

5x7mm Surface Mount LVDS Clock Oscillator

CONNOR WINFIELD



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Description:

The Connor-Winfield LMxxx - Series are 5x7mm Surface Mount, LVDS, Fixed Frequency Crystal Controlled Oscillator (XO). The LMxxx - Series are designed for applications requiring tight frequency stability, wide temperature range, and low jitter. Operating at 2.5 or 3.3 Vdc supply voltage, the LMxxx - Series provides LVDS Differential Outputs with an enable / disable function. The design utilizes PLL multiplication to produce a high frequency output from a low frequency fundamental crystal.



Features:

Model LMxxx - Series

5 x7mm Surface Mount Package
2.5 or 3.3 Vdc Operation
LVDS Differential Outputs
Frequency Stabilities Available:
+/-20 ppm, +/-25 ppm, +/-50 ppm or +/-100 ppm
Temperature Ranges Available:
0 to 70°C, -40 to 85°C, 0 to 85°C or -20 to 70°C
Low Jitter <1ps RMS
Tri-State Enable/Disable on Pad 1
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	-	4.6	Vdc	
Input Voltage	-0.5	-	Vcc + 0.5	Vdc	

Operating Specifications

Parameter	Minimum	Nominal	Maximum	Units	Notes
Output Frequency (Fo)	98	-	670	MHz	1
Total Frequency Tolerance	(See Ordering Information or Model Matrix for full part number)				
Model LMx4x	-20	-	20	ppm	2
Model LMx1x	-25	-	25	ppm	2
Model LMx2x	-50	-	50	ppm	2
Model LMx3x	-100	-	100	ppm	2
Operating Temperature Range	(See Ordering Information or Model Matrix for full part number)				
Model LM1xx	0	-	70	°C	
Model LM2xx	-40	-	85	°C	
Model LM3xx	0	-	85	°C	
Model LM4xx	-20	-	70	°C	
Supply Voltage (Vcc)	(See Ordering Information or Model Matrix for full part number)				
Model LMxx2	2.375	2.5	2.625	Vdc	
Model LMxx3	3.135	3.3	3.465	Vdc	
Supply Current (Icc)	-	70	75	mA	
Jitter:					
Period Jitter	-	3.0	5.0	ps RMS	
Integrated Phase Jitter	-	0.6	1.0	ps RMS	
SSB Phase Noise (Fo = 155.52 MHz)					
@ 10 Hz offset	-	-40	-	dBc/Hz	
@ 100 Hz offset	-	-75	-	dBc/Hz	
@ 1 KHz offset	-	-95	-	dBc/Hz	
@ 10 KHz offset	-	-110	-	dBc/Hz	
@ 100 KHz offset	-	-115	-	dBc/Hz	
Sub-Harmonics	-	-60	-50	dBc	
Start-Up Time	-	-	2	ms	

Enable / Disable Input Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Enable Input Voltage - (High) - (Vih)	70%Vcc	-	-	Vdc	3
Disable Input Voltage - (Low) - (Vil)	-	-	30%Vcc	Vdc	3

LVDS Output Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Load	-	100	-	Ohm	
Output Differential Voltage (Vod)	250	-	450	mV	4
Duty Cycle at 50% Level	45	50	55	%	5
Rise / Fall Time: 20% to 80%	-	0.3	0.7	ns	

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.

Notes:

1. All output frequencies may not be available, please contact the factory with your output frequency requirements.
2. Includes calibration @ 25°C, frequency stability vs. change in temperature, supply voltage and load variations, shock and vibration and 20 years aging.
3. When the oscillator is disabled the outputs are at high impedance. Outputs are enabled with no connection on E/D pad 1.
4. Vod measured with a 100 ohm resistor between the true output and the complementary output.
5. Duty cycle measured at 50% of output voltage swing.

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



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