

CRYSTAL CONTROLLED OSCILLATORS

SURFACE MOUNT 5.0V HCMOS VCXO



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)	2	-	100	MHz	
Frequency Stability		-20	-	20	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		±100	-	-	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%		-	4	3	nS	

PACKAGE CHARACTERISTICS

TABLE 5.0

Package	Non-hermetic package consisting of an FR4 subst rate 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, frequency vs. temperature stability, supply voltage change, load change, shock and vibration, 15 years aging referenced to Fo.
 - Positive Slope.
 - Output is enabled with no connection on pin 2.
 - Output is in high impedance state when disabled.

VSHD54TC1E

DESCRIPTION

The Connor-Winfield VSHD54TC1E 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 VSHD54TC1E is designed for phased lock loop applications requiring low jitter and tight stability.

FEATURES

- 5.0V OPERATION
- FREQUENCY STABILITY ±20ppm
- LOW JITTER <1ps RMS
- TEMPERATURE RANGE: 0 to 70°C
- TRI-STATE OUTPUT
- SURFACE MOUNT PACKAGE
- TAPE AND REEL PACKAGING

ORDERING INFORMATION

VSHD54TC1E - 44.736MHz

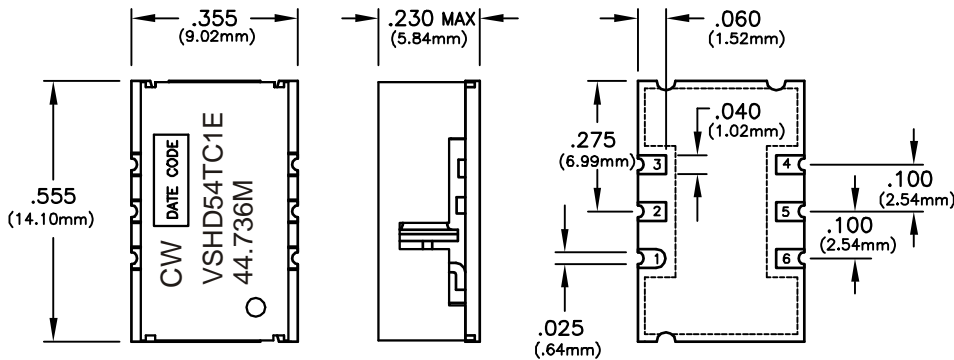
VCXO
SERIES

CENTER
FREQUENCY

Specifications subject to change without notice.

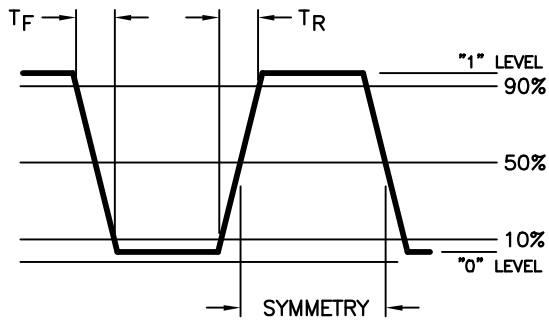
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CRYSTAL CONTROLLED OSCILLATORS

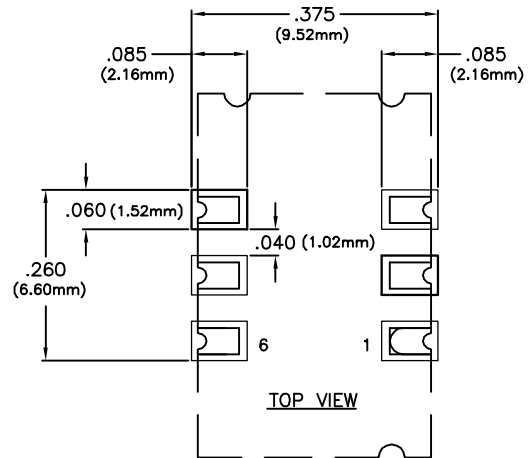


PIN	CONNECTION
1	CONTROL VOLTAGE
2	ENABLE / DISABLE
3	GROUND
4	OUTPUT
5	N/C
6	Vcc

OUTPUT WAVEFORM



SUGGESTED PAD LAYOUT



TEST CIRCUIT

