

# CRYSTAL CONTROLLED OSCILLATORS

## SURFACE MOUNT 5.0V HCMOS VCTCXO



TVHB546

ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-40	-	85	°C	
Supply Voltage	(Vcc)	-0.5	-	7	Vdc	
Control Voltage	(Vc)	-0.5	-	7	Vdc	

OPERATING SPECIFICATIONS

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	12.8	-	100.0	MHz	
Total Frequency Tolerance		-4.6	-	4.6	ppm	1
Operating Temperature Range		0	-	70	°C	
Supply Voltage	(Vcc)	4.75	5.0	5.25	Vdc	
Supply Current	(Icc)	-	15	25	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	(Vc)	0.5	2.5	4.5	Vdc	
Frequency Adjust Range		±10	-	-	ppm	2
Frequency Adjust Linearity		-15	-	15	%	
Input Impedance		10k	-	-	Ohm	

HCMOS OUTPUT CHARACTERISTICS

TABLE 4.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	15	pF	
Voltage (High)	(Voh)	Vcc - 0.5	-	-	Vdc	
(Low)	(Vol)	-	-	0.5	Vdc	
Current (High)	(Ioh)	-4	-	-	mA	
(Low)	(Iol)	-	-	4	mA	
Duty Cycle at 50% of Vcc		40	50	60	%	
Rise / Fall Time 10% to 90%		-	3	6	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.

Note:

- 1) Inclusive of calibration, frequency vs. temperature stability, supply voltage change, load change, shock and vibration and aging for 10 years.
- 2) Positive Slope.

### DESCRIPTION

The Connor-Winfield TVHB546 is a 5.0V HCMOS, surface mount, Voltage Controlled Temperature Compensated Crystal Oscillator (VCTCXO). The TVHB546 is designed for applications requiring very tight frequency stability vs. Temperature. The TVHB546 is offered in a surface mount package for automated assembly.

### FEATURES

- 5.0V OPERATION
- LOW JITTER <1ps RMS
- OVERALL FREQUENCY STABILITY: ±4.6ppm
- TEMPERATURE RANGE: 0 to 70°C
- SURFACE MOUNT PACKAGE
- TAPE AND REEL PACKAGING

### ORDERING INFORMATION

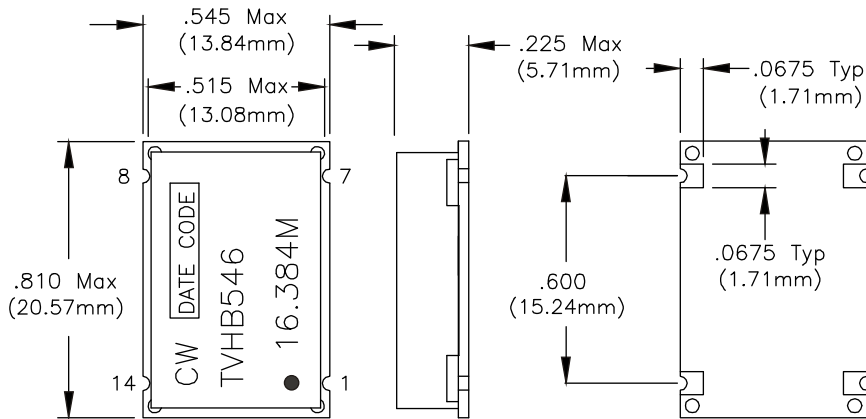
TVHB546 - 16.384MHz

ECL  
SERIES

CENTER  
FREQUENCY

Specifications subject to change without notice.

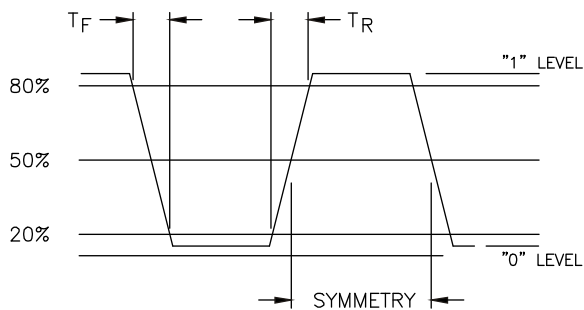
CRYSTAL CONTROLLED OSCILLATORS



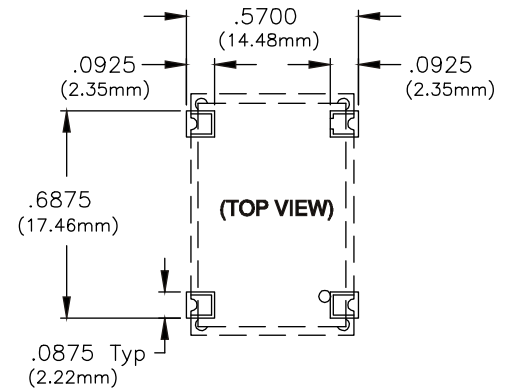
PIN	CONNECTION
1	CONTROL VOLTAGE
7	GROUND
8	OUTPUT
14	Vcc

Dimensional Tolerance:  
±.005 (.127mm)

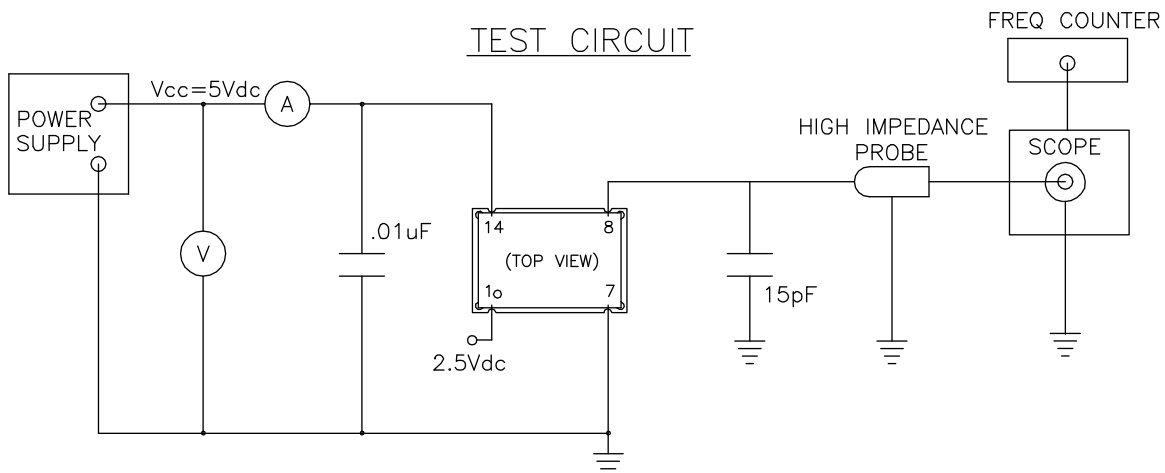
OUTPUT WAVEFORM



SUGGESTED PAD LAYOUT



TEST CIRCUIT



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