

# CRYSTAL CONTROLLED OSCILLATORS

## 3.3V SURFACE MOUNT VCXO OSCILLATOR



### 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)	-	622.08000 644.53125 666.51430 669.32660	-	MHz	
Total Frequency Tolerance		-25	-	25	ppm	1
Operating Temperature Range		0	-	85	°C	
Supply Voltage	(Vcc)	3.135	3.3	3.465	Vdc	
Supply Current	(Icc)	-	-	100	mA	
Jitter (BW=10Hz to 20MHz)		-	-	5	ps rms	
Jitter (BW=12kHz to 80MHz)		-	-	1	ps rms	
SSB Phase Noise at 100Hz offset		-	-60	-	dBc/Hz	
SSB Phase Noise at 1KHz offset		-	-90	-	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	
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 measured @ 20% to 80%		-	-	1.0	nS	

### PACKAGE CHARACTERISTICS

TABLE 5.0

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

### PROCESS RECOMMENDATIONS

TABLE 6.0

Soldering Process	See solder profile page 2.
Wash	Ultrasonic cleaning is not recommended.

#### Notes

- Inclusive of calibration @25°C, frequency vs. temperature, aging (15yrs), supply and load variations, shock, and vibration.
- 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
- 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.

## VPLD31TEMG5

### DESCRIPTION

The Connor-Winfield VPLD31TEMG5 is a 3.3V Voltage Controlled Crystal Oscillator (VCXO) with Differential LVPECL outputs and Enable/Disable function. The VPLD31TEMG5 is designed for use with PLL systems requiring low jitter and tight stability. No PLL multiplication schemes are used in this oscillator design.

### FEATURES

LOW PROFILE, SURFACE MOUNT PACKAGE

3.3V OPERATION

LOW JITTER <1ps RMS

FREQUENCY TOLERANCE: ±25ppm

TEMPERATURE RANGE: 0 to 85°C

DIFFERENTIAL LVPECL OUTPUTS

ENABLE / DISABLE FUNCTION

TAPE AND REEL PACKAGING

RoHS 5/6 COMPLIANT

### ORDERING INFORMATION

VPLD31TEMG5 - 669.3266MHz

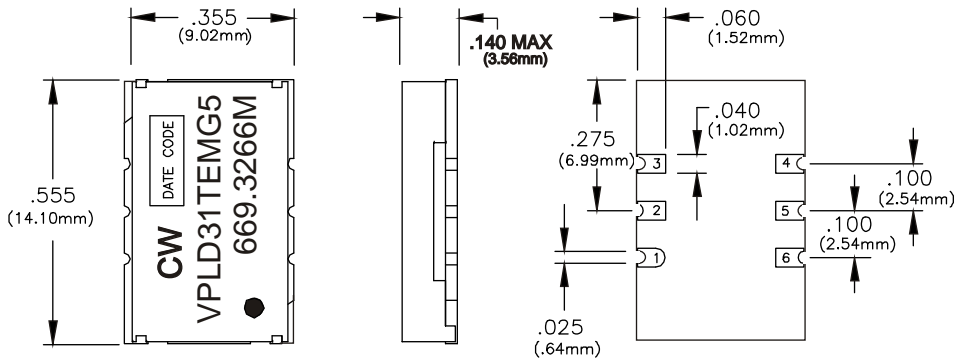
VCXO  
SERIES

CENTER  
FREQUENCY

Specifications subject to change without notice.

# CRYSTAL CONTROLLED OSCILLATORS

## Package Outline

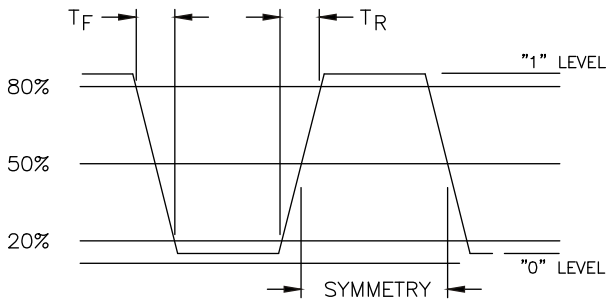


## Pin Connections

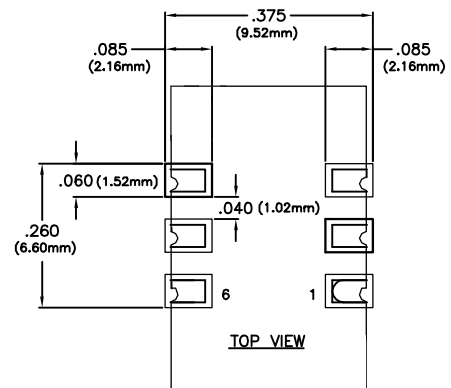
Pin	Function
1	Control Voltage
2	Enable / Disable
3	Ground (Case)
4	Output Q
5	Comp Output $\bar{Q}$
6	Vcc

Dimensional Tolerance:  
 $\pm .005$  (.127mm)

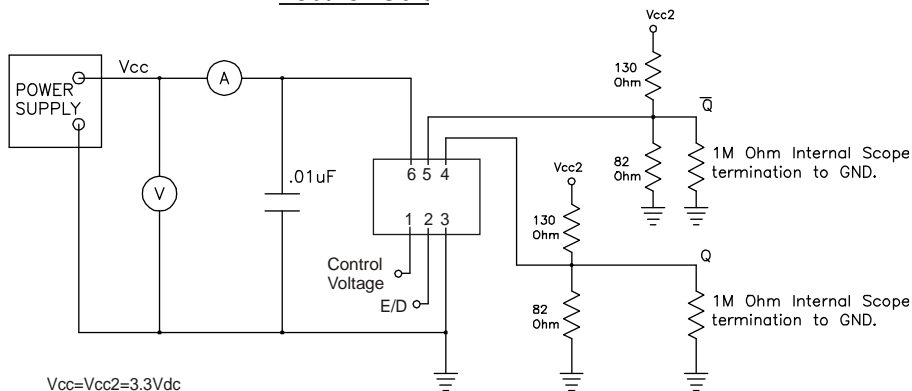
## Output Waveform



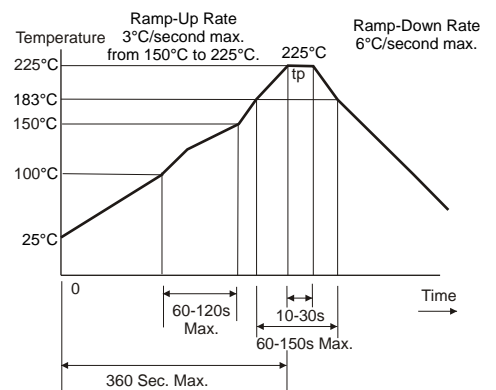
## Suggested Pad Layout



## Test Circuit



## Solder Profile



Specifications subject to change without notice.