

LVPECL VCXO Specification

CONNOR WINFIELD



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Description:

The Connor-Winfield VT762 is a 5x7mm, 3.3 Vdc LVPECL, Surface Mount, Voltage Controlled Crystal Oscillator (VCXO) designed for phase lock loop 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:

Model: VT762

3.3V Operation
Absolute Pull Range: ± 50 ppm APR
Temperature Range: -40 to 85°C
Tri-State Enable/Disable Pad 2
Low Jitter: 0.2ps RMS Typical
Differential LVPECL Outputs
5x7mm SMT 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	-	4.6	Vdc	
Control Voltage (Vc)	-0.5	-	Vcc + 0.5	Vdc	

Operating Specifications

Parameter	Minimum	Nominal	Maximum	Units	Notes
Center Frequency: (Fo)	25	-	204.8	MHz	
Operating Temp Range:	-40	-	85	°C	
Supply Voltage: (Vcc)	3.135	3.3	3.465	Vdc	
Supply Current :(Icc)	-	40	60	mA	
Jitter:					
Period Jitter	-	3	5	ps RMS	
Integrated Phase Jitter	-	0.2	0.5	ps RMS	1
Typical SSB Phase Noise Fo = 156.25 MHz					
@ 10 Hz offset	-	-60	-	dBc/Hz	
@ 100 Hz offset	-	-90	-	dBc/Hz	
@ 1 KHz offset	-	-120	-	dBc/Hz	
@ 10 KHz offset	-	-140	-	dBc/Hz	
@ 100 KHz offset	-	-145	-	dBc/Hz	
@ 1 MHz offset	-	-150	-	dBc/Hz	
Start-Up Time	-	-	10	ms	

Input Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Control Voltage Range (Vc)	0.3	1.65	3.0	Vdc	
Pull Slope @ 156.25 MHz Vc=1.65V	-	70	-	ppm/V	
Absolute Pull Range (APR)	± 50	-	-	ppm	2
Monotonic Linearity	-10	-	10	%	
Input Impedance	-	1.5M	-	Ohm	
Modulation Bandwidth (3dB)	20	-	-	KHz	
Enable Input Voltage (High) (Vih)	0.7Vcc	-	-	V	3
Disable Input Voltage (Low) (Vil)	-	-	0.3Vcc	V	

LVPECL Output Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Load	-	50	-	Ohm	4
Voltage (High) Voh	2.275	-	-	V	
(Low) Vol	-	-	1.68	V	
Duty Cycle at 50% Level	45	50	55	%	
Rise / Fall Time: 20% to 80%	-	0.5	1.0	ns	

Package Characteristics

Package Hermetically sealed ceramic surface mount package with case ground metal cover

Notes:

- BW= 12 KHz to 20 MHz,
- 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). Positive transfer function.
- Oscillator output is enabled with no connection on pad 2. When the oscillator is disabled the differential outputs are at a high impedance state.
- Output terminated into 50 ohms into Vcc – 2.0 Vdc or Thevenin equivalent.

Specifications subject to change without notification. See Connor-Winfield's website for latest revision. Not intended for life support applications.

All dimensions in inches. © Copyright 2014 The Connor-Winfield Corporation



Bulletin **VX646**
Page **1 of 2**
Revision **01**
Date **30 Jan 2014**



Ordering Information

VT7	6	2	156.25M
Type: LVPECL VCXO 5x7 mm Package	Temperature Range 6 = -40 to 85°C	APR and Supply Voltage 2 = ±50 ppm APR Vcc = 3.3 Vdc	Output Frequency - Frequency Format -xxx.xM Min.* -xxx.xxxxxM Max.* * Amount of numbers after the decimal point. M = MHz

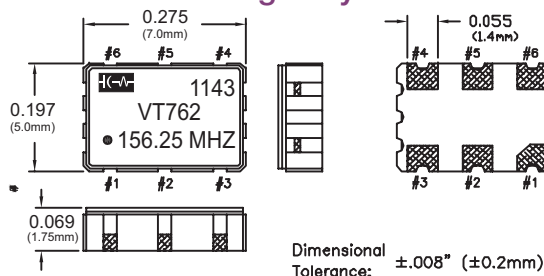
Example Part Number:

VT762-156.25M = 5x7mm, LVPECL, VCXO, 3.3 Vdc, -40 to 85°C, ±50 ppm APR, Output Frequency 156.25 MHz.

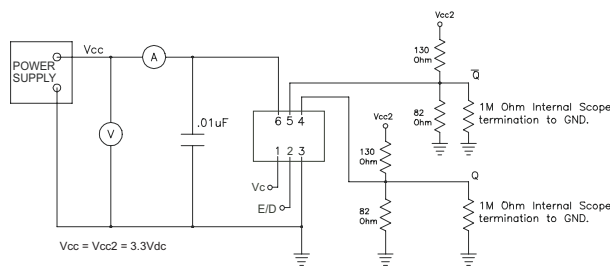
Environmental Characteristics

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.

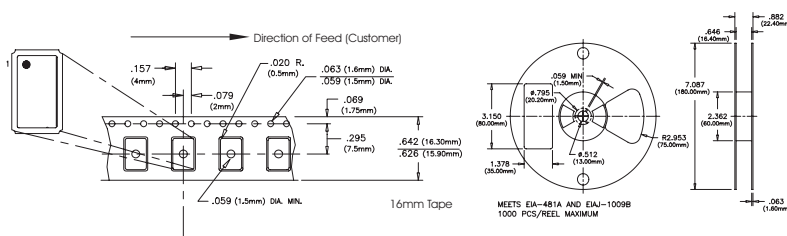
Package Layout



Test Circuit



Tape and Reel Dimensions



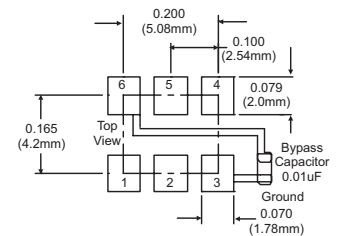
Pad Connections

- 1: Control Voltage (Vc)
- 2: Enable / Disable
- 3: Ground
- 4: Output Q
- 5: Output \bar{Q}
- 6: Supply Voltage (Vcc)

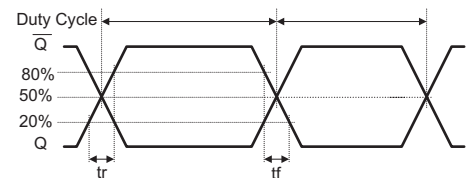
Enable / Disable Function

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

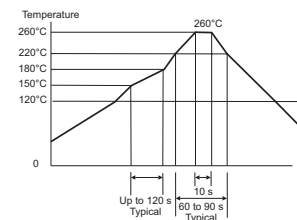
Suggested Pad Layout



Output Waveform



Solder Profile



Meets IPC/JEDEC J-STD-020C