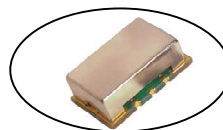


# Ultra-Low Phase Noise Voltage Controlled Crystal Oscillator

**Part Number CVHD-952**  
**9x14 mm SMD, 3.3V, HCMOS**

**Frequency Range:** 131.000 MHz to 200.000 MHz  
**Frequency Pulling:**  $\pm 20$  ppm APR Min  
**Temperature Range:** 0°C to 70°C (standard)  
 (Option X): -40°C to 85°C  
**Storage:** -45°C to 90°C  
**Input Voltage:** 3.3 V  $\pm 0.3$  V  
**Control Voltage:** 1.65 V  $\pm 1.65$  V  
**Input Current:** 25 mA Typical, 35 mA Max  
**Output:** HCMOS  
 Symmetry: 45/55% Max @ 50% Vdd  
 Rise/Fall Time: 2ns Max @ 20% to 80% Vdd  
 Linearity:  $\pm 10\%$  Max  
 Logic: "0" = 10% Vdd Max  
 "1" = 90% Vdd Min  
 Load: 15 pF  
 Output current:  $\pm 24$  mA Max  
 Disable Time: 200 ms Max  
 Enable Time: 200 ms Max  
**Jitter:** 12 kHz to 80 MHz 0.5 psec Typical, 1 psec RMS Max  
**Phase Noise (Typical):**  
 1 Hz: -40 dBc/Hz  
 10 Hz: -70 dBc/Hz  
 100 Hz: -100 dBc/Hz  
 1 kHz: -130 dBc/Hz  
 10 kHz: -148 dBc/Hz  
 100 kHz: -150 dBc/Hz

**Sub-Harmonic @ Fo/2:** -35 dBc Max  
**Aging:** <3 ppm 1<sup>st</sup> year, <1 ppm every year thereafter



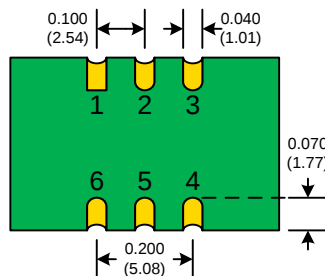
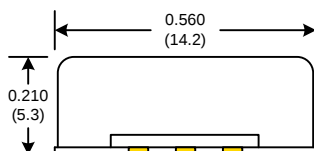
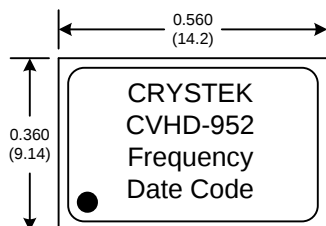
Available Frequencies (MHz):

148.351600 148.500

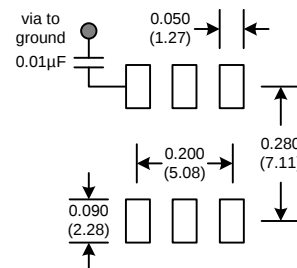
Applications:

HD Video Broadcast Equipment

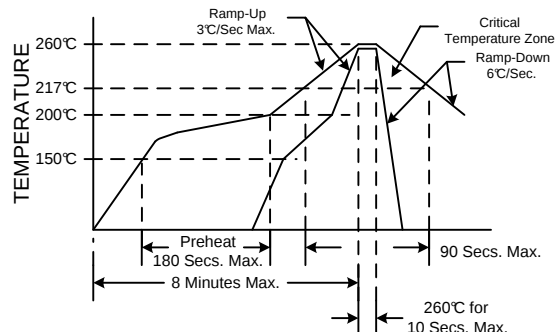
| PIN | Function     |
|-----|--------------|
| 1   | Control Volt |
| 2   | E/D          |
| 3   | GND          |
| 4   | OUT          |
| 5   | No Connect   |
| 6   | Vdd          |



## SUGGESTED PAD LAYOUT



## RECOMMENDED REFLOW SOLDERING PROFILE



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

## 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

Rev: B

Date: 30-Oct-12

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\*\* APR= Absolute Pulling Range inclusive of all conditions