

CRYSTAL CONTROLLED OSCILLATORS

3.3V SURFACE MOUNT VCXO OSCILLATOR



VPLD54TEX4

DESCRIPTION

The Connor Winfield VPLD54TEX4 is a 3.3V Voltage Controlled Crystal Oscillator (VCXO) with LVPECL Differential outputs and enable/ disable function. The VPLD54TEX4 is designed using a high frequency fundamental crystal and a 4X PLL multiplication to achieve the output frequency.

FEATURES

- FREQUENCY RANGE: 400 MHZ to 800 MHZ
- 3.3V OPERATION
- LOW JITTER <2pS RMS
- TOTAL FREQUENCY TOLERANCE: ±20ppm
- TEMPERATURE RANGE: 0 to 70°C
- DIFFERENTIAL LVPECL OUTPUTS
- ENABLE / DISABLE FUNCTION
- SURFACE MOUNT PACKAGE
- TAPE AND REEL PACKAGING

ORDERING INFORMATION

VPLD54TEX4 - 700.00MHZ

VCXO
SERIES

CENTER
FREQUENCY

Specifications subject to change without notice.

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)	400	-	800	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=10Hz to 20MHz)		-	-	8	ps rms	
Jitter (BW=12kHz to 20MHz)		-	-	2	ps rms	
SSB Phase Noise at 100Hz offset		-	-65	-	dBc/Hz	
SSB Phase Noise at 1KHz offset		-	-95	-	dBc/Hz	
SSB Phase Noise at 10KHz offset		-	-115	-	dBc/Hz	
SSB Phase Noise at 100KHz offset		-	-120	-	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)		+/-25	-	-	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

LVPECL 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 / Fall Time 20% to 80%		-	-	0.5	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

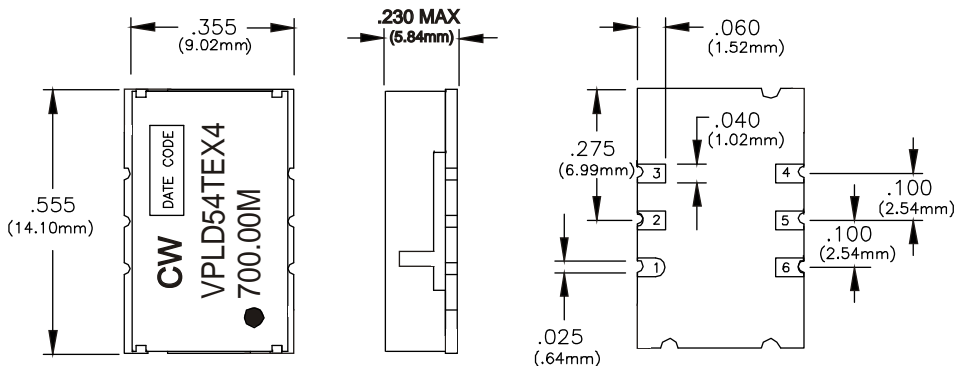
TABLE 6.0

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:

- 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.
- Absolute pull range (APR) is the minimum guaranteed pull range of the VCXO under all conditions over lifetime operation. The APR is referenced to Fo. Positive Transfer Function.
- When oscillator is disabled the outputs are at high impedance state. Outputs are enabled with no connection on enable pad.
- 50 ohm termination into Vcc-2V or Thevein equivalent.

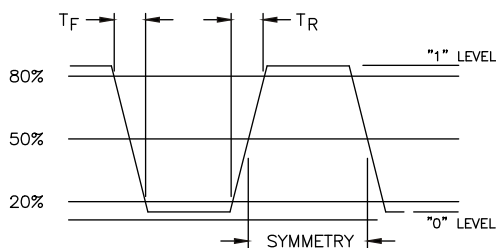
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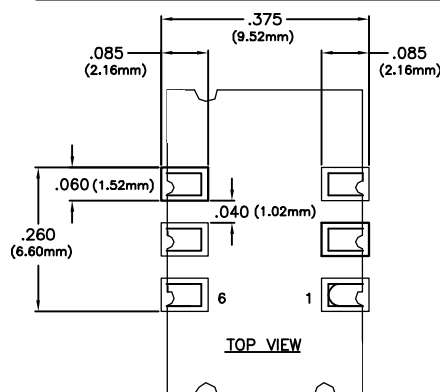
Pin	Function
1	Control Voltage
2	Enable / Disable
3	Ground (Case)
4	Output
5	Comp Output
6	Vcc

Dimensional Tolerance:
±.005 (.127mm)

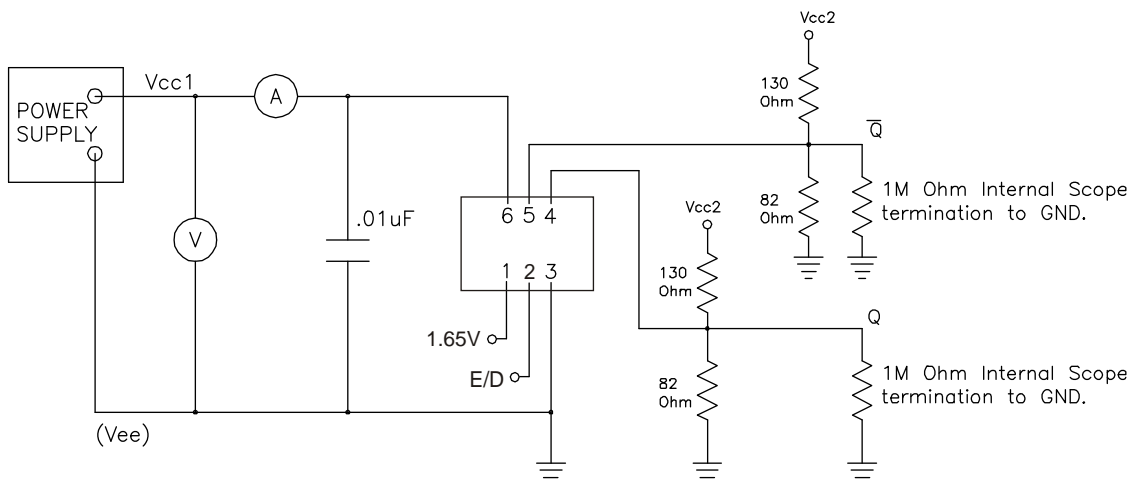
OUTPUT WAVEFORM



SUGGESTED PAD LAYOUT



TEST CIRCUIT



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