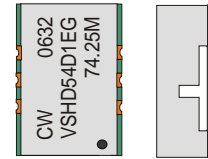


# CRYSTAL CONTROLLED OSCILLATORS

## 5.0V 9x14mm SURFACE MOUNT HCMOS VCXO



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)	2	-	100	MHz	
Frequency Stability		-20	-	20	ppm	
Aging (15 years)		-10	-	10	ppm	
Total Frequency Tolerance		-30	-	30	ppm	1
Operating Temperature Range		0	-	70	°C	
Supply Voltage	(Vcc)	4.75	5.00	5.25	Vdc	
Supply Current	(Icc)	-	-	60	mA	
Jitter (BW=10Hz to 20MHz)		-	-	5	pS rms	
Jitter (BW=12kHz to 20MHz)		-	-	1	pS rms	
SSB Phase Noise at 10Hz offset		-	-70	-	dBc/Hz	
SSB Phase Noise at 100Hz offset		-	-100	-	dBc/Hz	
SSB Phase Noise at 1KHz offset		-	-125	-	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)	0.5	2.5	4.5	Vdc	
Frequency Pullability		±50	-	-	ppm	
Absolute Pull Range		±20	-	-	ppm	2
Monotonic Linearity		-15	-	15	%	
Input Impedance		-	50K	-	Ohm	
Modulation Bandwidth (3dB)		10	-	-	KHz	
Enable Voltage (High)	(Vih)	2.0	-	-	Vdc	3
Disable Voltage (Low)	(Vil)	-	-	0.8	Vdc	4
Output Enable / Disable Time		-	-	100	nS	

HCMOS OUTPUT CHARACTERISTICS

TABLE 4.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	25	pF	
Voltage (High)	(Voh)	0.9(Vcc)	-	-	Vdc	
(Low)	(Vol)	-	-	0.1(Vcc)	Vdc	
Current (High)	(Ioh)	-8	-	-	mA	
(Low)	(Iol)	-	-	8	mA	
Duty Cycle at 50% of Vcc		40	50	60	%	
Rise / Fall Time 10% to 90%		-	3	4	nS	

PACKAGE CHARACTERISTICS

TABLE 5.0

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

PROCESS RECOMMENDATIONS

TABLE 6.0

Solder Reflow	See solder profile page 2.
Wash	Ultrasonic cleaning is not recommended.

Notes

- Inclusive of calibration, frequency vs. temperature stability, supply voltage change, load change, shock and vibration, 15 years aging.
- 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 Slope.
- Output is enabled with no connection on pin 2.
- Output is in high impedance state when output is disabled.

## VSHD54D1EG

### DESCRIPTION

The Connor-Winfield VSHD54D1EG is a surface mount 5.0V Voltage Controlled Crystal Oscillator (VCXO) with an HCMOS/TTL Compatible Tri-State output. Based on a fundamental design the VSHD54D1EG is designed for phased lock loop applications requiring low jitter and tight frequency stability.

### FEATURES

- 5.0V OPERATION
- LOW JITTER <1ps RMS
- FREQUENCY STABILITY ±20ppm
- TEMPERATURE RANGE: 0 to 70°C
- ENABLE / DISABLE FUNCTION
- SURFACE MOUNT PACKAGE
- TAPE AND REEL PACKAGING
- RoHS COMPLIANT / LEAD FREE

### ORDERING INFORMATION

VSHD54D1EG - 74.25MHz

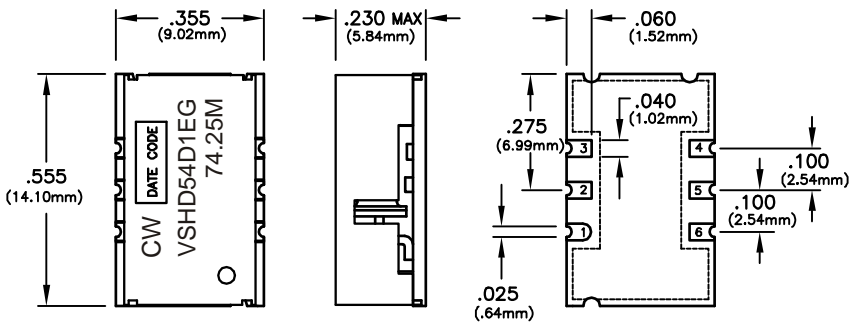


Specifications subject to change without notice.

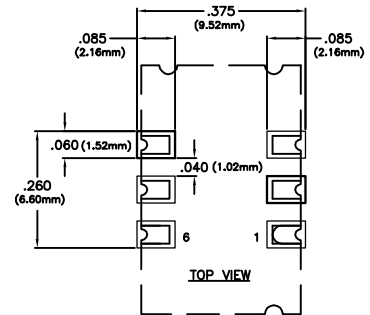
© Copyright 2001 Connor-Winfield all rights reserved.

# CRYSTAL CONTROLLED OSCILLATORS

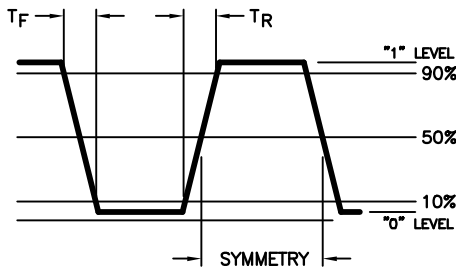
## Package Outline



## Suggested Pad Layout



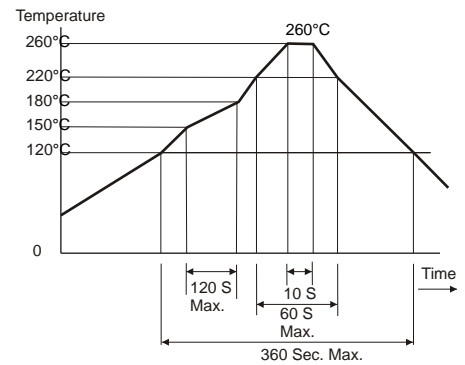
## Output Waveform



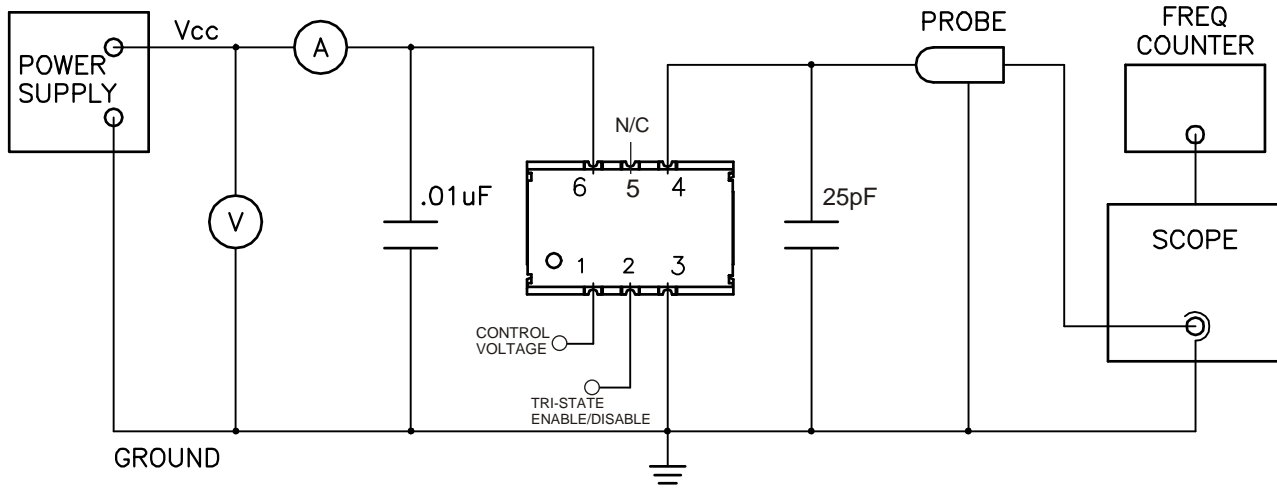
## Pin Connections

PIN	CONNECTION
1	CONTROL VOLTAGE
2	ENABLE / DISABLE
3	GROUND
4	OUTPUT
5	N/C
6	Vcc

## Solder Profile



## Test Circuit



Specifications subject to change without notice.