

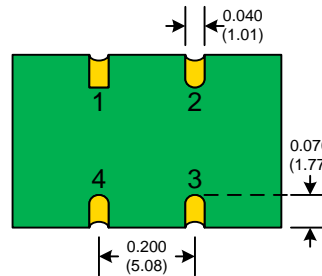
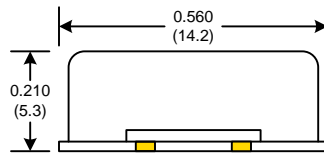
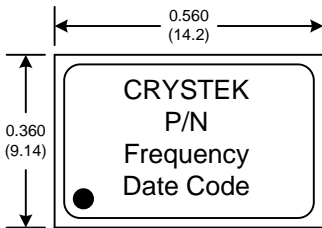
# Low Jitter, High Pull Voltage Controlled Crystal Oscillator

## CVHD-965 Model 9x14 mm SMD, 5V, HCMOS

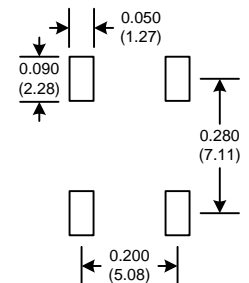
<b>Frequency Range:</b>	14 MHz to 49.152 MHz
<b>Frequency Stability:</b>	±30ppm
<b>Frequency Pulling:</b>	(Blank) ±100ppm Min (Std)
	(Option A) ±150ppm Min
	(Option B) ±200ppm Min
<b>Temperature Range:</b>	0°C to 70°C
	(Option M) -20°C to 70°C
	(Option X) -40°C to 85°C
<b>Storage:</b>	-45°C to 90°C
<b>Input Voltage:</b>	5V ±0.5V
<b>Control Voltage:</b>	2.5V ±2.0V
<b>Input Current:</b>	30mA Typical, 50mA Max
<b>Output:</b>	HCMOS
	Symmetry: 45/55% Max @ 50% Vdd
	Rise/Fall Time: 3ns Max @ 20% to 80% Vdd
	Linearity: ±10% Max
	Logic: "0" = 10% Vdd Max
	"1" = 90% Vdd Min
	Load: 30pF
<b>Jitter:</b>	12kHz to 80MHz 0.5psec Typical, 1psec RMS Max
<b>Phase Noise Floor:</b>	-160 dBc/Hz Typical, -155 dBc/Hz Max Guaranteed
<b>Sub-Harmonics:</b>	None
<b>Aging:</b>	<3ppm 1 <sup>st</sup> year, <1ppm every year thereafter



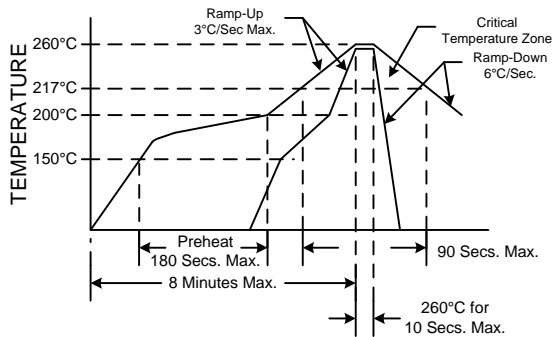
Designed using fundamental UM-1 crystal to achieve Low Jitter and High Pull performance. Perfect for any application requiring high pull but extremely low jitter. Available in 3.3 Volt version, see CVHD-960 Model.



### SUGGESTED PAD LAYOUT



### RECOMMENDED REFLOW SOLDERING PROFILE



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

PIN	Function
1	Volt Cont.
2	GND
3	OUT
4	Vdd

### Crystek Part Number Guide

CVHD - 965 - X - X - 16.384

#1 #2 #3 #4 #5

#1 Crystek SMD HCMOS Osc.  
#2 Model 965 = 9x14mm smd 4pad 5.0V  
#3 Temp. Range: Blank = 0/70°C, M= -20/70°C, X= -40/85°C  
#4 Frequency Pulling: (see Table 1)  
#5 Frequency in MHz: 3 or 6 decimal places

#### Frequency Pulling

Blank (std)	± 100ppm
A	± 150ppm
B	± 200ppm

Table 1

Examples:

CVHD-965B-49.152 = 5.0V, 45/55, 0/70°C, 200ppm, 16.384 MHz  
CVHD-965MA-49.152 = 5.0V, 45/55, -20/70°C, 150ppm, 16.384 MHz

Specifications subject to change without notice.

TD-030901 Rev. G