CRYSTEK CRYSTALS
A DIVISION OF CRYSTEK CORPORATION

CCLD-034 5x7mm SMD LVDS Clock Oscillator

3.3 Volts

RoHS Compliant

Model CCLD-034 is a 162.000Mhz to 312.500MHz LVDS Clock Oscillator operating at 3.3Volts. 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.

5x7mm SMD

Applications:

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

CRYSTEK CORPORATION
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Rev.: G
Date: 09-10-09

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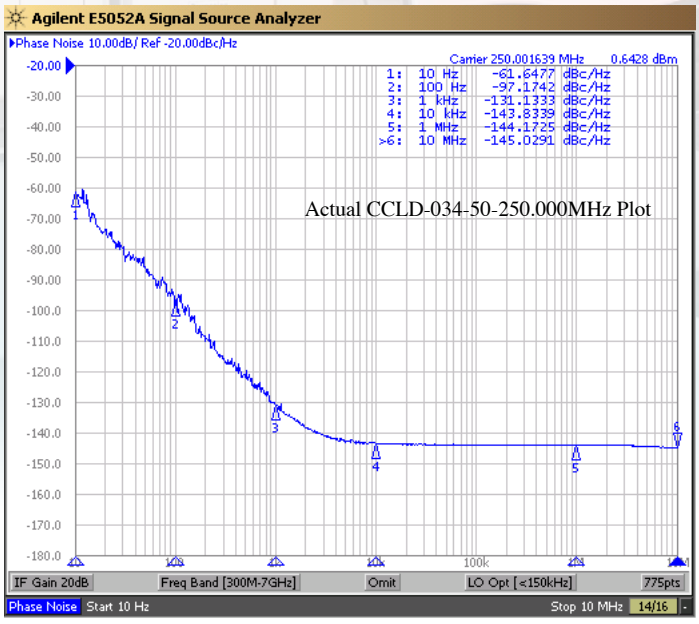
Frequency Range:		**162.000Mhz to 312.500Mhz**
Frequency Stability Options(ppm):		**±20, ±25, ±50, ±100**
Temperature Range: (standard)		**0°C to +70°C**
	(Option M)	**-20°C to +70°C**
	(Option X)	**-40°C to +85°C**
Storage:		**-55°C to 120°C**
Input Voltage:		**3.3V ± 0.3V**
Input Current:		**45mA Typ., 66mA Max**
Output:		**Differential LVDS**
Symmetry:		**45/55% Max @ 50%Vdd**
Rise/Fall Time:		**1nsec Max @ 20% to 80% Vdd**
Load:	**100 Ohms**	**Connected between OUT and COUT**
Logic:		
	Output Voltage Levels	**"0"=0.90 Min., 1.10 Typ.**
		"1"=1.43 Typ., 1.60 Max
Differential Output Voltage:		**247mV Min., 454mV Max**
	Disable Time	**200nSec Max**
	Enable Time	**2mSec Max**
Phase Jitter:	**12KHz~80MHz**	**0.5psec Typ., 1psec RMS Max**
Phase Noise:	**(See Plot Below)**	
Sub-harmonics:		**None**
Aging:		**<3ppm 1st/yr, <1ppm every year thereafter**



Actual CCLD-034-50-250.000MHz Plot

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PART NUMBER GUIDE

CCLD - 034 X - 50 - 311.040
#1 #2 #3 #4 #5

#1 Crystek LVDS Osc.
#2 Model 034
#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-034X-50-311.040
3.3V, -40/85°C, ±50ppm, 311.0400 MHz

Stability Indicator	
Blank(std)	±100ppm
50	±50ppm
25	±25ppm
20	±20ppm
Table 1	

Standard Values
(±50ppm, 0/70°C)
200.000MHz
212.500MHz
250.000MHz
311.040MHz
312.500MHz

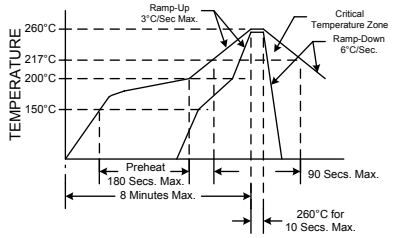
Mechanical:

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

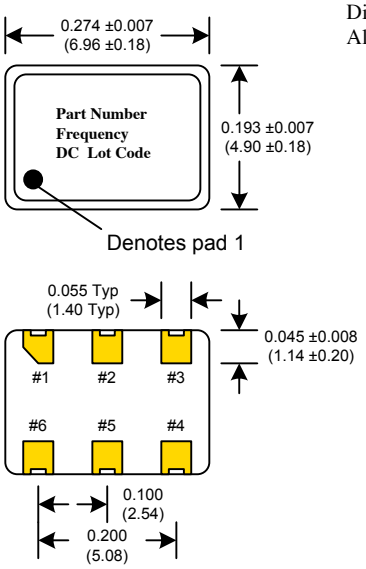
Environmental:

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

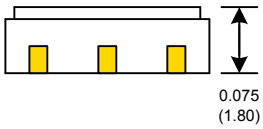
RECOMMENDED REFLOW SOLDERING PROFILE



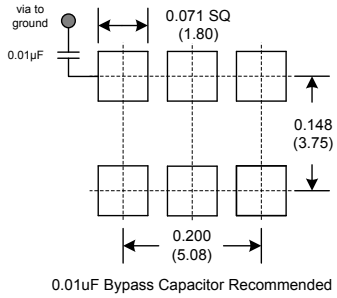
NOTE: Reflow Profile with 240°C peak also acceptable.



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



SUGGESTED PAD LAYOUT



0.01uF Bypass Capacitor Recommended

Tri-State Function	
Pin #1 State	Output State
Open or N/C	Active
"1" level 0.7*Vcc Min	Active
"0"level 0.3*Vcc Max	High Z

Pad	Connection
1	Enable/Disable
2	N/C
3	GND
4	Out
5	Comp. Out
6	VCC

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