

# CRYSTAL CONTROLLED OSCILLATORS

## 3.3V SURFACE MOUNT VCISO OSCILLATOR



### 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	-	7.0	Vdc	

### OPERATING SPECIFICATIONS

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Center Frequency	(Fo)	-	622.08	-	MHz	
Frequency Stability		-	+/-150	-	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)		-	-	3.0	ps rms	
Jitter (BW=12kHz to 80MHz)		-	-	0.5	ps rms	
SSB Phase Noise at 100Hz offset		-	-70	-	dBc/Hz	
SSB Phase Noise at 1KHz offset		-	-105	-	dBc/Hz	
SSB Phase Noise at 10KHz offset		-	-145	-	dBc/Hz	
SSB Phase Noise at 100KHz offset		-	-155	-	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)		+/-50	-	-	ppm	2
Gain Transfer (Kv)		-	175	-	ppm/volt	
Monotonic Linearity		-15	-	15	%	
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 (Measured 20% to 80%)		-	250	400	ps	

### 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

- 1.0 I Frequency stability vs. change in temperature, control voltage (Vc) = 1.65 Vdc.
- 2.0 Control voltage for (Fo) = 1.65 Vdc Typical. Positive Transfer Function.
- 3.0 When oscillator is disabled the pin 4 output is in a low state (Vol) and the pin 5 output is in the high state (Voh)
- 4.0 50 ohm termination into Vcc-2V or Thevein equivalent.

## VSPLD63TE

### DESCRIPTION

The Connor-Winfield VSPLD63TE is a 3.3V Voltage Controlled SAW Oscillator (VCISO) with Differential LVPECL outputs and Enable/Disable function. The VSPLD63TE is designed for use with PLL systems in SONET/SDH systems requiring low jitter and wide pull range over the industrial temperature range. No multiplication schemes are used in this oscillator design.

### FEATURES

- VOLTAGE CONTROLLED SAW OSCILLATOR
- LOW PROFILE, SURFACE MOUNT PACKAGE
- 3.3V OPERATION
- LOW JITTER <0.5ps RMS
- ABSOLUTE PULL RANGE (APR): ±50ppm
- TEMPERATURE RANGE: -40 to 85°C
- DIFFERENTIAL LVPECL OUTPUTS
- ENABLE / DISABLE FUNCTION
- TAPE AND REEL PACKAGING
- RoHS 5/6 COMPLIANT

### ORDERING INFORMATION

VSPLD63TE - 622.08MHz

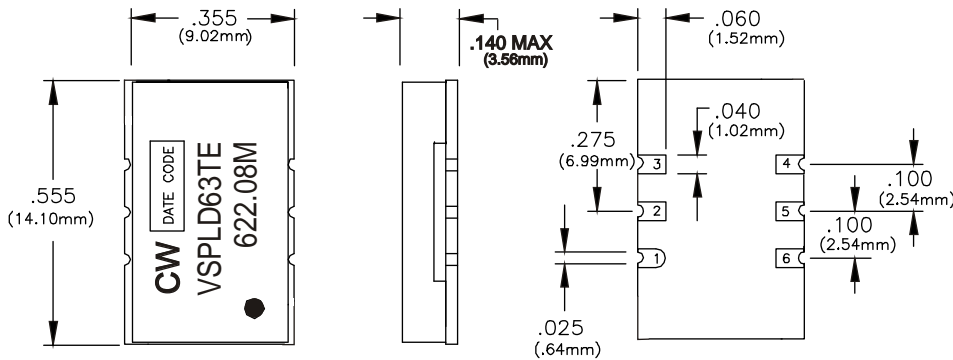
VCISO  
SERIES

CENTER  
FREQUENCY

Specifications subject to change without notice.

# CRYSTAL CONTROLLED OSCILLATORS

## Package Outline



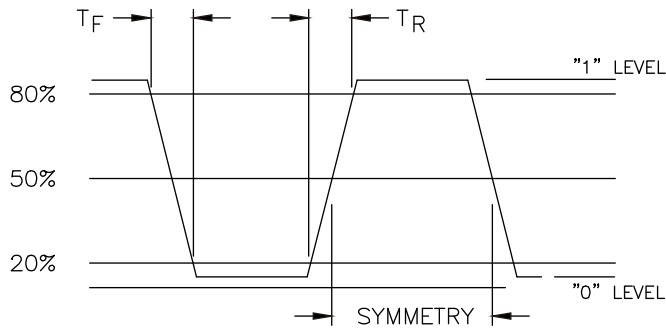
## Pin Connections

**TABLE 7.0**

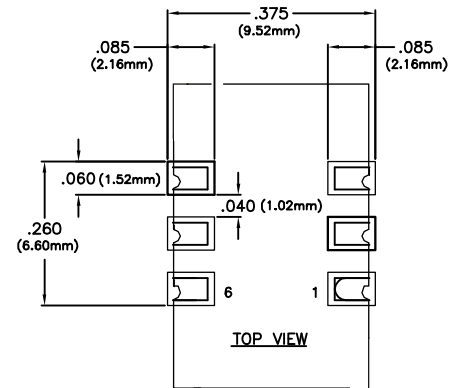
Pin	Function
1	Control Voltage
2	Enable / Disable
3	Ground (Case)
4	Output Q
5	Output $\bar{Q}$
6	Vcc

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

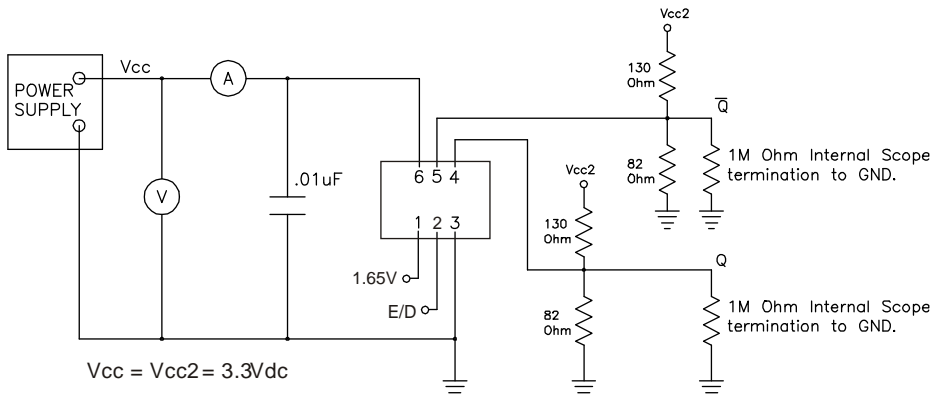
## Output Waveform



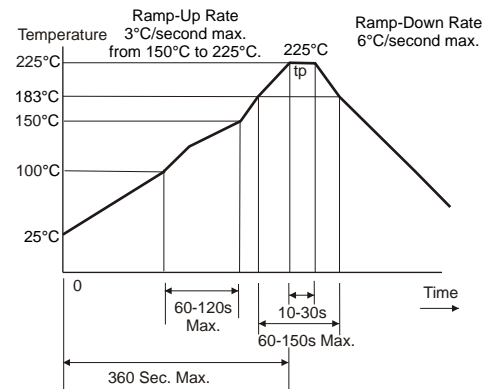
## Suggested Pad Layout



## Test Circuit



## Solder Profile



Specifications subject to change without notice.