

1.8V LVMOS Clock Oscillator

CONNOR WINFIELD



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Description:

The Connor-Winfield 51x1 and 52x1 Series Surface Mount LVMOS, Fixed Frequency Crystal Controlled Oscillator (XO) are designed for applications requiring tight frequency stability, wide temperature range and low jitter. Operating at 1.8V supply voltage, the 5xxx. Provides a LVMOS Output with a Tri-state enable / disable function. The surface mount package is designed for high-density mounting and is optimum for mass production.



Features:

Model 5xx1 - Series

5.0 x7.0mm Surface Mount Package
1.8V Operation
LVMOS Output
Frequency Stabilities Available:
+/-25ppm, +/-50ppm or +/-100ppm
Temperature Ranges Available:
-10 to 70°C or -40 to 85°C,
Low Jitter <1.0 ps RMS
Tri-State Enable/Disable
Enable/Disable Time 100 ns
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	-	3.6	Vdc	
Input Voltage	-0.5	-	Vcc + 0.5	Vdc	

Operating Specifications

Parameter	Minimum	Nominal	Maximum	Units	Notes
Output Frequency (Fo)	30	-	70	MHz	
Total Frequency Tolerance	(See Ordering Information for full part number)				
Model 5x1x	-25	-	25	ppm	1
Model 5x2x	-50	-	50	ppm	1
Model 5x3x	-100	-	100	ppm	1
Operating Temperature Range					
Model 51xx	-10	-	70	°C	
Model 52xx	-40	-	85	°C	
Supply Voltage (Vcc)	1.710	1.8	1.890	Vdc	
Supply Current (Icc)	-	15	30	mA	
Jitter:					
Period Jitter	-	3.0	5.0	ps RMS	
Integrated Phase Jitter (BW = 12 KHz to 20 MHz)	-	0.5	1.0	ps RMS	
Start-Up Time	-	-	10	ms	

Input Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Enable Input Voltage - (High) - (Vih)	70%Vcc	-	-	Vdc	2
Disable Input Voltage - (Low) - (Vil)	-	-	30%Vcc	Vdc	2
Enable Time	-	-	100	ns	3
Disable Time	-	-	100	ns	3

LVMOS Output Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Load	-	15	-	pF	
Voltage High (Voh)	90%Vcc	-	-	Vdc	
Low (Vol)	-	-	10%Vcc	Vdc	
Duty Cycle at 50% Level	45	50	55	%	
Rise / Fall Time: 10% to 90%					
30 to 50 MHz	-	-	7	ns	
>50 MHz	-	-	5	ns	

Ordering Information

5	2	3	1	- 070.0M
Type LVMOS Low Voltage Clock Series 5x7 mm	Temperature Range 1 = -10 to 70°C 2 = -40 to 85°C	Frequency Stability 1 = ±25 ppm 2 = ±50 ppm 3 = ±100 ppm	Supply Voltage 1 = 1.8 Vdc	Output Frequency Frequency Format -xxx.xM Min -xxx.xxxxxxM Max *Amount of numbers after the decimal point. M = MHz

Example: Part Number

5231-070.0M = 5x7mm package, LVMOS Output,
-40 to 85, +/-100 ppm, 1.8 Vdc, E/D Pad 1, Output Frequency 70.0 MHz



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Notes:

1. Includes calibration @ 25°C, frequency stability vs. change in temperature, supply voltage and load variations, shock and vibration and 20 years aging.
2. When the oscillator is disabled the output is at high impedance. Output is enabled with no connection on E/D pad.
3. The internal oscillator circuit continues to run when the output is disabled.

Package Characteristics

Package Hermetically sealed ceramic package and metal cover

Environmental Characteristics

Vibration: Vibration per Mil Std 883E Method 2007.3 Test Condition A.

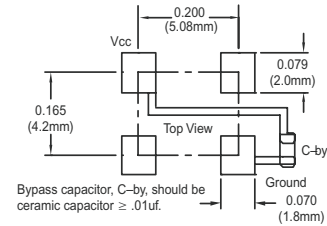
Shock: Mechanical Shock per Mil Std 883E Method 2002.4 Test Condition B.

Soldering Process; RoHS compliant lead free. See soldering profile on page 2.

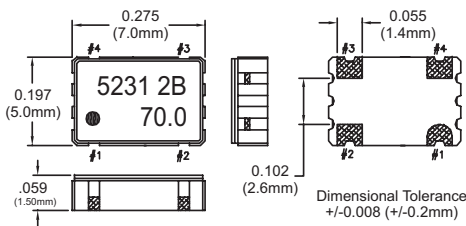
Enable / Disable Function

Function: Output
Low: Disabled (High Impedance)
High or Open: Enabled

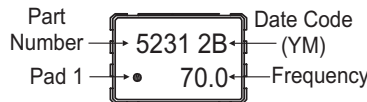
Suggested Pad Layout



Package Outline



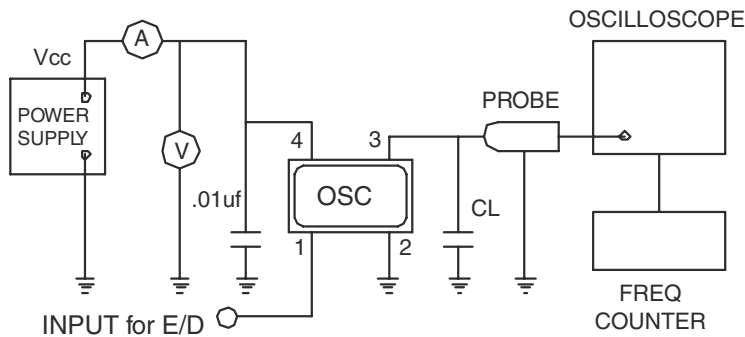
Marking Information



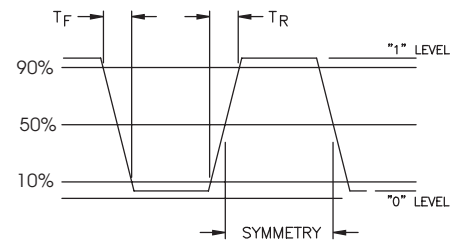
Pad Connections

- 1: Enable / Disable
- 2: Ground
- 3: Output Q
- 4: Supply Voltage (Vcc)

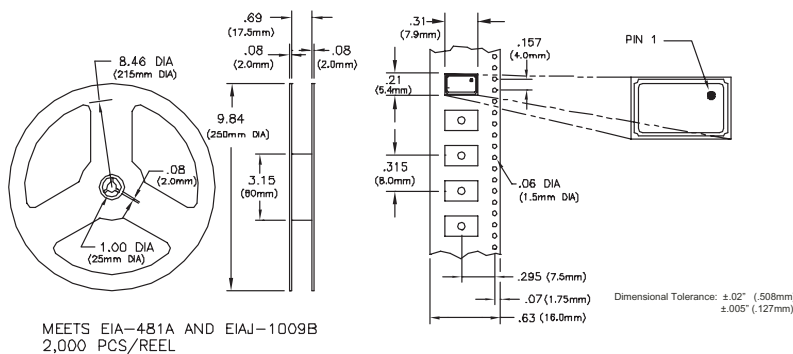
Test Circuit



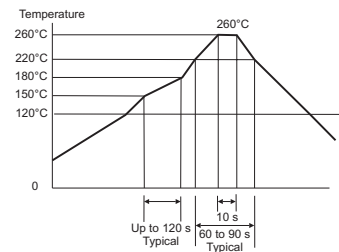
Output Waveform



Tape and Reel Dimensions



Solder Profile



Meets IPC/JEDEC J-STD-020C

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