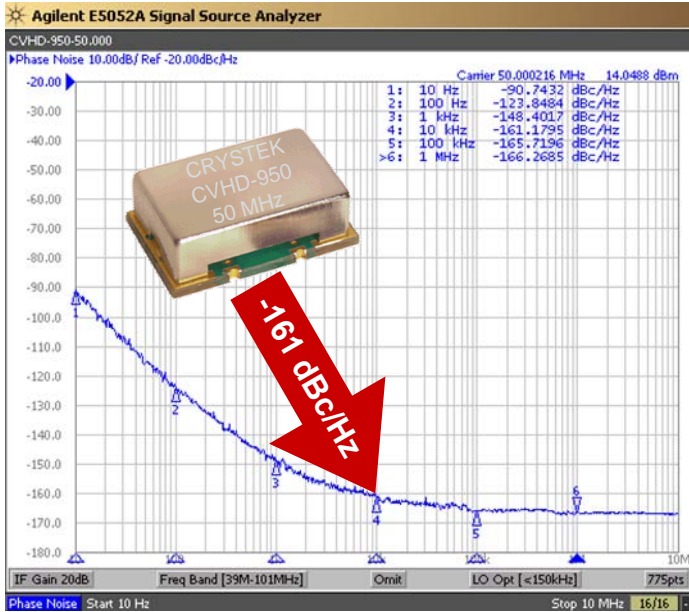


# CVHD-950 VCXO

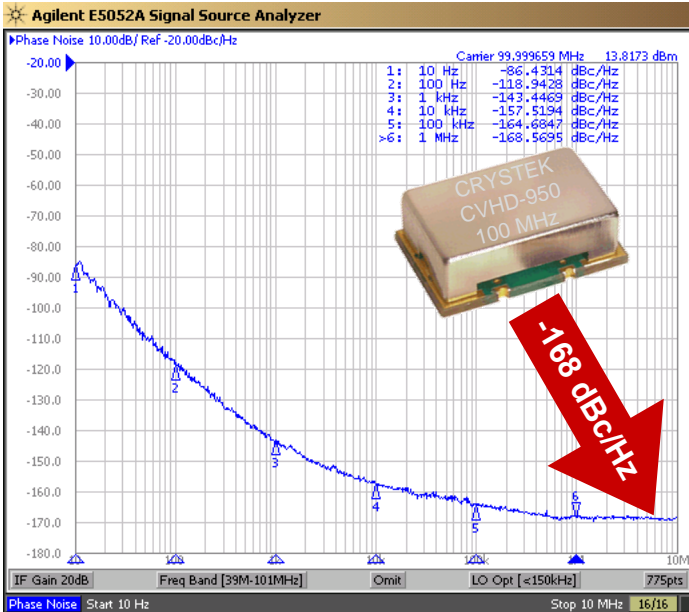
## Ultra-Low Phase Noise Oscillators

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

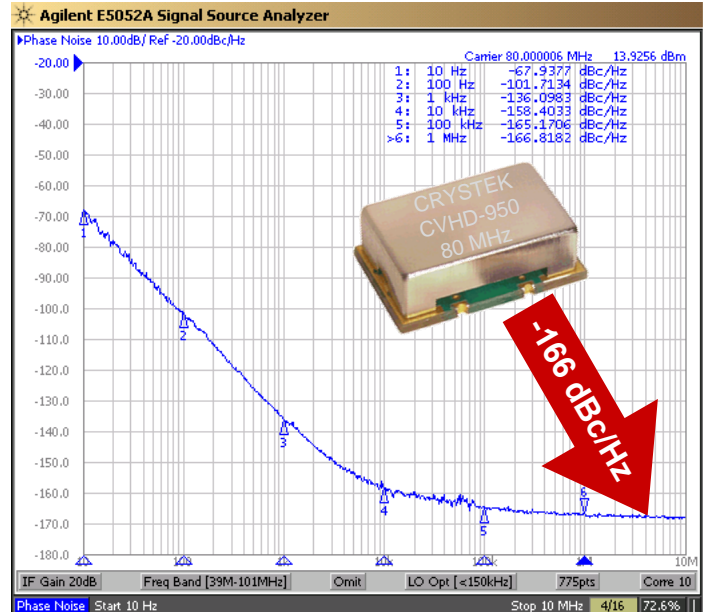
**50 MHz HCMOS 3.3V**



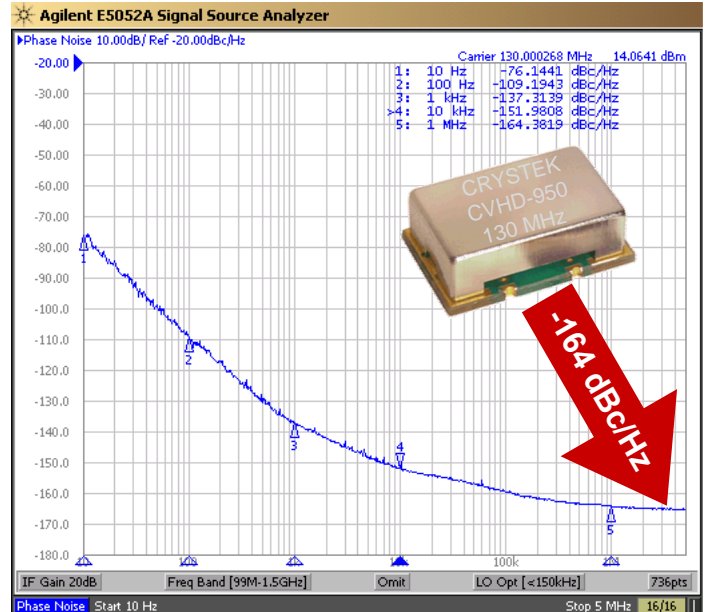
**100 MHz HCMOS 3.3V**



**80 MHz HCMOS 3.3V**



**130 MHz HCMOS 3.3V**



**Model CVHD-950 is a 50 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 -165 dBc/Hz phase noise floor with 3.3Vdc input voltage, -40°C to +85°C operating temperature, and 9x14 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



**Frequency Range:** 50 MHz to 130 MHz  
**Temperature Range:** 0°C to +70°C (standard)  
 (Option M) -20°C to +70°C  
 (Option X) -40°C to +85°C  
**Storage:** -45°C to 90°C  
**Input Voltage:** 3.3V ±0.3V  
**Input Current:** 15mA Typical, 25mA Max  
**Output:** CMOS  
**Symmetry:** 45/55% Max @ 50% Vdd  
**Rise/Fall Time:** 3nsec Max @ 20% to 80% Vdd  
**Logic:** "0" = 10% Vdd Max  
 "1" = 90% Vdd Min  
**Load:** 15pF  
**Output Current:** ±24mA Max  
**Input:**  
**Modulation Bandwidth:** >10kHz @ -3dB  
**Impedance:** 51 kΩ  
**Control Voltage:** 1.65V ±1.65V  
**Tuning Sensitivity:** +25ppm/V Typical  
**Frequency Pulling:** ±20ppm APR Min  
 (Inclusive of frequency stability, calibration, and aging.)  
**Linearity:** ±10% Max  
**Phase Jitter (12kHz~80MHz):** 0.13psec Typical @ 100MHz  
**Phase Noise Floor:** -165dBc/Hz Typical, -160dBc/Hz Max  
**Sub-harmonics:** None  
**Aging:** <3ppm 1<sup>st</sup> year, <1ppm thereafter

### Typical Phase Noise:

1kHz	-135 dBc/Hz
10kHz	-155 dBc/Hz
100kHz	-164 dBc/Hz
1MHz	-165 dBc/Hz

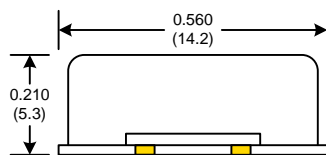
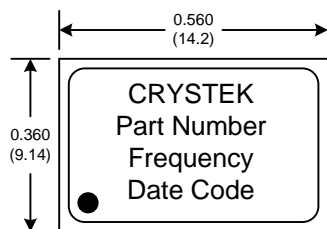
### Mechanical:

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

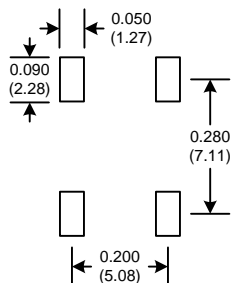
### Environmental:

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

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

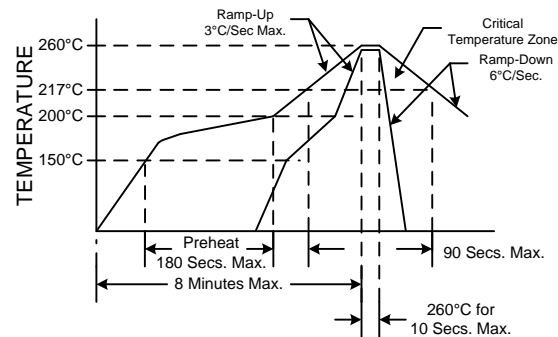


### SUGGESTED PAD LAYOUT



Pad	Connection
1	Volt Cntrl.
2	GND
3	OUT
4	Vdd

### RECOMMENDED REFLOW SOLDERING PROFILE



NOTE: Reflow Profile with 240°C peak also acceptable.

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