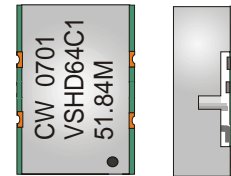


# CRYSTAL CONTROLLED OSCILLATORS

## SURFACE MOUNT 5.0V HCMOS VCXO



VSHD64C1

### 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)	2	-	100	MHz	
Frequency Stability		-20	-	20	ppm	1
Aging (1st year)		-2	-	2	ppm	
Aging (10 years)		-5	-	5	ppm	
Operating Temperature Range		-40	-	85	°C	
Supply Voltage	(Vcc)	4.75	5.00	5.25	Vdc	
Supply Current	(Icc)	-	-	50	mA	
Jitter (BW=10Hz to 20MHz)		-	-	5	pS rms	
Jitter (BW=12kHz to 20MHz)		-	-	1	pS rms	
SSB Phase Noise at 10Hz offset		-	-60	-	dBc/Hz	
SSB Phase Noise at 100Hz offset		-	-100	-	dBc/Hz	
SSB Phase Noise at 1KHz offset		-	-110	-	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)	0.5	2.5	4.5	Vdc	
Frequency Pullability		±100	-	-	ppm	2
Monotonic Linearity		-10	-	10	%	
Input Impedance		-	50K	-	Ohm	
Modulation Bandwidth (3dB)		15	-	-	KHz	

### HCMOS OUTPUT CHARACTERISTICS

TABLE 4.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	20	pF	
Voltage (High)	(Voh)	4.5	-	-	Vdc	
(Low)	(Vol)	-	-	0.5	Vdc	
Current (High)	(Ioh)	-16	-	-	mA	
(Low)	(Iol)	-	-	16	mA	
Duty Cycle at 50% of Vcc		45	50	55	%	
Rise / Fall Time 10% to 90%		-	-	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

- 1.0 Inclusive of frequency vs. temperature, frequency vs. change in supply voltage, frequency vs. load change. Referenced to Fo @ 25°C, Vc = 2.5V.  
2.0 Referenced to Fo @ 25°C. Positive Slope.

### DESCRIPTION

The Connor-Winfield VSHD64C1 is a surface mount 5.0V Voltage Controlled Crystal Oscillator (VCXO) with HCMOS / TTL Compatible output. Based on a fundamental crystal design, the VSHD64C1 is designed for phased lock loop applications requiring low jitter and tight stability.

### FEATURES

- 5.0V OPERATION
- LOW JITTER <1pS RMS
- FREQUENCY STABILITY: ±20ppm
- TEMPERATURE RANGE:-40 to 85°C
- SURFACE MOUNT PACKAGE
- TAPE AND REEL PACKAGING

### ORDERING INFORMATION

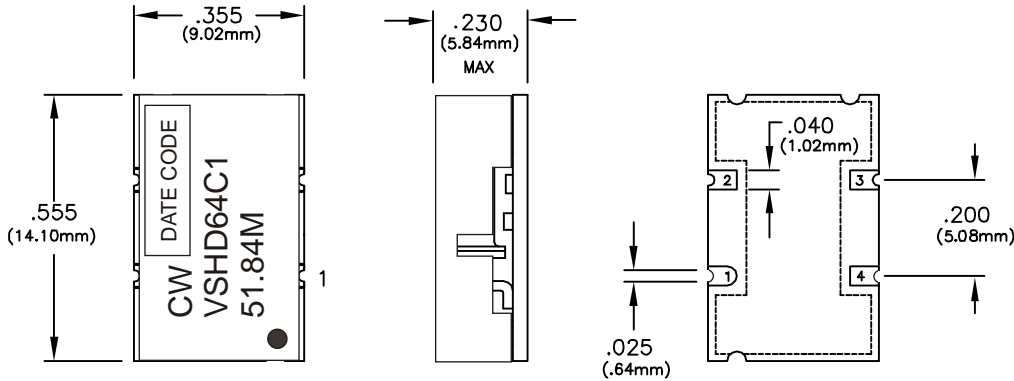
VSHD64C1 - 51.84 MHz

VCXO  
SERIES

CENTER  
FREQUENCY

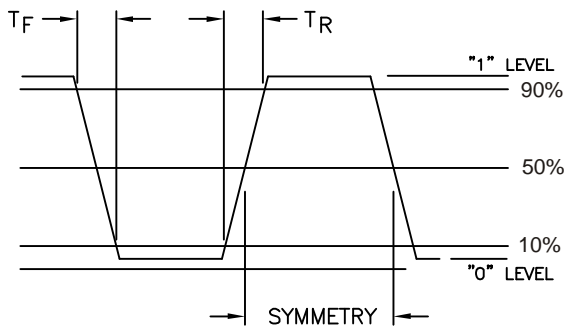
Specifications subject to change without notice.

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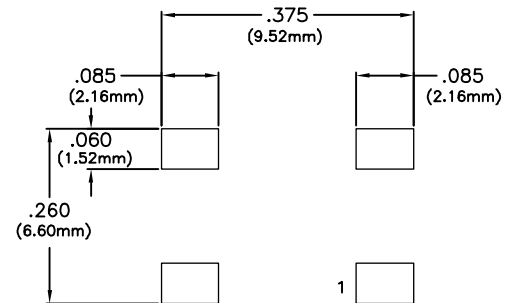
PIN	CONNECTION
1	CONTROL VOLTAGE
2	GROUND
3	OUTPUT
4	V <sub>CC</sub>

OUTPUT WAVEFORM

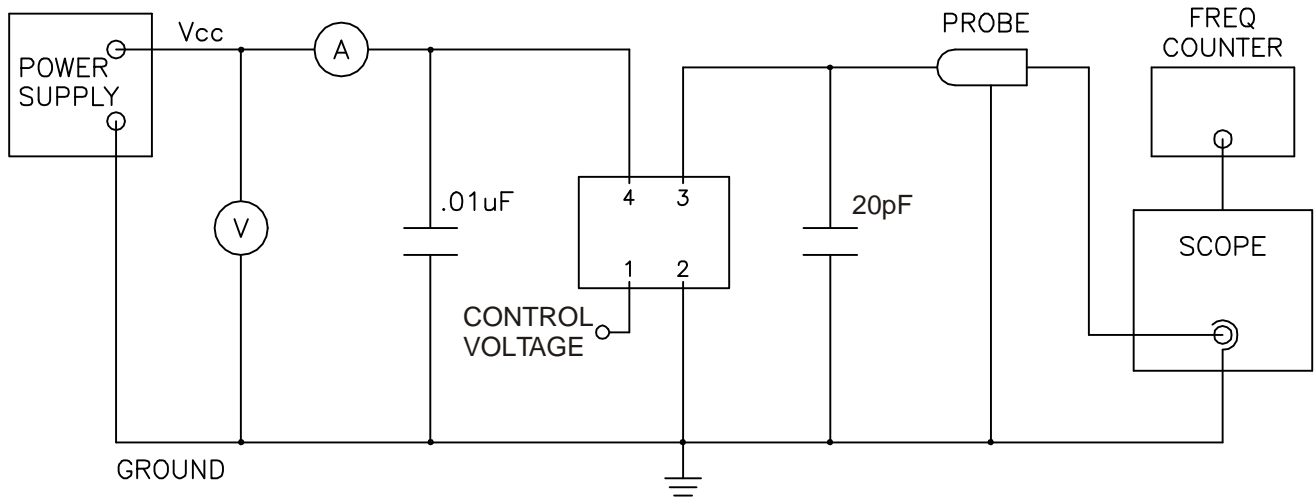


SUGGESTED PAD LAYOUT

(TOP VIEW)



TEST CIRCUIT



Specifications subject to change without notice.