

CRYSTAL CONTROLLED OSCILLATORS

3.3V SURFACE MOUNT LVPECL VCXO OSCILLATOR



VPLD64TJ2

ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-55	-	125	°C	
Supply Voltage	(Vcc)	-0.5	-	7.0	Vdc	
Control Voltage	(Vc)	-0.5	-	Vcc+0.5	Vdc	

OPERATING SPECIFICATIONS

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Center Frequency	(Fo)		153.600 155.520 156.250 166.629 167.330		MHz	
Frequency Stability		-20	-	20	ppm	1
Operating Temperature Range		-40	-	85	°C	
Supply Voltage	(Vcc)	3.135	3.3	3.465	Vdc	
Supply Current	(Icc)	-	-	80	mA	
Jitter (BW=10Hz to 20MHz)		-	-	5	ps rms	
Jitter (BW=12kHz to 20MHz)		-	-	1	ps rms	
SSB Phase Noise at 100Hz offset		-	-80	-	dBc/Hz	
SSB Phase Noise at 1KHz offset		-	-100	-	dBc/Hz	
SSB Phase Noise at 10KHz offset		-	-130	-	dBc/Hz	
SSB Phase Noise at 100KHz offset		-	-135	-	dBc/Hz	

INPUT CHARACTERISTICS

TABLE 3.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Control Voltage Range	(Vc)	0.3	1.65	3.0	Vdc	
Frequency Pullability @25°C		±50	-	±150	ppm	2
Absolute Pull Range (APR)		+/-30	-	-	ppm	3
Monotonic Linearity		-10	-	10	%	
Input Impedance		-	50K	-	Ohm	
Modulation Bandwidth (3dB)		10	-	-	KHz	
Enable Input Voltage (Low)	(Vil)	-	-	1.68	Vdc	4
Disable Input Voltage (High)	(Vih)	2.275	-	-	Vdc	4

LVPECL OUTPUT CHARACTERISTICS

TABLE 4.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	50	Ohms	5
Voltage (High)	(Voh)	2.275	-	-	Vdc	
(Low)	(Vol)	-	-	1.68	Vdc	
Duty Cycle at 50% Level		45	50	55	%	
Rise / Fall Time 20% to 80%		-	-	1.0	nS	

PACKAGE CHARACTERISTICS

TABLE 5.0

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

TABLE 6.0

Soldering Process	RoHS 5/6 Compliant, see solder profile page 2.
Wash	Ultrasonic cleaning is not recommended.

DESCRIPTION

The Connor-Winfield VPLD64TJ2 is a Voltage Controlled Crystal Oscillator (VCXO) with Differential LVPECL outputs. Based on a fundamental crystal design, the VPLD64TJ2 is designed for phased lock loop applications requiring low jitter and tight frequency stability.

FEATURES

- 3.3V OPERATION
- LOW JITTER <1ps RMS
- FREQUENCY STABILITY: ±20ppm
- TEMPERATURE RANGE: -40 to 85°C
- DIFFERENTIAL LVPECL OUTPUTS
- SURFACE MOUNT PACKAGE
- TAPE AND REEL PACKAGING
- RoHS 5/6 COMPLIANT

ORDERING INFORMATION

VPLD64TJ2 - 155.52M

VCXO
SERIES

CENTER
FREQUENCY

Specifications subject to change without notice.

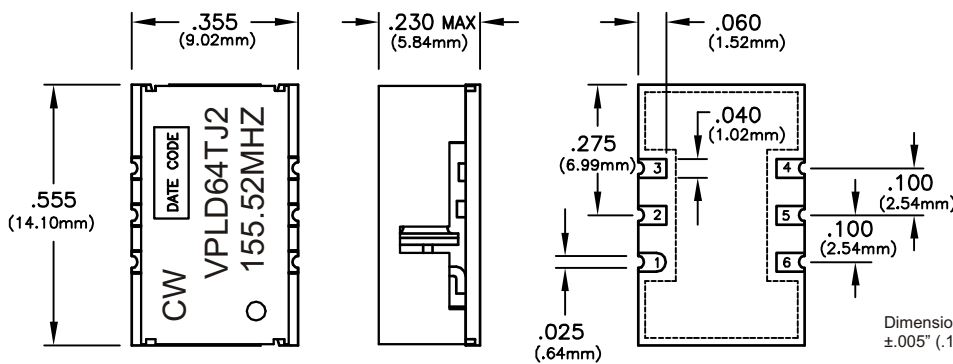


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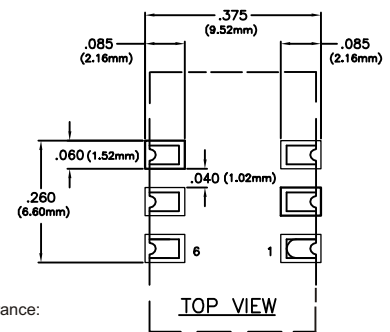
Notes

- 1.0 Inclusive of calibration, frequency stability vs. temperature, supply and load variations, shock vibration and aging for 15 years. Control Voltage @ 1.65V.
- 2.0 Referenced to Fo at T=25°C Positive slope.
- 3.0 Absolute pull range (APR) is the minimum guaranteed pull range of the VCXO under all conditions over lifetime operation (15 years). The APR is referenced to Fo. Positive Slope.
- 4.0 Outputs are enabled with no connection on pad 2. When oscillator is disabled the true output is in a low state (Vol) and the complementary output is in the high state (VoH)
- 5.0 Output terminated into 50 ohms into Vcc – 2.0Vdc or Thevenin equivalent.

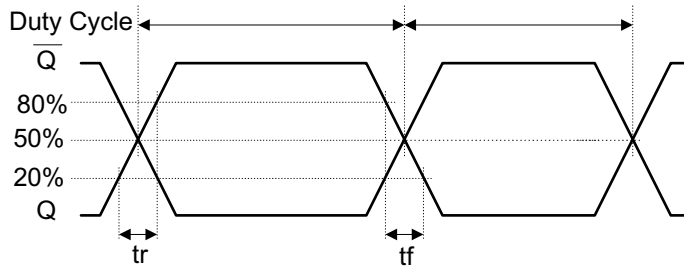
Package Outline



Suggested Pad Layout



Output Waveform

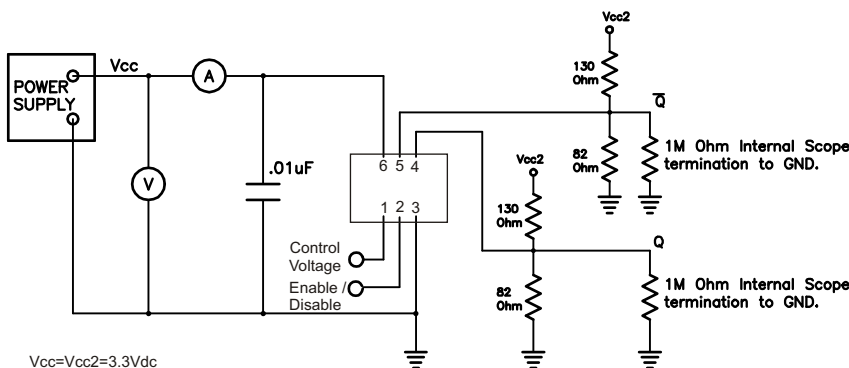


Pad Connections

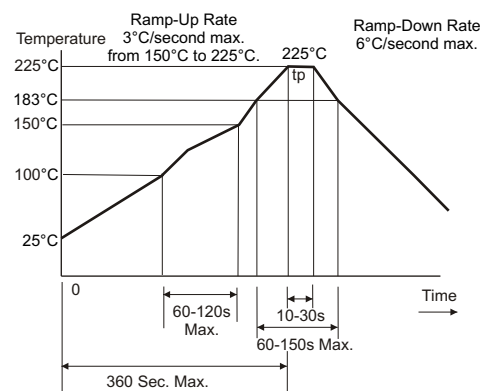
TABLE 7.0

Pad	Function
1	Control Voltage
2	Enable / Disable
3	Ground
4	Q Output
5	Q-bar Output
6	Vcc

Test Circuit



Solder Profile



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