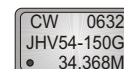


# CRYSTAL CONTROLLED OSCILLATORS

## 14 PIN 5.0V HCMOS VCXO SURFACE MOUNT GULL WING HIGH FREQUENCY



JHV51-xxxG Series  
JHV52-xxxG Series  
JHV53-xxxG Series  
JHV54-xxxG Series  
JHV55-xxxG Series

### ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-55	-	125	°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
JHV51-xxxG	Frequency Stability:	-25	-	25	ppm	1
JHV52-xxxG	Frequency Stability:	-50	-	50	ppm	1
JHV53-xxxG	Frequency Stability:	-100	-	100	ppm	1
JHV54-xxxG	Frequency Stability:	-20	-	20	ppm	1
JHV55-xxxG	Frequency Stability:	-10	-	10	ppm	1

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

TABLE 3.0

PULLABILITY CODE	PARAMETER	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
050	Frequency Pullability:	±25	-	-	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, 3
300	Frequency Pullability:	±150	-	-	ppm	2, 4

### OPERATING SPECIFICATIONS

TABLE 4.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	30	-	100	MHz	
Operating Temperature Range		0	-	70	°C	
Supply Voltage	(Vcc)	4.75	5.0	5.25	Vdc	
Supply Current ≤50 MHz	(Icc)	-	-	35	mA	
Supply Current >50 MHz	(Icc)	-	-	60	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 (30 to 52MHz) (High)	(Ioh)	-8	-	-	mA	
Current (30 to 52MHz) (Low)	(Iol)	-	-	8	mA	
Current (52.1 to 100MHz) (High)	(Ioh)	-16	-	-	mA	
Current (52.1 to 100MHz) (Low)	(Iol)	-	-	16	mA	
Duty Cycle at 50% of Vcc		40	50	60	%	
Rise/Fall Time 10% to 90%		-	-	3	nS	
Optional Duty Cycle: measured at 50% Vcc		45	50	55	%	5

### PACKAGE CHARACTERISTICS

TABLE 7.0

Package	Hermetically sealed, metal package.
Solder Process	RoHS Compliant/Lead free, see the solder profile on page 2.

### DESCRIPTION

The Connor-Winfield JHV5x-xxxG series is a 5.0V HCMOS, 14 Pin DIP hermetically sealed gull wing surface mount package, Voltage Controlled Crystal Oscillator (VCXO). Based on a fundamental crystal design the JHV5x-xxxG is designed for phased lock loop applications requiring low jitter and tight frequency stability.

### FEATURES

5.0V OPERATION  
FREQUENCY RANGE:  
30 to 100 MHz  
FREQUENCY STABILITY  
JHV51-xxxG SERIES ±25PPM  
JHV52-xxxG SERIES ±50PPM  
JHV53-xxxG SERIES ±100PPM  
JHV54-xxxG SERIES ±20PPM  
JHV55-xxxG SERIES ±10PPM  
TEMPERATURE RANGE: 0 to 70°C  
LOW JITTER <1psRMS  
SURFACE MOUNT GULL WING  
HERMETICALLY SEALED PACKAGE  
RoHS COMPLIANT/LEAD FREE

### ORDERING INFORMATION

JHV54-150G-034.368M

VCXO SERIES      CENTER FREQUENCY

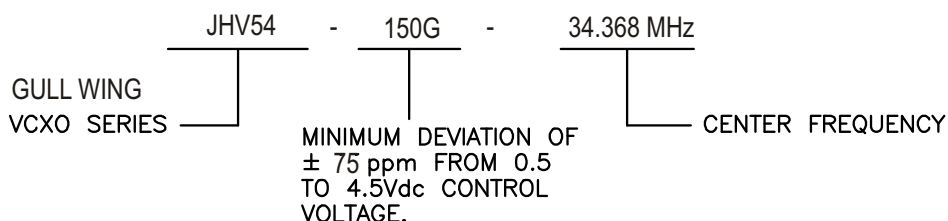
Specifications subject to change without notice.  
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# CRYSTALCONTROLLEDOSCILLATORS

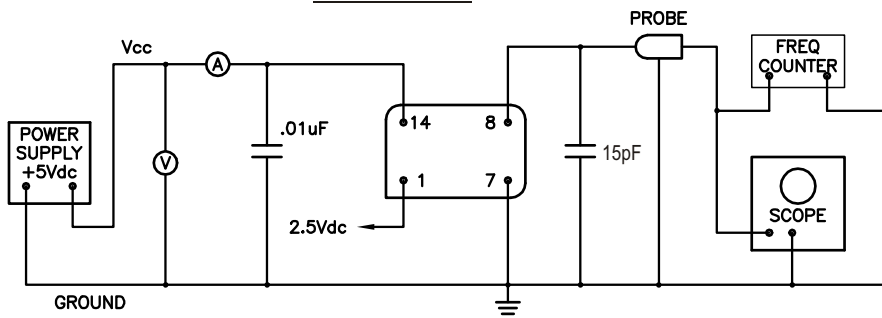
**Note:**

- 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) +/-100ppm frequency deviation is not available above 75MHz.
- 4) +/-150ppm frequency deviation is not available above 50MHz.
- 5) Add "S" to the end of the part number, Example: JHV54-150GS-034.368M.

Example Part Number



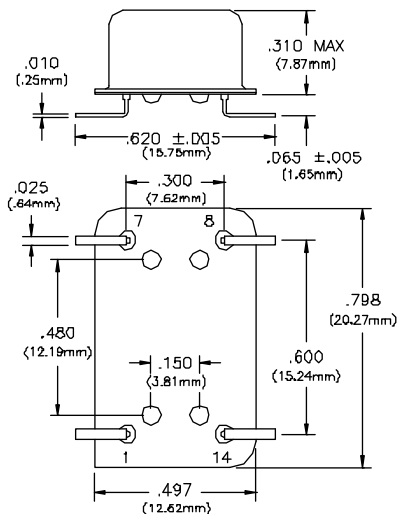
Test Circuit



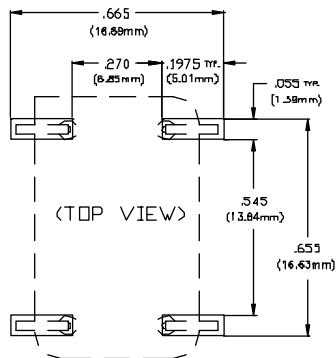
Pin Connections

PIN	CONNECTION
1	CONTROL VOLTAGE
7	GROUND (CASE)
8	OUTPUT
14	(+) SUPPLY

Package Outline

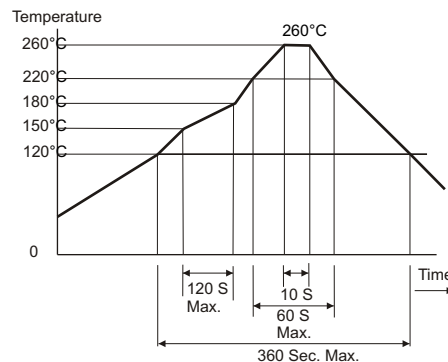


Suggested Pad Layout



Dimensional Tolerance:  
±.008" (.2mm)

Solder Profile



Specifications subject to change without notice.