



**CRYSTEK**  
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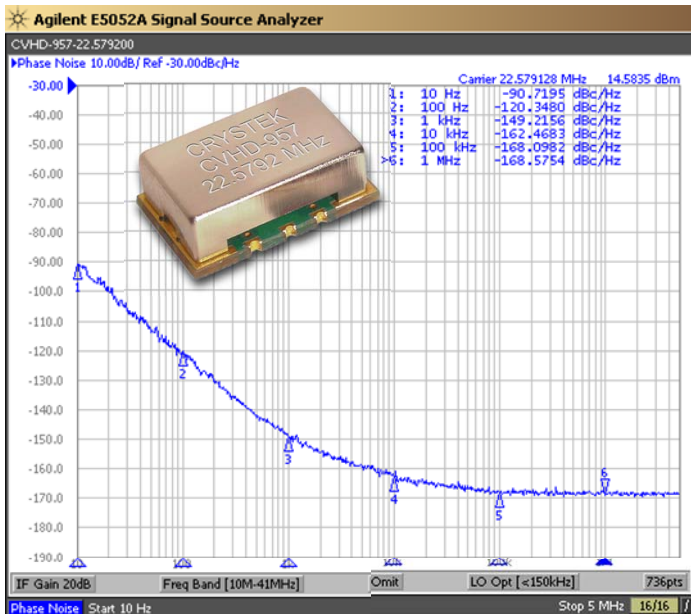
**CVHD-957 Model**  
**9×14 mm SMD, 3.3V, HCMOS**

**22.579200 MHz HCMOS 3.3V**

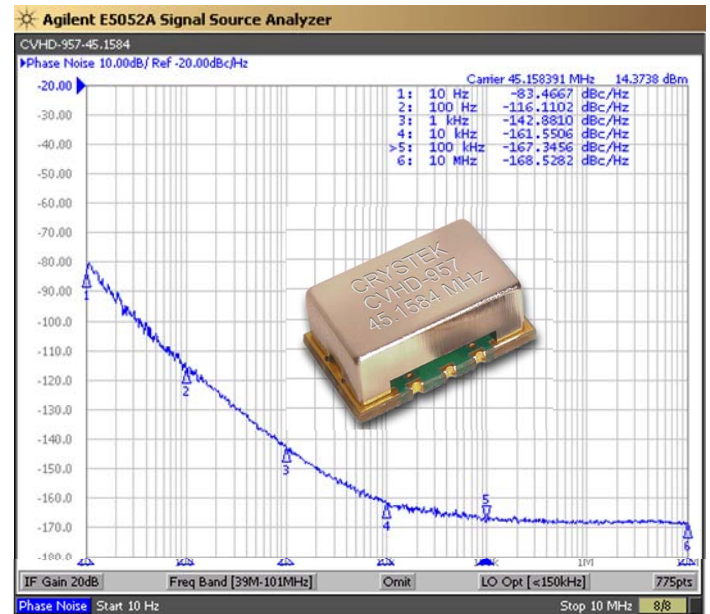
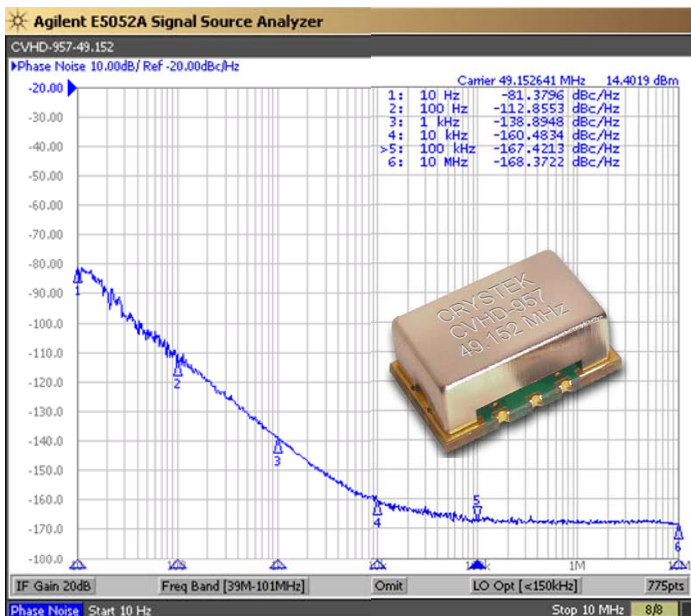


# CVHD-957 Ultra-Low Phase Noise VCXO with Standby Mode

**45.158400 MHz HCMOS 3.3V**



**49.152 MHz HCMOS 3.3V**



*Hear The Difference!!*

Crystek's Model CVHD-957 HCMOS VCXO family has been designed specifically for High Definition Audio (HD Audio). It features a typical low close-in phase noise of -90 dBc/Hz @ 10 Hz offset, and a noise floor of -168 dBc/Hz. With this extreme low phase noise performance, you will "Hear the Difference". It also features a "Standby Function", that is, when placed in disable mode, the internal oscillator is completely shut down in addition to its output buffer being placed in Tri-State. This family is housed in a 9×14 mm SMT package and operates with a +3.3V power supply.

Applications include: Digital Audio Broadcasting (DAB)  
Professional CD audio equipment  
DACs and ADCs for HD audio

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# CVHD-957

## Ultra-Low Phase Noise VCXO

### with Standby Mode



**CVHD-957 Model**  
**9x14 mm SMD, 3.3V, HCMOS**

<b>Frequency Range:</b>	10 MHz to 50 MHz
<b>Temperature Range:</b>	0°C to +70°C
<b>(Option M)</b>	-20°C to +70°C
<b>(Option X)</b>	-40°C to +85°C
<b>Storage:</b>	-45°C to 90°C
<b>Input Voltage:</b>	3.3V ±5%
<b>Input Current:</b>	15mA Typical, 25mA Max
<b>Input Current (Disabled Mode):</b>	1.5mA Max
<b>Input: Modulation Bandwidth:</b>	>10 kHz @ -3 dB
<b>Impedance:</b>	50 kOhm
<b>Control Voltage:</b>	1.65V ±1.65V
<b>Tuning Sensitivity:</b>	+85 ppm/V Typical
<b>Frequency Pulling:</b>	±100ppm Min, ±75ppm Min for 10 MHz variant
<b>Output:</b>	HCMOS
<b>Symmetry:</b>	40/60% Max @ 50% Vcc
<b>Rise/Fall Time:</b>	3ns Max @ 20% to 80% Vcc
<b>Logic:</b>	"0" = 10% Vcc Max "1" = 90% Vcc Min
<b>Load:</b>	15pF
<b>Output Current:</b>	±24mA Max
<b>Disable Time:</b>	200ns Max
<b>Start-up Time:</b>	1ms Typical, 2ms Max
<b>Pin 1 Disable Current:</b>	-350µA Max
<b>Phase Noise:</b>	-90 dBc/Hz at 10 Hz Typical for 22.5792 MHz and 24.576 MHz -80 dBc/Hz at 10 Hz Typical for 45.1584 MHz and 49.152 MHz
<b>Phase Noise Floor:</b>	-168 dBc/Hz Typical, -165 dBc/Hz Max
<b>Sub-harmonics:</b>	None
<b>Aging:</b>	<3ppm 1 <sup>st</sup> year, <1ppm thereafter

#### Mechanical:

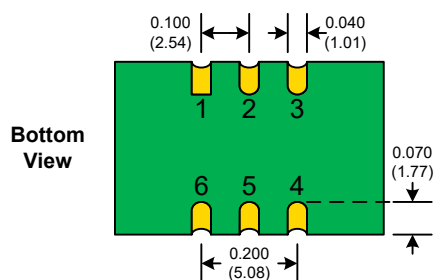
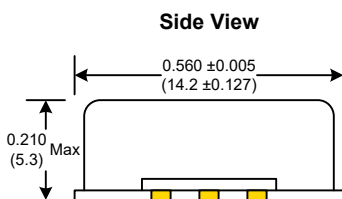
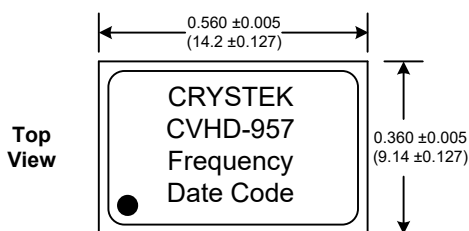
Shock:	MIL-STD-883, Method 2002, Condition B
Solderability:	MIL-STD-883, Method 2003
Vibration:	MIL-STD-883, Method 2007, Condition A
Solvent Resistance:	MIL-STD-202, Method 215
Resistance to Soldering Heat:	MIL-STD-202, Method 210, Condition I or J

#### Environmental:

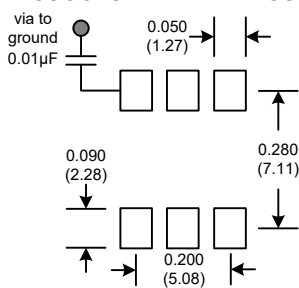
Thermal Shock:	MIL-STD-883, Method 1011, Condition A
Moisture Resistance:	MIL-STD-883, Method 1004

#### Developed Frequencies

22.5792 MHz
24.576 MHz
45.1584 MHz
49.152 MHz



#### SUGGESTED PAD LAYOUT



#### RECOMMENDED REFLOW SOLDERING PROFILE

900034 (See App Note listed on website)

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

Tri-State/Standby Function	
Function pin 2	Output pin
Open	Active
"1" level 0.7×Vcc Min	Active
"0" level 0.3×Vcc Max	High Z

PIN	Function
1	Control Volt
2	E/D
3	GND
4	OUT
5	NC
6	Vcc

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

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No liability is assumed as a result of its use or application.

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