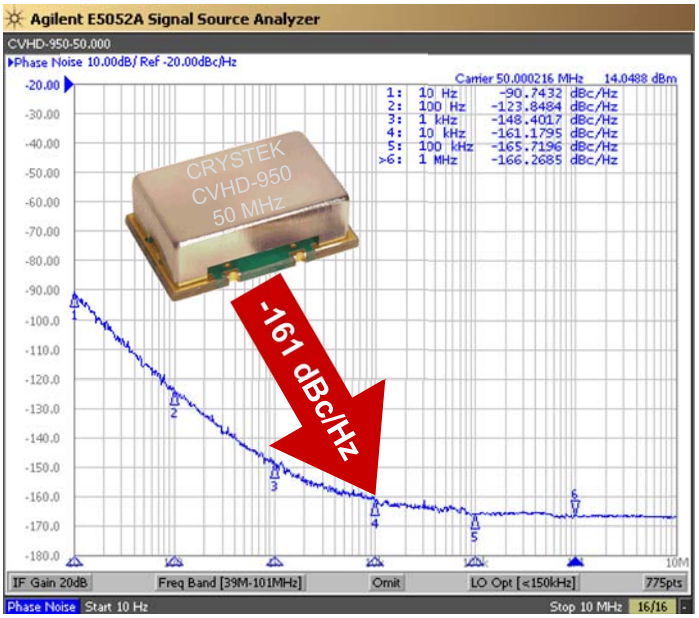
CRYSTEK CRYSTALS
A DIVISION OF CRYSTEK CORPORATION

RoHS Compliant

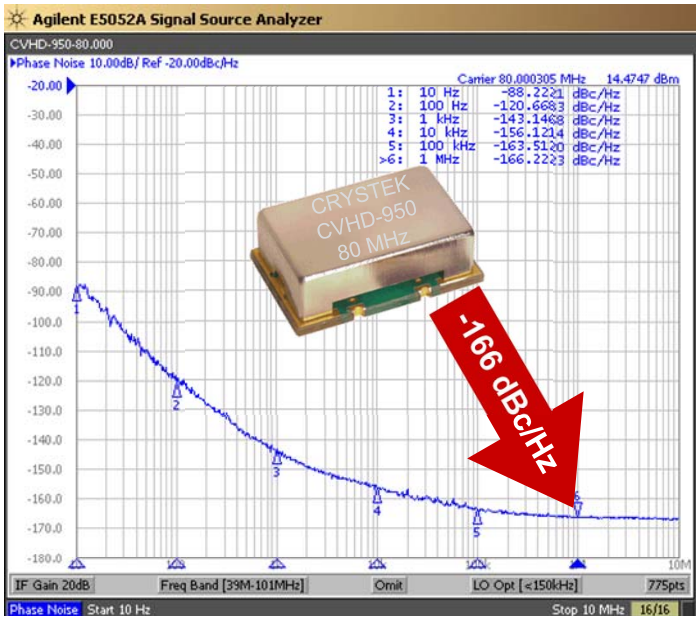
CVHD-950 VCXO Ultra-Low Phase Noise Oscillators

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

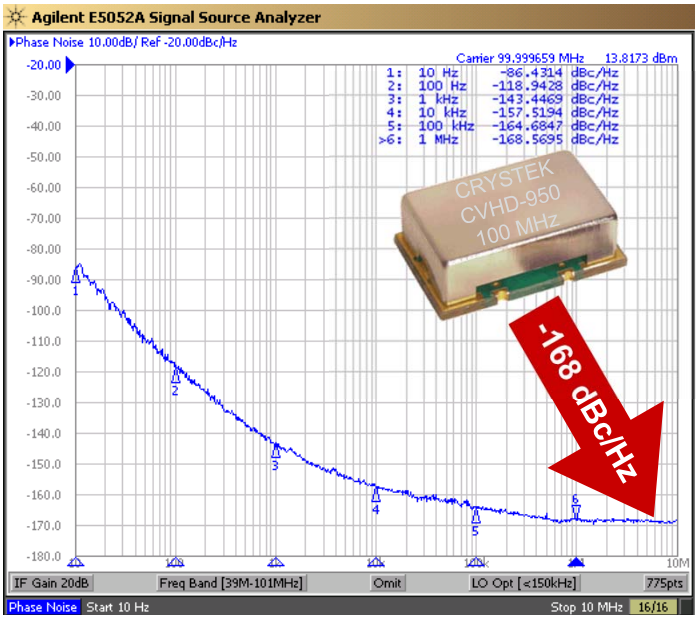
50 MHz HCMOS 3.3V



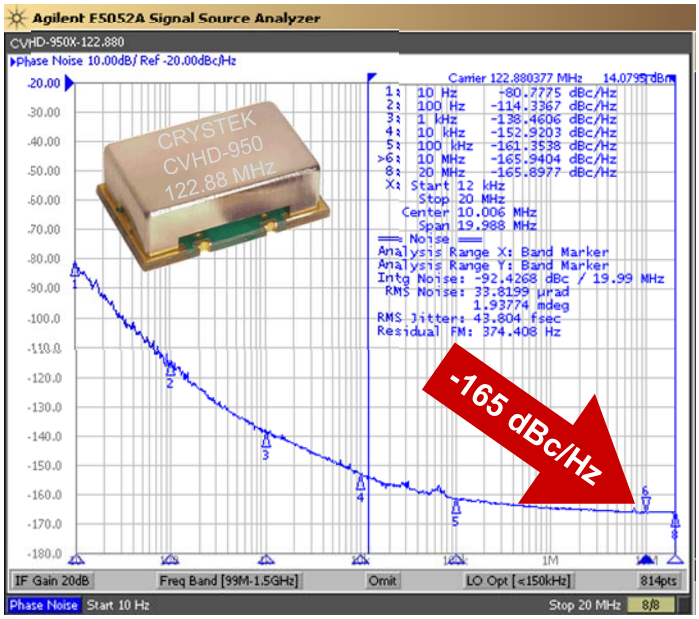
80 MHz HCMOS 3.3V



100 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 3rd 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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Date: 06-Sep-2017
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CVHD-950 Model
9×14 mm SMD, **3.3V, CMOS**

Frequency Range:	**40 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**
Supply Pushing:	**1.2ppm/V Typical**
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**
Input 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:	**±5% Max**
Phase Jitter (12kHz~20MHz):	**40 fsec Typical @100MHz**
Typical Phase Noise (100MHz):	
1kHz	**-140 dBc/Hz**
10kHz	**-155 dBc/Hz**
100kHz	**-164 dBc/Hz**
1MHz	**-166 dBc/Hz**
Phase Noise Floor:	**-166 dBc/Hz Typical, -162 dBc/Hz Max**
Sub-harmonics:	**None**
Aging:	**<3ppm 1st year, <1ppm thereafter**

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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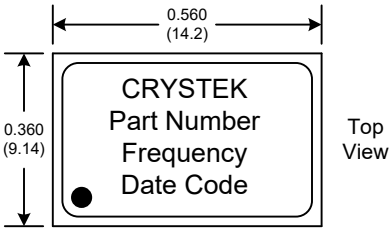
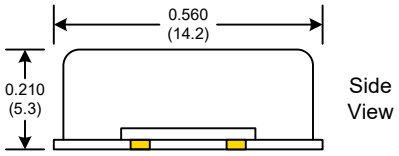
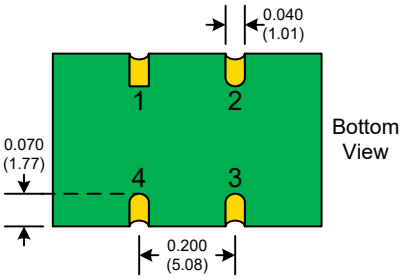
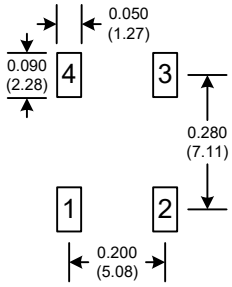






SUGGESTED PAD LAYOUT

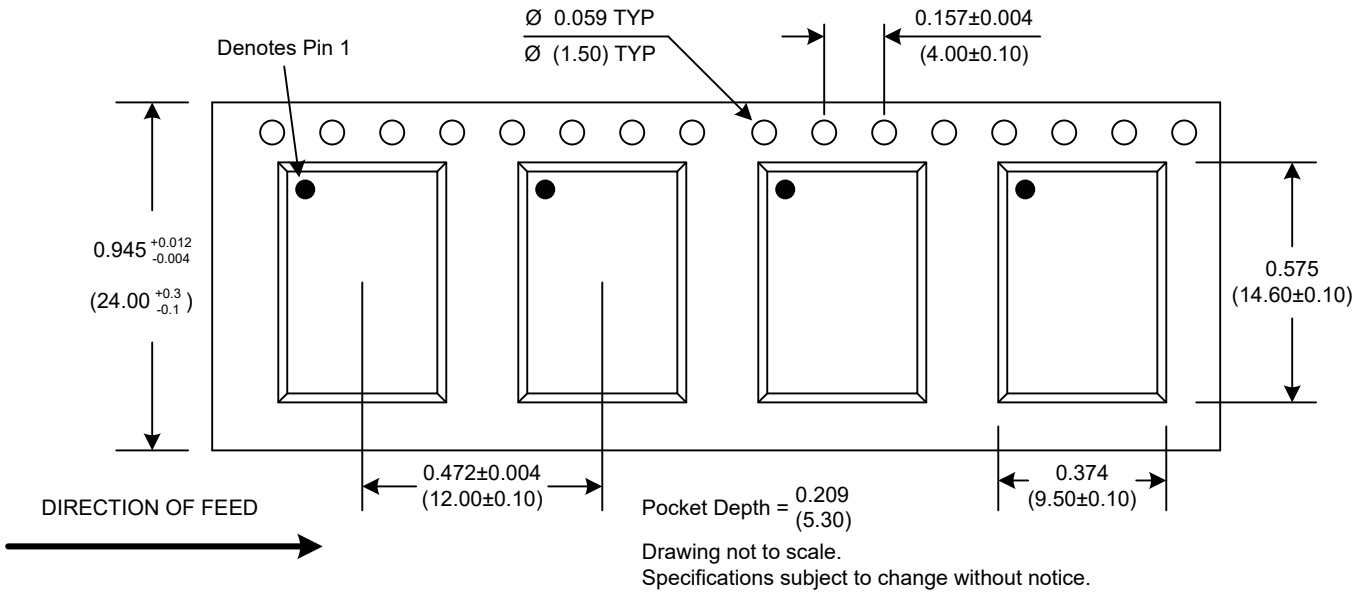


RECOMMENDED REFLOW SOLDERING PROFILE
900034 (See App Note listed on website)

Pad	Connection
1	Volt Control
2	GND
3	OUT
4	Vdd

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

TAPE AND REEL



Drawing not to scale.
Specifications subject to change without notice.

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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