



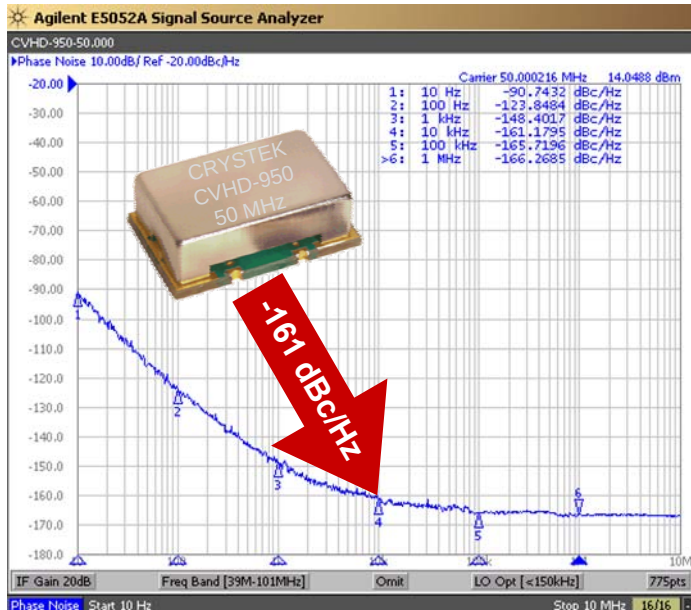
CRYSTEK
CRYSTALS
A DIVISION OF CRYSTEK CORPORATION



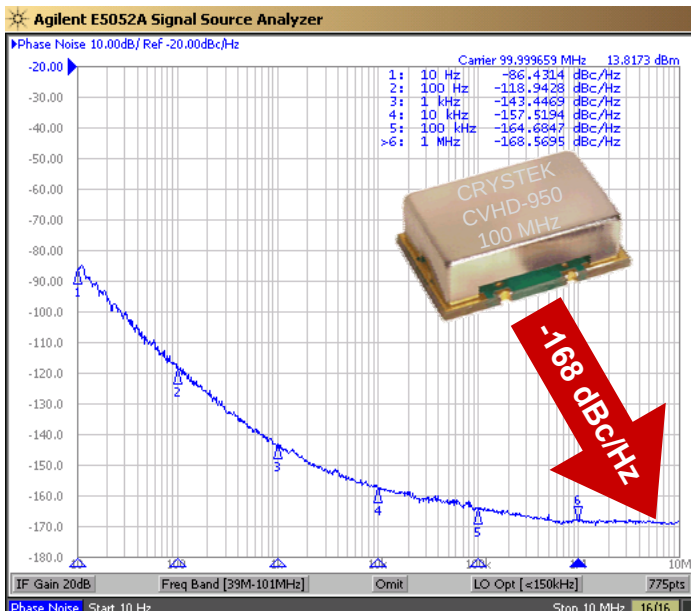
CVHD-950 VCXO Ultra-Low Phase Noise Oscillators

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

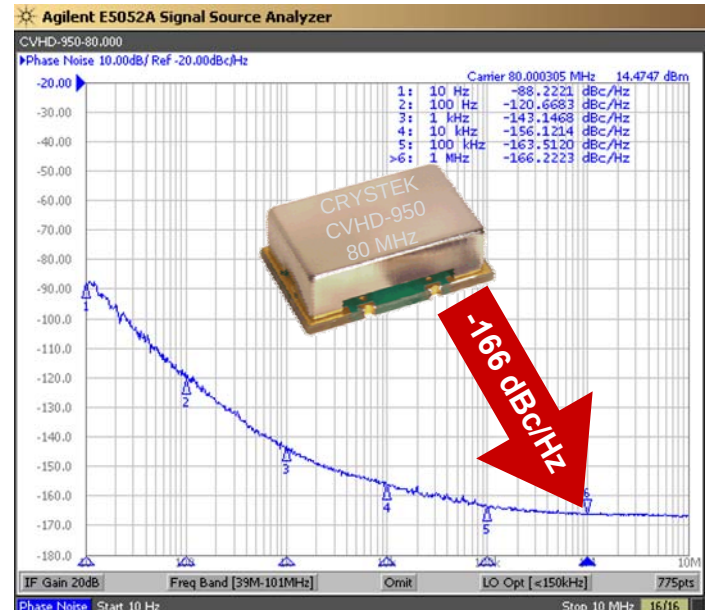
50 MHz HCMOS 3.3V



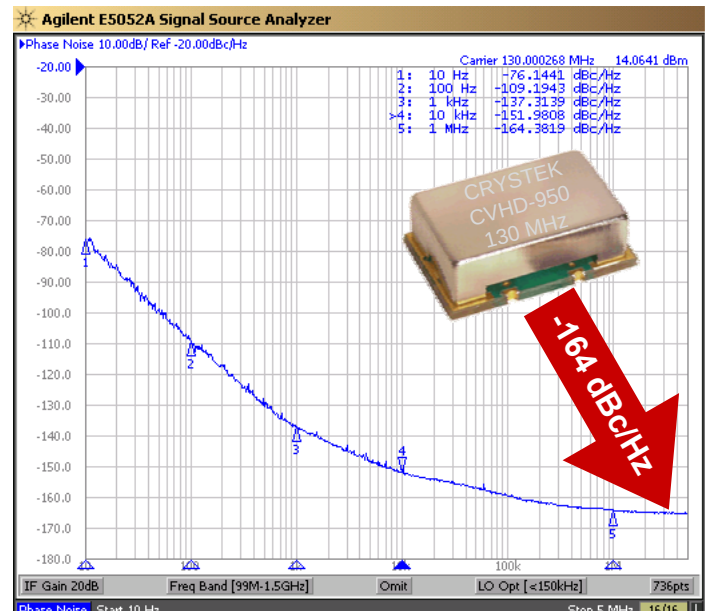
100 MHz HCMOS 3.3V



80 MHz HCMOS 3.3V



130 MHz HCMOS 3.3V



Model CVHD-950 is a 50 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 -165 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.**

Rev: P
Date: 08-Jan-2014
Page 1 of 2

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 1st year, <1ppm thereafter

Typical Phase Noise:

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

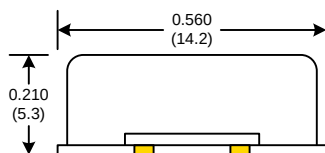
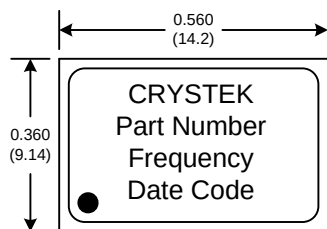
Mechanical:

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

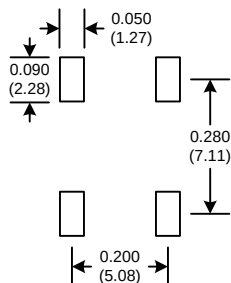
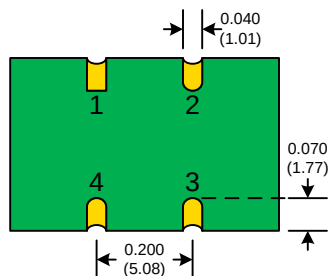
Environmental:

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

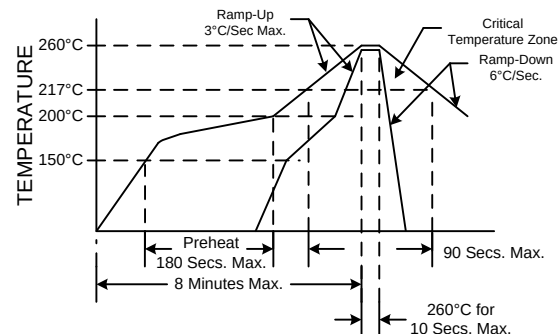


SUGGESTED PAD LAYOUT



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

RECOMMENDED REFLOW SOLDERING PROFILE



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

Rev: P
 Date: 08-Jan-2014
 Page 2 of 2