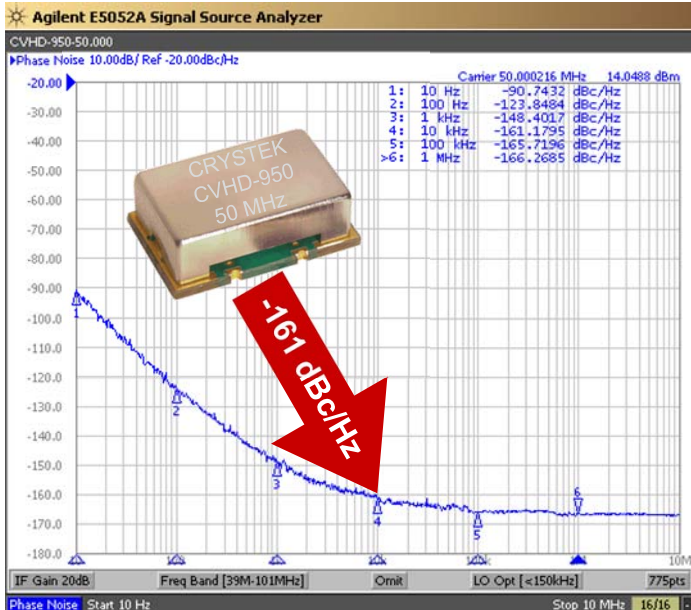


# CVHD-950 VCXO

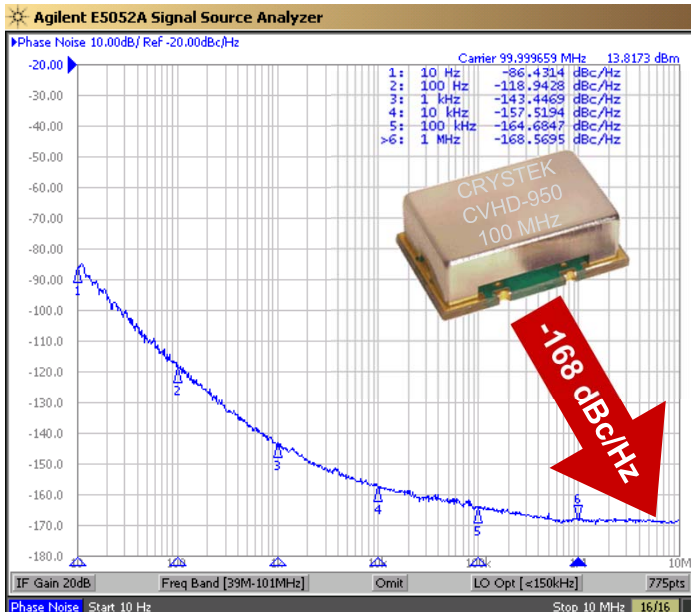
## Ultra-Low Phase Noise Oscillators

**CVHD-950 Model**  
9×14 mm SMD, 3.3V, CMOS

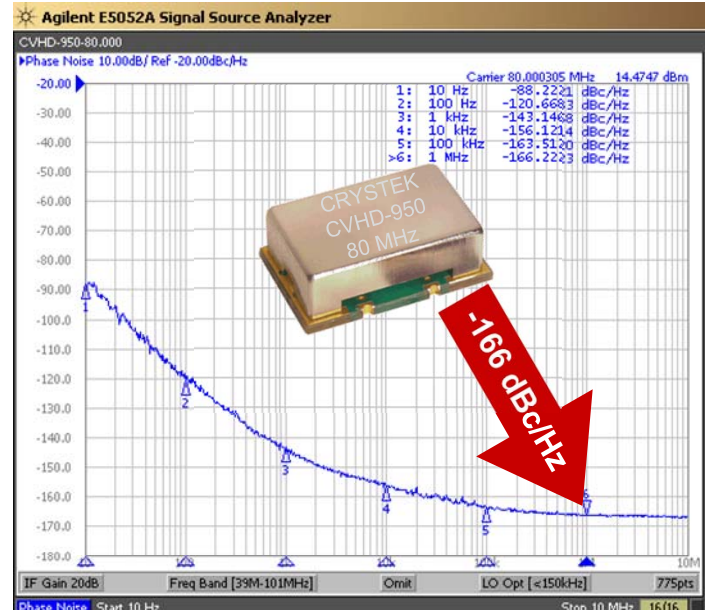
**50 MHz HCMOS 3.3V**



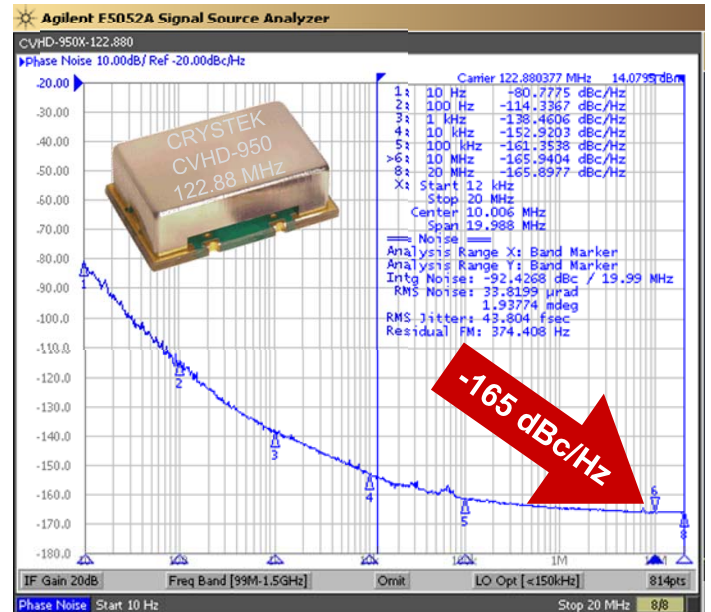
**100 MHz HCMOS 3.3V**



**80 MHz HCMOS 3.3V**



**122.880 MHz HCMOS 3.3V**



**Model CVHD-950 is a 40 MHz to 130 MHz CMOS Voltage Controlled Crystal Oscillator. High Q crystal and 3<sup>rd</sup> overtone technology provides Ultra-Low Phase Noise and Low-Jitter performance with a CMOS output. Features include -168 dBc/Hz phase noise floor with 3.3Vdc input voltage, -40°C to +85°C operating temperature, and 9×14 mm SMT package. The oscillator has no sub-harmonics.**

**Applications include High Definition TV, Avionics  
Low Phase Signal Sources, and Test and Measurement.**

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# CVHD-950 VCXO

## Ultra-Low Phase Noise Oscillators



**CVHD-950 Model**  
9x14 mm SMD, 3.3V, CMOS

<b>Frequency Range:</b>	40 MHz to 130 MHz
<b>Temperature Range:</b>	0°C to +70°C (standard)
(Option M)	-20°C to +70°C
(Option X)	-40°C to +85°C
<b>Storage:</b>	-45°C to 90°C
<b>Input Voltage:</b>	3.3V ±0.3V
<b>Supply Pushing:</b>	1.2ppm/V Typical
<b>Input Current:</b>	15mA Typical, 25mA Max
<b>Output:</b>	CMOS
<b>Symmetry:</b>	45/55% Max @ 50%Vdd
<b>Rise/Fall Time:</b>	3nsec Max @ 20% to 80% Vdd
<b>Logic:</b>	“0” = 10% Vdd Max “1” = 90% Vdd Min
<b>Load:</b>	15pF
<b>Output Current:</b>	±24mA Max
<b>Input:</b>	
<b>Modulation Bandwidth:</b>	>10kHz @ -3dB
<b>Input Impedance:</b>	51 kΩ
<b>Control Voltage:</b>	1.65V ±1.65V
<b>Tuning Sensitivity:</b>	+25ppm/V Typical
<b>Frequency Pulling:</b>	±20ppm APR Min (Inclusive of frequency stability, calibration, and aging.)
<b>Linearity:</b>	±5% Max
<b>Phase Jitter (12kHz~20MHz):</b>	40 fsec Typical @100MHz
<b>Typical Phase Noise (100MHz):</b>	
1kHz	-140 dBc/Hz
10kHz	-155 dBc/Hz
100kHz	-164 dBc/Hz
1MHz	-166 dBc/Hz
<b>Phase Noise Floor:</b>	-166 dBc/Hz Typical, -162 dBc/Hz Max
<b>Sub-harmonics:</b>	None
<b>Aging:</b>	<3ppm 1 <sup>st</sup> year, <1ppm thereafter
<b>Weight:</b>	1.2 g

Part Number Example: CVHD-950X-100.000 = 3.3V, 45/55, -40°C to +85°C (±20ppmAPR), 100 MHz

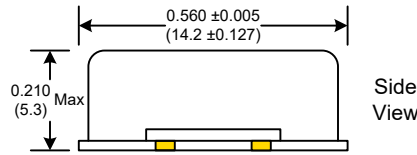
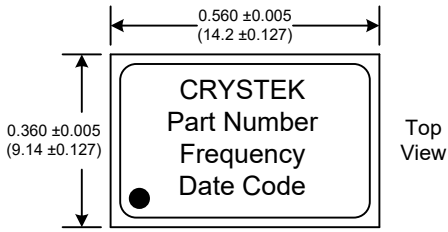
Absolute Maximum Ratings		
Parameter	Rating	Unit
Input Supply Voltage	+6.0	V
Input Control Voltage	+10.0	V

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# CVHD-950 VCXO

## Ultra-Low Phase Noise Oscillators

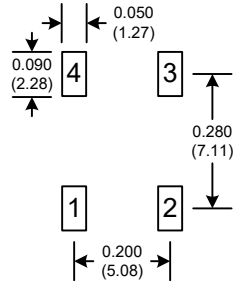
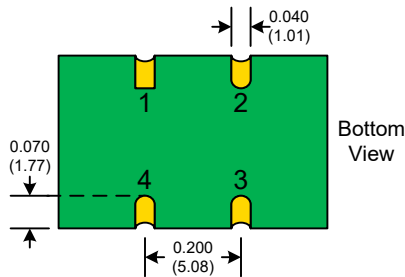
**CVHD-950 Model**  
9×14 mm SMD, 3.3V, CMOS



**RECOMMENDED REFLOW SOLDERING PROFILE**  
900034 (See App Note listed on website)

<http://www.crystek.com/specification/reflow/900034.pdf>

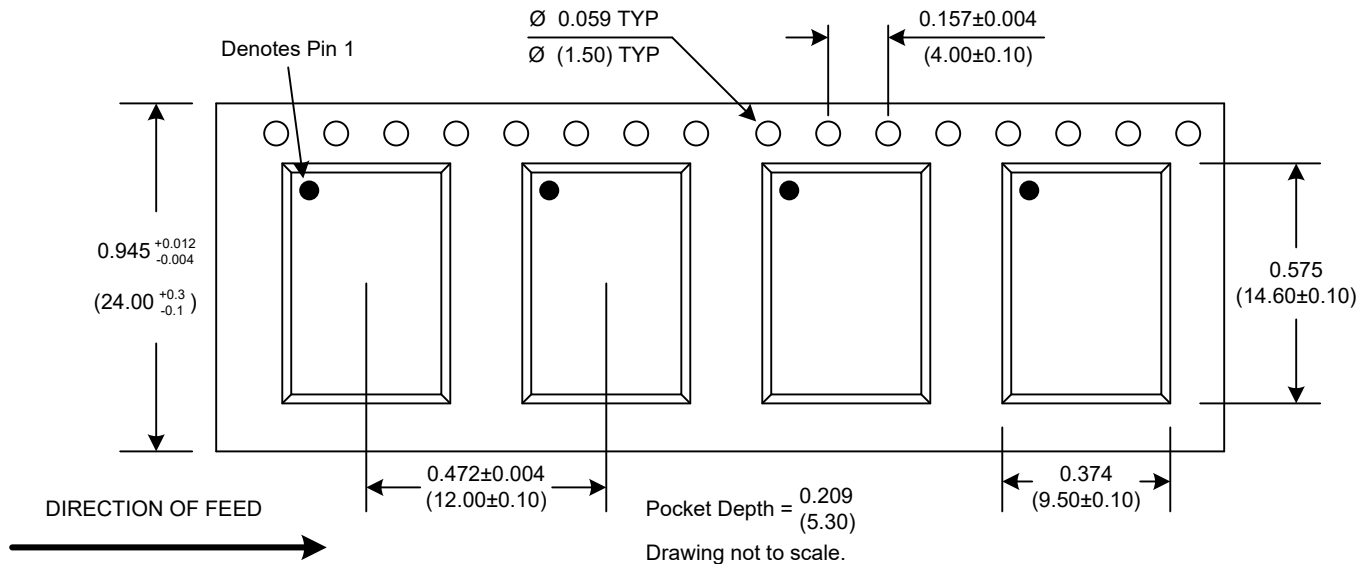
**SUGGESTED PAD LAYOUT**



Pad	Connection
1	Volt Control
2	GND
3	OUT
4	Vdd

**PAD FINISH:** Immersion Gold (ENIG); 5 micro inches maximum

**TAPE AND REEL**



**Mechanical:**

Shock: MIL-STD-883, Method 2002, Condition B  
Solderability: MIL-STD-883, Method 2003  
Vibration: MIL-STD-883, Method 2007, Condition A  
Solvent Resistance: MIL-STD-202, Method 215  
Resistance to Soldering Heat: MIL-STD-202, Method 210, Condition I or J

**Environmental:**

Thermal Shock: MIL-STD-883, Method 1011, Condition A  
Moisture Resistance: MIL-STD-883, Method 1004

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