

3.3V Surface Mount Oscillator VPLD54TEM



VCXO

Features:

Low Profile, Surface Mount Package
3.3V Operation
Low Jitter <1pS RMS
Total Frequency Tolerance ± 20 ppm
Temperature Range 0° to 70°C
Differential LVPECL Outputs
Enable / Disable Function

The Connor-Winfield VPLD54TEM is a 3.3V Voltage Controlled Crystal Oscillator (VCXO) with Differential LVPECL outputs and Enable/Disable function. The VPLD54TEM is designed for use with PLL systems in SONET/SDH systems requiring low jitter and tight stability. No uses of multiplication schemes are used in this oscillator design.

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Aurora, Illinois 60505
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Absolute Maximum Ratings

Parameter	Minimum	Nominal	Maximum	Units	Notes
Storage Temperature	-40	-	85	°C	
Supply Voltage (Vcc)	-0.5	-	7.0	Vdc	
Control Voltage (Vc)	-0.5	-	7.0	Vdc	

Operating Specifications

Parameter	Minimum	Nominal	Maximum	Units	Notes
Center Frequency (Fo)	-	400.0 625.0 622.08 644.531250	-	MHz	
Total Frequency Tolerance	-20	-	20	ppm	1
Operating Temperature Range	0	-	70	°C	
Supply Voltage (Vcc)	3.135	3.3	3.465	Vdc	
Supply Current (Icc)	-	-	100	mA	
Jitter: (BW=10 Hz to 20 MHz) (BW=12 kHz to 80 MHz)	-	-	5 1	ps RMS	
SSB Phase Noise @ 100 Hz offset @ 1 kHz offset @ 10 kHz offset @ 100 kHz offset	-	-60 -90 -130 -135	-	dBc/Hz	

Input Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Control Voltage Range (Vc)	0.3	1.65	3.0	Vdc	
Absolute Pull Range (APR)	± 25	-	-	ppm	2
Monotonic Linearity	-10	-	10	%	
Input Impedance	-	50K	-	Ohm	
Modulation Bandwidth (3dB)	10	-	-	kHz	
Enable Input Voltage (Low) (Vil) Disable Input Voltage (High) (Vih)	- 2.275	- -	1.68 -	Vdc	3

Low Voltage PECL Output Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Load	-	-	50	Ohms	4
Voltage: High (Voh) Low (Vol)	2.275 -	- -	- 1.68	Vdc	
Duty Cycle at 50% Level	45	50	55	%	

Notes:

- Inclusive of calibration @25°C, frequency stability vs. temperature, supply and load variations, shock vibration and aging for ten years. Control voltage (Vc) = 1.65 Vdc.
- Control voltage for (Fo) = 1.65 Vdc Typical. Positive Transfer Function
- When oscillator is disabled the true output is in a low state (Vol) and the complementary output is in the high state (VoH)
- 50 ohm termination into Vcc-2V or Thevein equivalent.

Ordering Information

VPLD54TEM - 622.08 MHz

VCXO
SERIES

CENTER
FREQUENCY

US Headquarters:
630-851-4722
European Headquarters:
+353-61-472221

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Revision **02**
Date **14 January 2003**

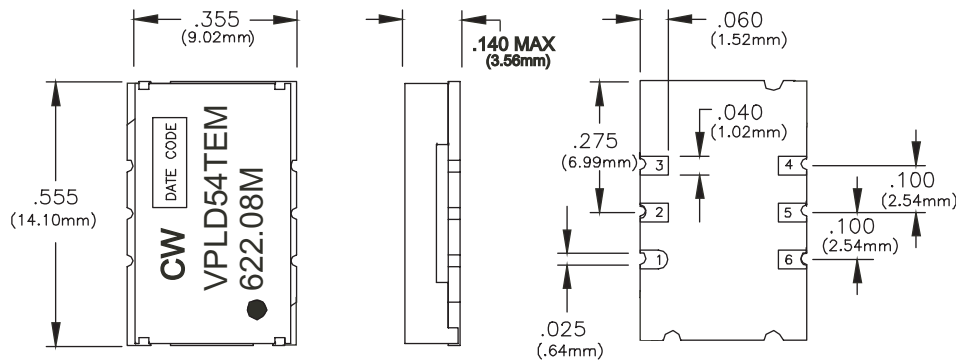


Process Recommendations

Solder Reflow	The component solder used internal to this device has a melting point of 221°C. The peak temperature inside the device should be less than or equal to 220°C for a maximum of 10 seconds.
Wash	Ultrasonic cleaning is not recommended

Package Characteristics

Package	Non-hermetic package consisting of an FR4 substrate with grounded metal cover
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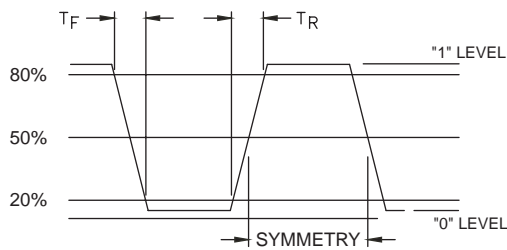


Pin Connections

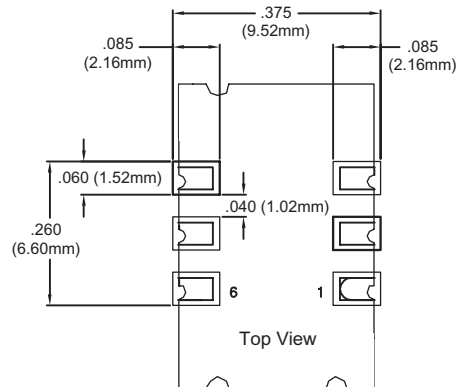
- 1: Control Voltage
- 2: Enable / Disable
- 3: Ground
- 4: Q Output
- 5: \bar{Q} Output
- 6: Vcc

Dimensional Tolerance:
±005 (.127mm)

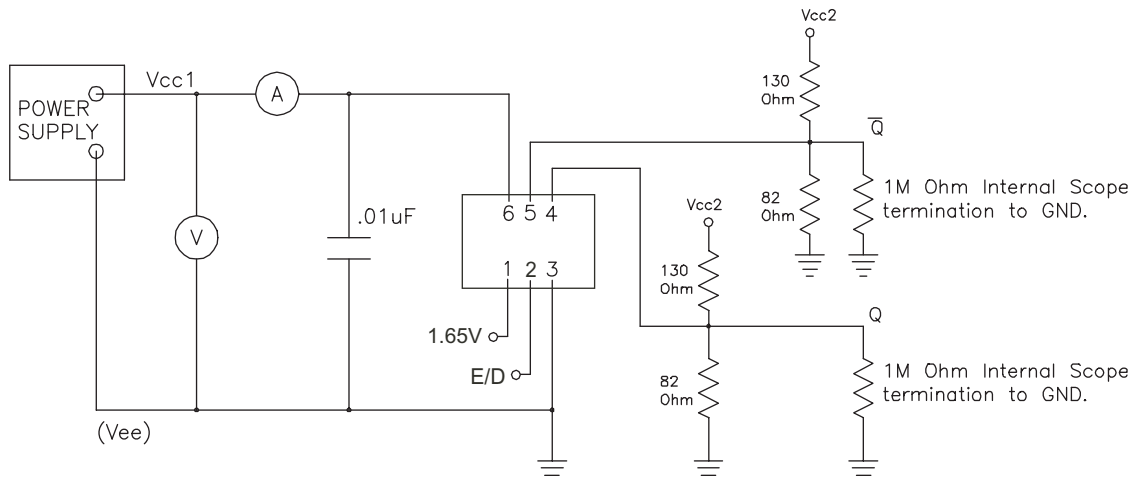
Output Waveform



Suggested Pad Layout



Test Circuit



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