

CW3xx-Series 3.2x2.5mm LVCMOS Clock Oscillator

CONNOR WINFIELD



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Description:

The Connor-Winfield CW3xx series 3.2x2.5 mm, LVCMOS, Surface Mount, Crystal Controlled Oscillators (XO) are designed for applications requiring low jitter and tight frequency stability. The RoHS compliant surface mount package is designed for high-density mounting and is optimum for mass production.



Features:

Supply Voltages Available:
1.8V, 2.5V, 2.8V or 3.3V Operation
Frequency Tolerances Available:
± 25 ppm, ± 50 ppm or ± 100 ppm
Temperature Ranges Available:
-10 to 70°C or -40 to 85°C
LVCMOS Output Logic
Tri-State Enable/Disable Pad 1
Low Jitter: <1ps RMS
Ceramic Surface Mount Package
Tape and Reel Packaging
RoHS Compliant / Lead Free

Absolute Maximum Ratings

Parameter	Minimum	Nominal	Maximum	Units	Notes
Storage Temperature	-55	-	125	°C	
Supply Voltage (Vcc)	-0.5	-	5.0	Vdc	
Input Voltage	-0.5	-	Vcc + 0.5	Vdc	

Operating Specifications

Parameter	Minimum	Nominal	Maximum	Units	Notes
Output Frequency (Fo)	1.0	-	160	MHz	
Total Frequency Tolerance: (See Ordering Information on page 2.)					
Model CW3x1	-25	-	25	ppm	1
Model CW3x2	-50	-	50	ppm	1
Model CW3x3	-100	-	100	ppm	1
Operating Temperature Range: (See Ordering Information on page 2.)					
CW31x, CW32x, CW33x, CW34x	-10	-	70	°C	
CW35x, CW36x, CW37x, CW38x	-40	-	85	°C	
Supply Voltage (Vcc) (See Ordering Information on page 2.)					
Models CW31x, CW35x	1.710	1.8	1.890	Vdc	
Models CW32x, CW36x	2.375	2.5	2.625	Vdc	
Models CW34x, CW38x	2.660	2.8	2.940	Vdc	
Models CW33x, CW37x	3.135	3.3	3.465	Vdc	
Supply Current (Icc)					
1.8V Models	-	-	10	mA	
2.5V, 2.8V, 3.3v Models	-	-	20	mA	
Jitter:					
Period Jitter	-	3	5	ps RMS	
Integrated Phase Jitter	-	0.5	1	ps RMS	2
SSB Phase Noise					
@ 10 Hz offset	-	-60	-	dBc/Hz	
@ 100 Hz offset	-	-90	-	dBc/Hz	
@ 1 KHz offset	-	-125	-	dBc/Hz	
@ 10 KHz offset	-	-140	-	dBc/Hz	
@ 100 KHz offset	-	-145	-	dBc/Hz	
Start Up Time	-	2	5	ms	

Input Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Enable Input Voltage - (Vih)	70%Vcc	-	-	Vdc	3
Disable Input Voltage - (Vil)	-	-	30%Vcc	Vdc	3
Standby Current (Osc. Disabled)	-	-	10	uA	

LVCMOS Output Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Load	-	15	-	pF	
Voltage High (Voh)	90%Vcc	-	-	Vdc	
Voltage Low (Vol)	-	-	10%Vcc	Vdc	
Duty Cycle at 50% Level	45	50	55	%	
Rise / Fall Time: 10% to 90%	-	5	8	ns	

Notes:

- Includes calibration @ 25°C, frequency stability vs. change in temperature, supply voltage and load variations, shock and vibration and 10 years aging.
- BW = 12 KHz to Fo/2 MHz.
- When the oscillator is disabled the output is at high impedance. Output is enabled with no connection on pad 1.

Specifications subject to change without notice. All dimensions in inches. © Copyright 2010 The Connor-Winfield Corporation



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Revision **03**
Date **30 Sep 2011**



Ordering Information

CW3	3	3	-044.736M
Oscillator Type 3.2x2.5 mm LVCMOS Clock Oscillator Series	Supply Voltage and Temperature Range 1 = 1.8V, -10 to 70°C 2 = 2.5V, -10 to 70°C 3 = 3.3V, -10 to 70°C 4 = 2.8V, -10 to 70°C 5 = 1.8V, -40 to 85°C 6 = 2.5V, -40 to 85°C 7 = 3.3V, -40 to 85°C 8 = 2.8V, -40 to 85°C	Frequency Stability 1 = ±25 ppm 2 = ±50 ppm 3 = ±100 ppm	Output Frequency Frequency Format -xxx.xM Min.* -xxx.xxxxxxM Max* *Amount of numbers after the decimal point. M = MHz

Pad Connections

- 1: Tri-State E/D
- 2: Ground
- 3: Output
- 4: Supply Voltage (Vcc)

Example Part Numbers:
CW333-044.736M = 3.5x2.5mm package, 3.3 Vdc, -10 to 70°C, ±100 ppm, LVCMOS, Output Frequency 44.736 MHz
CW311-050.0M = 3.5x2.5mm package, 1.8 Vdc, -10 to 70°C, ±25 ppm, LVCMOS, Output Frequency 50 MHz

Enable / Disable Function

Function: (Pin 1)	Output:
High or Open: (Voh)	Enabled
Low: (Vol)	Disabled (High Impedance)

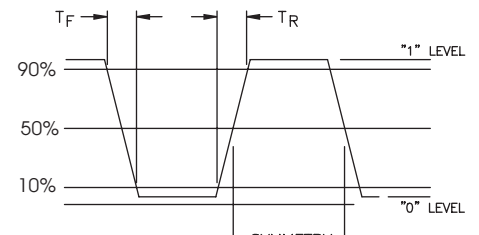
Package Characteristics

Package	Hermetically sealed ceramic package and metal cover
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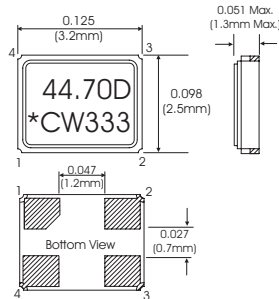
Environmental Characteristics

Vibration:	Vibration per Mil Std 883E Method 2007.3 Test Condition A.
Shock:	Mechanical Shock per Mil Std 883E Method 2002.4 Test Condition B.
Soldering Process:	RoHS compliant lead free. See soldering profile on page 2.

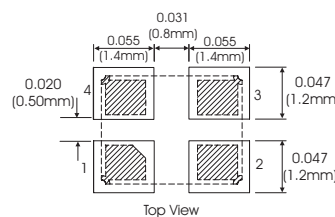
LVCMOS Output Waveform



Package Layout

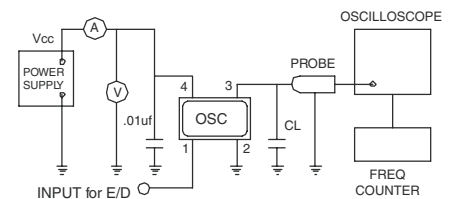


Suggested Pad Layout

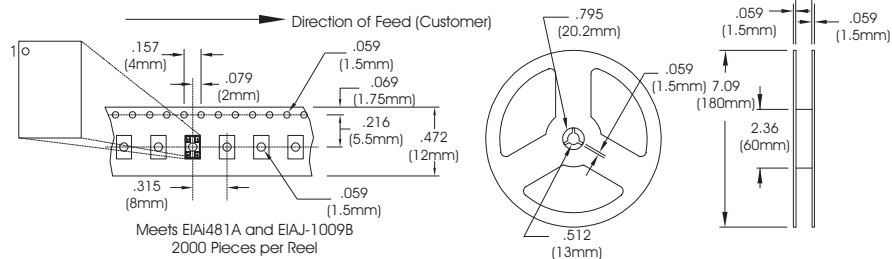


Dimensional Tolerance: ±0.005 (±0.127mm)

Test Circuit



Tape and Reel Dimensions



Solder Profile

