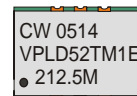


CRYSTAL CONTROLLED OSCILLATORS

3.3V SURFACE MOUNT VCXO OSCILLATOR



VPLD52TM1E

DESCRIPTION

The Connor-Winfield VPLD52TM1E is a 3.3V Voltage Controlled Crystal Oscillator (VCXO) with LVPECL Differential outputs. The VPLD52TM1E is designed for use with PLL systems in SONET/SDH systems requiring low jitter and tight stability.

FEATURES

- 3.3V OPERATION
- LVPECL DIFFERENTIAL OUTPUTS
- ENABLE / DISABLE FUNCTION
- LOW JITTER <1ps RMS
- FREQUENCY STABILITY: ±50ppm
- APR: ±100ppm MINIMUM
- TEMPERATURE RANGE: 0 to 70°C
- SURFACE MOUNT PACKAGE
- TAPE AND REEL PACKAGING

ORDERING INFORMATION

VPLD52TM1E - 212.5MHz

VCXO
SERIES

CENTER
FREQUENCY

Specifications subject to change without notice.

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ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-40	-	85	°C	
Supply Voltage	(Vcc)	-0.5	-	7.0	Vdc	
Control Voltage	(Vc)	-0.5	-	7.0	Vdc	

OPERATING SPECIFICATIONS

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Center Frequency	(Fo)	16.384	-	225	MHz	
Frequency Stability		-50	-	50	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=10kHz to 20MHz)		-	-	5	ps rms	
Jitter (BW=12kHz to 80MHz)		-	-	1	ps rms	
SSB Phase Noise at 10Hz offset		-	-60	-	dBc/Hz	
SSB Phase Noise at 100Hz offset		-	-90	-	dBc/Hz	
SSB Phase Noise at 1KHz offset		-	-100	-	dBc/Hz	
SSB Phase Noise at 10KHz offset		-	-135	-	dBc/Hz	
SSB Phase Noise at 100KHz offset		-	-140	-	dBc/Hz	

INPUT CHARACTERISTICS

TABLE 3.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Control Voltage Range	(Vc)	0.3	1.65	3.0	Vdc	
Absolute Pull Range (APR)		+/-100	-	-	ppm	2
Monotonic Linearity		-10	-	10	%	
Input Impedance		-	50K	-	Ohm	
Modulation Bandwidth (3dB)		10	-	-	KHz	
Enable Input Voltage (Low)	(Vil)	-	-	1.68	Vdc	3
Disable Input Voltage (High)	(Vih)	2.275	-	-	Vdc	3

LOW VOLTAGE PECL OUTPUT CHARACTERISTICS

TABLE 4.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	50	Ohms	4
Voltage (High)	(Voh)	2.275	-	-	Vdc	
(Low)	(Vol)	-	-	1.68	Vdc	
Duty Cycle at 50% Level		45	50	55	%	
Rise and Fall Times		-	-	1	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

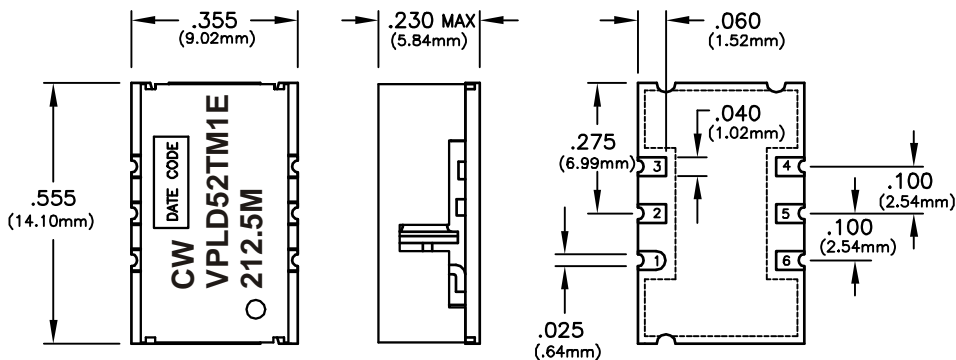
TABLE 6.0

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.

Notes

- 1.0 Inclusive of calibration, frequency vs. temperature stability, supply voltage change, load change, shock and vibration and aging over ten years, Vc=1.65 Vdc.
- 2.0 Absolute pull range (APR) is the minimum guaranteed pull range of the VCXO under all conditions over lifetime operation including aging for ten years. The APR is referenced to Fo.
- 3.0 When oscillator is disabled the true output is in a low state (Vol) and the complementary output is in the high state (Voh)
- 4.0 50 ohm termination into Vcc-2V or Thevein equivalent.

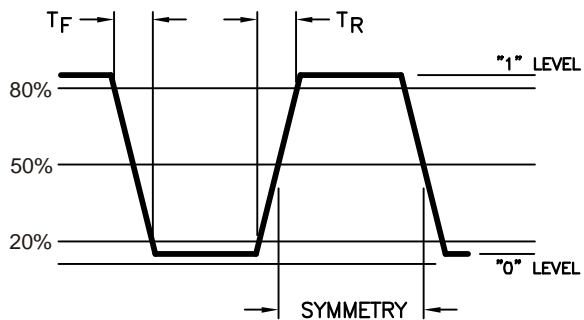
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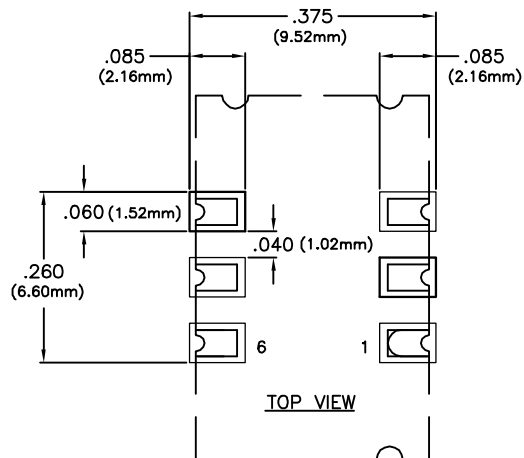
Pin	Function
1	Control Voltage
2	Enable / Disable
3	Ground (Case)
4	Output Q
5	Comp Output Q̄
6	Vcc

Dimensional Tolerance:
±.005" (.127mm)

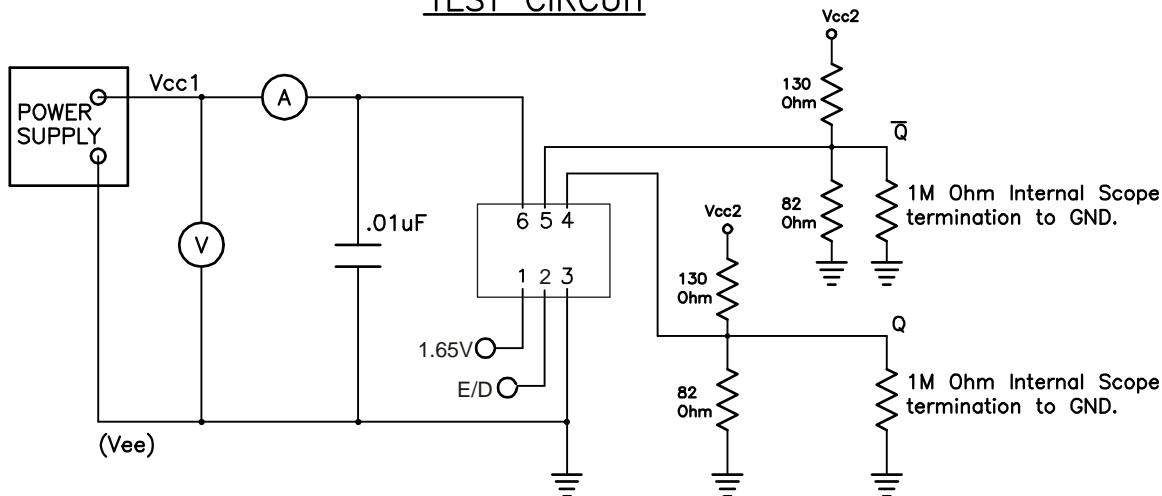
OUTPUT WAVEFORM



SUGGESTED PAD LAYOUT



TEST CIRCUIT



Specifications subject to change without notice.