

# CRYSTAL CONTROLLED OSCILLATORS

## 14 PIN 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	Vdc	
Control Voltage	(Vc)	-0.5	-	7	Vdc	

### MODEL SPECIFICATIONS

#### MODEL NUMBER

TABLE 2.0

MODEL NUMBER	PARAMETER	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
HV51-xxx	Frequency Stability:	-25	-	25	ppm	1
HV52-xxx	Frequency Stability:	-50	-	50	ppm	1
HV53-xxx	Frequency Stability:	-100	-	100	ppm	1
HV54-xxx	Frequency Stability:	-20	-	20	ppm	1
HV55-xxx	Frequency Stability:	-10	-	10	ppm	1
HV56-xxx	Frequency Stability:	-5	-	5	ppm	1

### Pullability Codes (xxx - Add code to the end of the Model Number)

TABLE 3.0

PULLABILITY CODE	PARAMETER	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
040	Frequency Pullability:	±20	-	-	ppm	2
100	Frequency Pullability:	±50	-	-	ppm	2
150	Frequency Pullability:	±75	-	-	ppm	2
160	Frequency Pullability:	±80	-	-	ppm	2
200	Frequency Pullability:	±100	-	-	ppm	2
250	Frequency Pullability:	±125	-	-	ppm	2
300	Frequency Pullability:	±150	-	-	ppm	2, 3
350	Frequency Pullability:	±175	-	-	ppm	2, 3
400	Frequency Pullability:	±200	-	-	ppm	2, 3

### OPERATING SPECIFICATIONS

TABLE 4.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	.080	-	29.999999	MHz	
Operating Temperature Range		0	-	70	°C	
Supply Voltage	(Vcc)	4.75	5.0	5.25	Vdc	
Supply Current	(Icc)	-	-	20	mA	
Jitter (BW=10Hz to 20MHz)		-	-	5	ps rms	
Jitter (BW=12kHz to 20MHz)		-	-	1	ps rms	
SSB Phase Noise at 100Hz offset		-	-90	-	dBc/Hz	
SSB Phase Noise at 1KHz offset		-	-100	-	dBc/Hz	
SSB Phase Noise at 10KHz offset		-	-125	-	dBc/Hz	
SSB Phase Noise at 100KHz offset		-	-135	-	dBc/Hz	

### INPUT CHARACTERISTICS

TABLE 5.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Control Voltage Range	(Vc)	0.5	2.5	4.5	Vdc	
Center Frequency		2.0	2.5	3.0	Vdc	
Monotonic Linearity		-15	-	15	%	
Input Impedance		-	50K	-	Ohm	
Modulation Bandwidth (3dB)		15	-	-	KHz	

### HCMOS OUTPUT CHARACTERISTICS

TABLE 6.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	15	pF	
Voltage (High)	(Voh)	4.5	-	-	Vdc	
Voltage (Low)	(Vol)	-	-	0.5	Vdc	
Current (80 KHz to 15.999 MHz) (High)	(Ioh)	-4	-	-	mA	
Current (80 KHz to 15.999 MHz) (Low)	(Iol)	-	-	4	mA	
Current (16 MHz to 29.999 MHz) (High)	(Ioh)	-8	-	-	mA	
Current (16 MHz to 29.999 MHz) (Low)	(Iol)	-	-	8	mA	
Duty Cycle at 50% of Vcc		45	50	55	%	
Rise / Fall Time 10% to 90%		-	3	5	ns	

HV51-xxx Series  
HV52-xxx Series  
HV53-xxx Series  
HV54-xxx Series  
HV55-xxx Series  
HV56-xxx Series

### DESCRIPTION

The Connor-Winfield HV5x-xxx series is a 5.0V HCMOS, 14 Pin DIP hermetically sealed, Voltage Controlled Crystal Oscillator (VCXO). Based on a fundamental crystal design the HV5x-xxx is designed for phased lock loop applications requiring low jitter and tight stability.

### FEATURES

5.0V OPERATION  
LOW JITTER <1ps RMS  
FREQUENCY STABILITY  
HV51-xxx SERIES ±25PPM  
HV52-xxx SERIES ±50PPM  
HV53-xxx SERIES ±100PPM  
HV54-xxx SERIES ±20PPM  
HV55-xxx SERIES ±10PPM  
HV56-xxx SERIES ±5PPM  
TEMPERATURE RANGE: 0 to 70°C  
HERMETICALLY SEALED PACKAGE

### ORDERING INFORMATION

HV52-150 - 024.704M

VCXO  
SERIES

CENTER  
FREQUENCY

Specifications subject to change without notice.

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### PACKAGE CHARACTERISTICS

TABLE 7.0

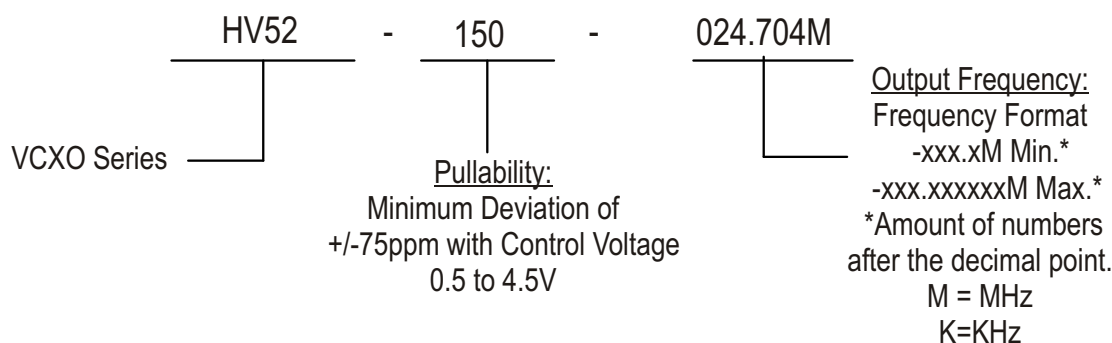
Package	Hermetically sealed, metal package.
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# CRYSTAL CONTROLLED OSCILLATORS

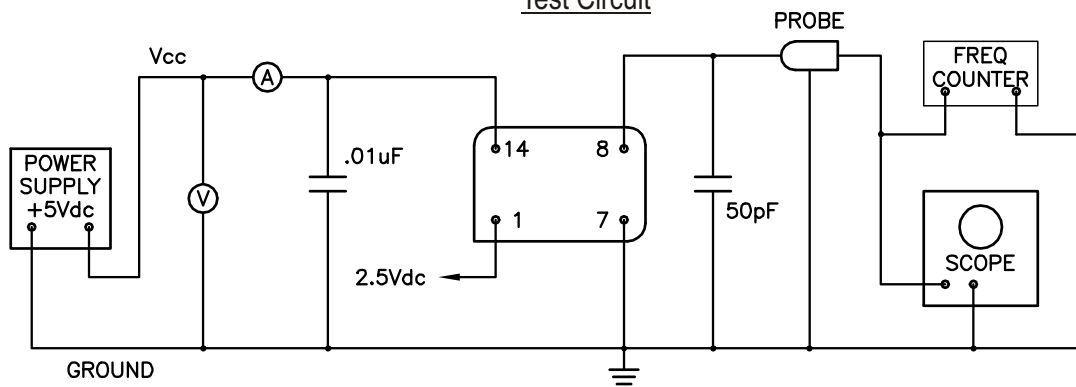
**Note:**

- 1) Frequency stability vs. change in temperature, referenced to frequency measured at 25°C with control voltage @ 2.50Vdc.
- 2) Referenced to Fo @ 25°C. Positive Slope.
- 3) The wider frequency pullabilities are not available with models HV55 or HV56 series.

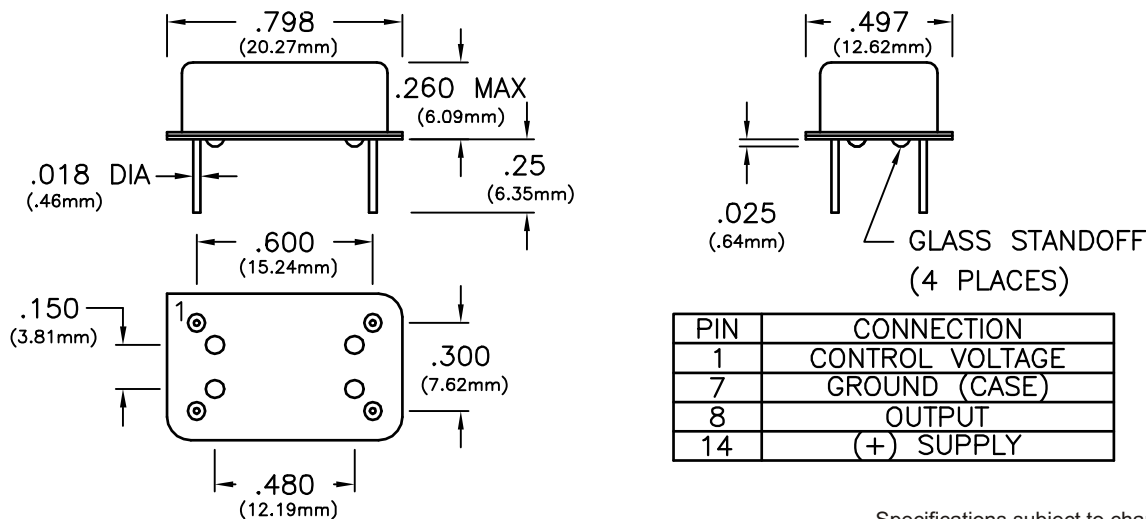
Example Part Number



Test Circuit



Package Outline and Pin Connections



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