

PECL VCXO Specification Model VPHD61BT

CONNOR WINFIELD



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Description:

Connor-Winfield's model VPHD61BT is a 5.0 Vdc, Voltage Controlled Crystal Oscillator (VCXO) in a 9x14mm surface mount package. The VPHD61BT is designed for use in PLL systems requiring low jitter and tight frequency stability.



Features:

Model: VPHD61BT
5.0 Vdc Operation
9x14 mm SM Package
Frequency Stability: +/-30 ppm
Temperature Range: -40 to 85°C
PECL Differential Outputs
Enable / Disable Function
RoHS Compliant / Lead Free

Absolute Maximum Ratings

Parameter	Minimum	Nominal	Maximum	Units	Notes
Storage Temperature	-55	-	125	°C	
Supply Voltage (Vcc)	-0.5	-	7.0	Vdc	
Input Voltage	-0.5	-	Vcc+0.5	Vdc	

Operating Specifications

Parameter	Minimum	Nominal	Maximum	Units	Notes
Center Frequency: (Fo)	-	100.0	-	MHz	
Frequency Stability vs. Temp.:	-30	-	30	ppm	1
Frequency Stability vs. Aging:	-5	-	5	ppm/year	
Operating Temperature Range:	-40	-	85	°C	
Supply Voltage: (Vcc)	4.75	5.00	5.25	Vdc	±5%
Supply Current (Vcc = 5.0 Vdc)	-	-	70	mA	

Input Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Control Voltage Range (Vc)	0.5	2.5	4.5	V	
Frequency Pullability @ 25 °C	±100	-	±175	ppm	2
Absolute Pull Range (APR)	±30	-	-	ppm	3
Monotonic Linearity	-	-	±10	%	
Slope	Positive				
Pin 1 Resistance to Ground	10M	-	-	Ohm	
Modulation Bandwidth (-3dB)	10	-	-	KHz	
Enable / Disable Voltage (Pad 2)					
Enable Voltage (Low)	-	-	3.4	Vdc	
Disable Voltage (High)	3.87	-	-	Vdc	

PECL Output Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Load	-	50	-	Ohms	4
Voltage (High) Voh	3.87	-	-	V	
Voltage (Low) Vol	-	-	3.40	V	
Duty Cycle at 50% Vcc	45	50	55	%	
Rise / Fall Time 20% to 80%	-	-	1	ns	
Integrated Phase Jitter	-	0.7	1	ps RMS	5
Period Jitter	-	-	5	ps RMS	
SSB Phase Noise					
100Hz offset	-	-90	-	dBc/Hz	
1KHz offset	-	-120	-	dBc/Hz	
10KHz offset	-	-140	-	dBc/Hz	
100KHz offset	-	-142	-	dBc/Hz	
Sub Harmonics	-	-	-60	dBc	

Package Characteristics

Package FR4 substrate, metal cover, case ground.

Ordering Information

VPHD61BT-100.0M

Notes:

- Control Voltage = 2.5V.
- Referenced to Fo.
- Absolute Pull Range (APR) is the minimum guaranteed pull range of the VCXO under all conditions over lifetime operation including calibration @ 25°C, frequency stability vs. the change in temperature, frequency vs. change in supply voltage, frequency vs. change in load, shock and vibration and 10 years aging. The APR is referenced to (Fo).
- Output terminated into 50 ohms into Vcc - 2.0Vdc or Thevenin equivalent.
- (BW=12KHz to 20 MHz)

Specifications subject to change without notice. All dimensions in inches. © Copyright 2011 The Connor-Winfield Corporation



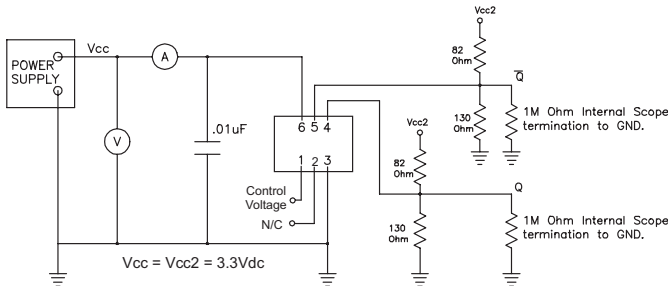
Bulletin **Vx636**
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Revision **03**
Date **30 Sep 2011**



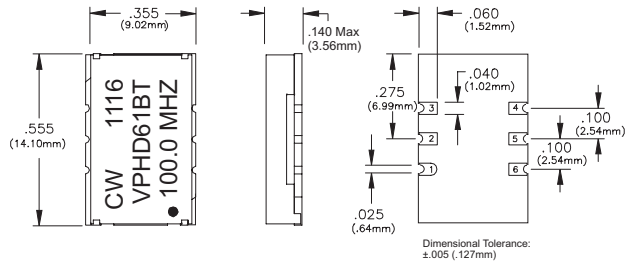
Environmental Characteristics

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
Wash	Ultrasonic cleaning is not recommended

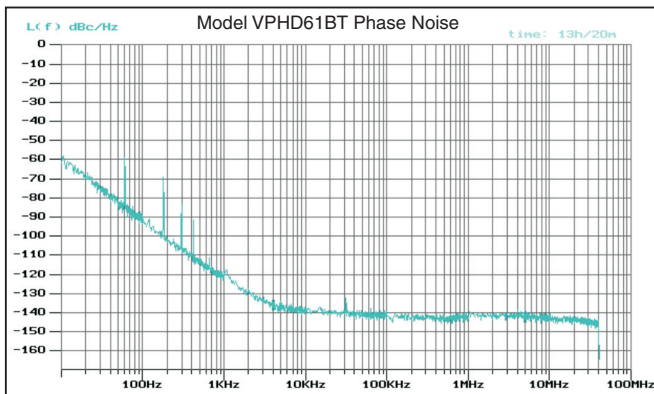
Test Circuit



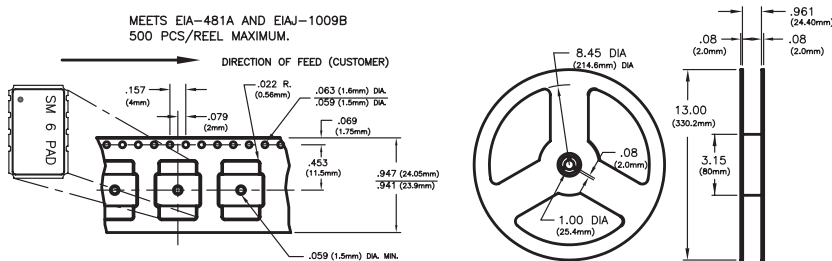
Package Outline



Typical Phase Noise



Tape and Reel Information



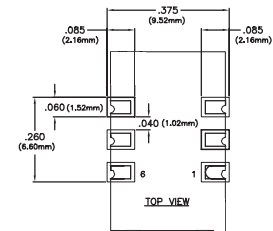
Pad Connections

1. Voltage Control (Vc)
2. Enable / Disable
3. Ground (Case)
4. Q Output
5. Q-bar Output
6. Supply Voltage (Vcc)

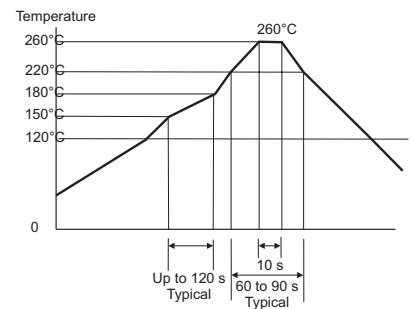
Enable / Disable Function

Enable /Disable (Pad 2)	Output
No Connection	Enabled
Low	Enabled
High	Disabled

Suggested Pad Layout



Solder Profile



Output Waveform

