CRYSTEK CRYSTALS
A Division of Crystek Corporation

CCLD-033 5×7mm SMD LVDS Clock Oscillator

CCLD-033 Model
5×7 mm SMD, 3.3V, LVDS

RoHS Compliant

Model CCLD-033 is a 77.760 MHz to 161.000 MHz LVDS Clock Oscillator operating at 3.3 Volts. The oscillator utilizes a High Q Third Overtone crystal design providing very low Jitter and Phase Noise. No Sub-Harmonics are present in the Output Signal.

5×7mm SMD

Applications:

Digital Video
SONET/SDH/DWDM
Storage Area Networks
Broadband Access
Ethernet, Gigabit Ethernet

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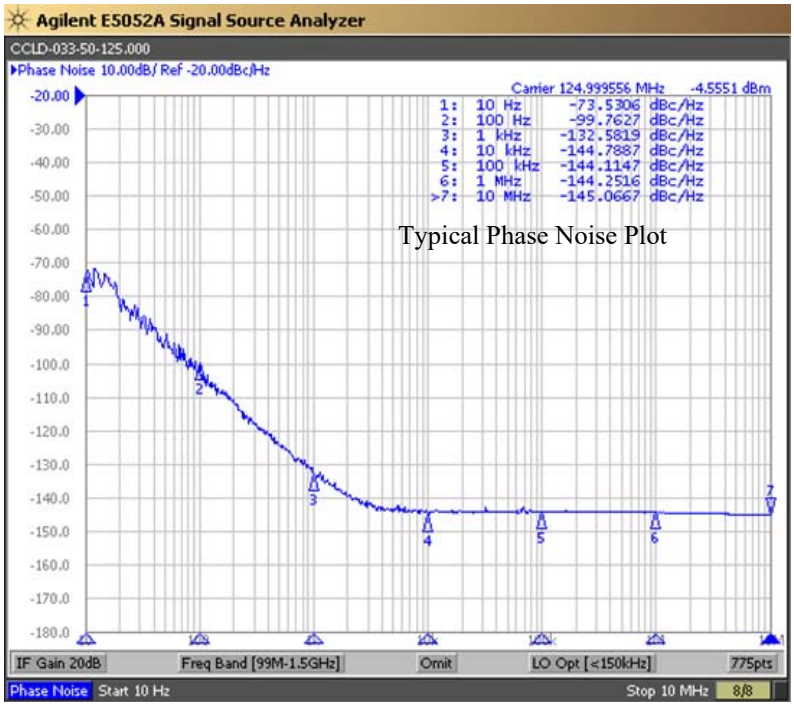
Frequency Range:	**77.760 MHz to 161.000 MHz**
Frequency Stability Options(ppm):	**±20, ±25, ±50, ±100**
Temperature Range:	**(standard) 0°C to +70°C**
(Option M)	**-20°C to +70°C**
(Option X)	**-40°C to +85°C**
Storage:	**-45°C to 90°C**
Input Voltage:	**3.3V ± 0.3V**
Input Current:	**45mA Typical, 66mA Max**
Standby Current:	**30uA Max**
Output:	**Differential LVDS**
Symmetry:	**45/55% Max @ zero crossing point**
Rise/Fall Time:	**1ns Max (20% to 80%)**
Load:	**100 Ohms Connected between OUT and COUT**
Logic:	
Output Voltage Levels	**"0"=0.90 Min, 1.10 Typical**
	"1"=1.43 Typical, 1.60 Max
Differential Output Voltage:	**247mV Min, 454mV Max**
Disable Time:	**200ns Max**
Start-up Time:	**10ms Max**
Phase Jitter: 12kHz~80MHz	**0.5ps Typical, 1ps RMS Max**
Phase Noise: (See Plot Below)	
Sub-harmonics:	**None**
Aging:	**<3ppm 1st year, <1ppm every year thereafter**



Typical Phase Noise Plot

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Specifications subject to change without notice.

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Crystek Part Number Guide

CCLD - 033 X - 50 - 155.520
#1 #2 #3 #4 #5

#1 Crystek LVDS Osc.
#2 Model 033
#3 Temp Range: Blank = 0/70°C, M = -20/70°C, X = -40/85°C
#4 Stability: (see Table 1)
#5 Frequency in MHz: 3 or 6 decimal places

Example:
CCLD-033X-50-155.520
3.3V, -40/85°C, ±50ppm, 155.520 MHz

Stability Indicator	
Blank	± 100ppm
50	± 50ppm
25	± 25ppm
20*	± 20ppm

*not available in -40/85

Table 1

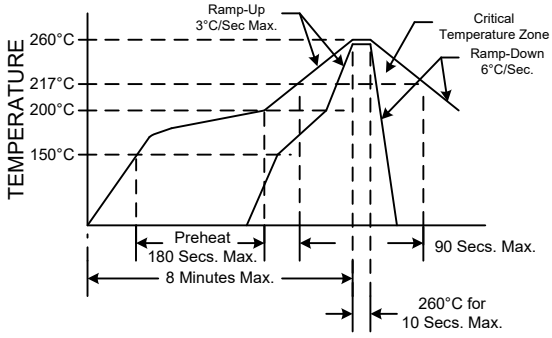
Mechanical:

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

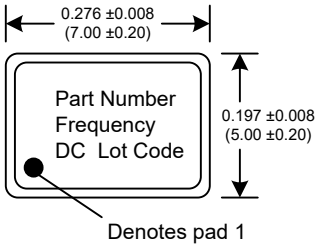
Environmental:

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

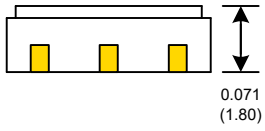
RECOMMENDED REFLOW SOLDERING PROFILE



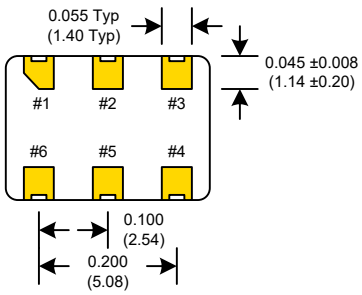
NOTE: Reflow Profile with 240°C peak also acceptable.



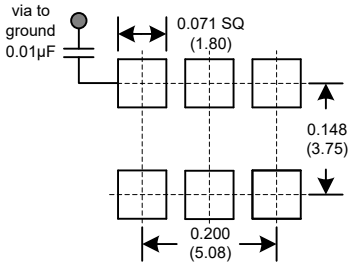
Dimensions inches (mm)
All dimensions are Max unless otherwise specified.



Enable/Disable	
Function pin 1	Output pin
Open or N/C	Active
"1" level 0.7×Vdd Min	Active
"0" level 0.3×Vdd Max	High Z



SUGGESTED PAD LAYOUT



0.01uF Bypass Capacitor Recommended

PIN	Connection
1	Enable/Disable
2	N/C
3	GND
4	Output
5	Comp Output
6	Vcc

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