

# Surface Mount 3.3V HCMOS Stratum 3 Crystal Oscillator ASOF3S3



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## OCXO

The Connor-Winfield ASOF3S3 is a Fixed Frequency Surface Mount 3.3V Oven Controlled Crystal Oscillator (OCXO) with an HCMOS output. The ASOF3S3 is designed for Stratum 3 applications requiring tight frequency stability and low jitter.

### Features:

Fixed Frequency  
3.3V Operation  
Low Jitter <5pS RMS  
Temperature Stability  $\pm 0.25$  ppm  
Frequency Tolerance of  $\pm 4.6$  ppm Over Ten Years  
Surface Mount Package  
Tape & Reel Packaging

### Absolute Maximum Ratings

Parameter	Minimum	Nominal	Maximum	Units	Notes
Storage Temperature	-40	-	85	°C	
Supply Voltage (Vcc)	-0.5	-	4.5	Vdc	

### Operating Specifications

Parameter	Minimum	Nominal	Maximum	Units	Notes
Center Frequency (Fo)	-	12.800	-	MHz	
Frequency Calibration	-1.5	-	1.5	ppm	1
Frequency Stability	-0.25	-	0.25	ppm	2
Total Frequency Tolerance	-4.6	-	4.6	ppm	3
Operating Temp Range	0	-	70	°C	
Supply Voltage (Vcc)	3.135	3.3	3.465	Vdc	
Supply Current (Icc)	-	-	450	mA	
Jitter (BW=10 Hz to 20 MHz)	-	-	5	pS RMS	
Allan Variance (1 Sec.)	-	5.00 E-10	-		
SSB Phase Noise at 10 Hz offset	-	-75	-	dBc/Hz	
10 kHz offset	-	-130	-		
Start-Up Time: Oscillator	-	-	10	mS	
Warm Up Time	-	-	5	Minutes	4
TDEV at 1.0 Seconds	-	-	1	nS	
4.0 Seconds	-	-	2		

### HCMOS Output Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Load	-	-	15	pf	
Voltage: High (Voh)	2.6	-	-	Vdc	
Low (Vol)	-	-	0.4		
Current High (Ioh)	-4	-	-	mA	
Low (Iol)	-	-	4		
Duty Cycle at 50% of Vcc	45	50	55	%	
Rise/Fall Time 10% to 90%	-	-	6	nS	

### Package Characteristics

Specifications	ASOF3S3
Package	Surface Mount, Non-hermetic package consisting of an FR4 substrate with grounded metal cover

### Notes:

1. Initial calibration @ 25°C
2. Frequency vs temperature stability
3. Inclusive of calibration, operating temperature range, supply voltage change, shock and vibration, and 10 years aging.
4. Measured @ 25°C, within 5 minutes, the unit will be within  $\pm 0.1$  ppm of its reference frequency, measured after 30 minutes of continuous operation at a stable 25°C

### Ordering Information

ASOF3S3 - 12.80MHz

OCXO  
SERIES

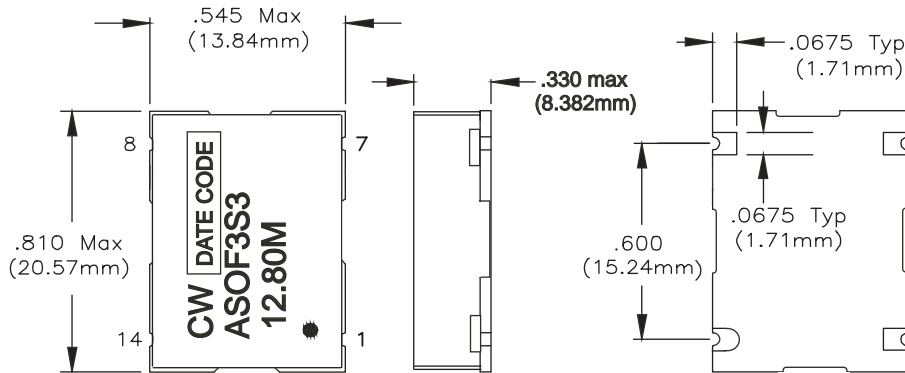
CENTER  
FREQUENCY

US Headquarters:  
630-851-4722  
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+353-62-472221

Bulletin	<b>Cx013</b>
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Revision	<b>02</b>
Date	<b>30 October 2001</b>

## Process Recommendations

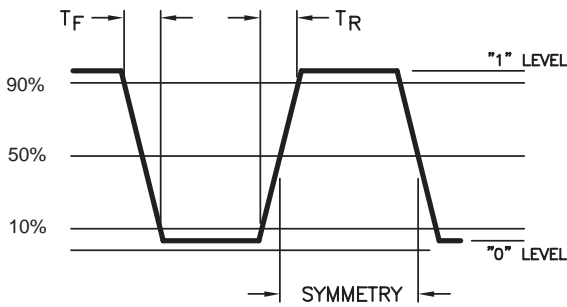
Specifications	ASOF3S3
Solder Reflow	The component solder used in internal to this device has a melting point of 221°C. The peak temperature inside the device should be less than or equal to 220°C for a maximum of 10 seconds.
Wash	Ultrasonic cleaning is not recommended



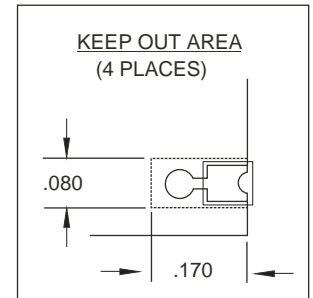
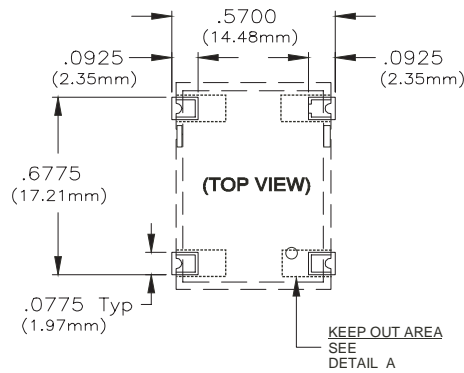
### Pin Connections

- 1: N/C
- 7: Ground (Case)
- 8: Output
- 14: Vcc

### OUTPUT WAVEFORM



### SUGGESTED PAD LAYOUT



KEEP OUT AREA  
(4 PLACES)

DETAIL A

### TEST DIAGRAM

