes, referenced one hour after turn-on.
- 11) At time of delivery.
- 12) HCMOS load.
- 13) For a given off time, the time required to meet daily aging, short-term stability and TDEV requirements.

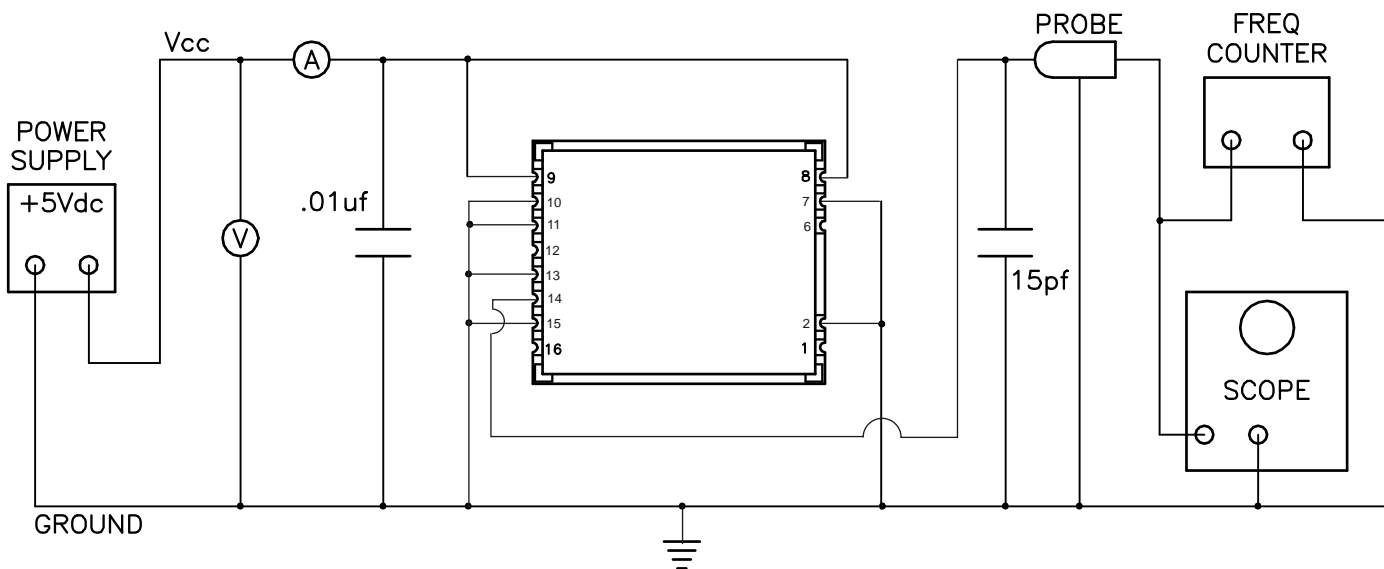
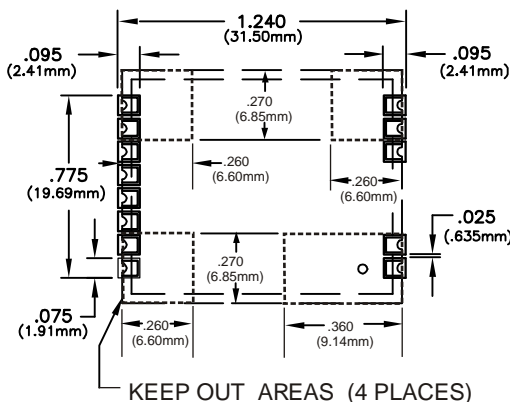
Specifications subject to change without notice.

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PIN	FUNCTION
1	N/C
2	GROUND
6	N/C
7	GROUND
8	Vcc
9	Vcc
10	GROUND
11	GROUND
12	N/C
13	GROUND
14	OUTPUT
15	GROUND
16	N/C

SUGGESTED PAD LAYOUT (TOP VIEW)



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