CRYSTAL CLOCK OSCILLATORS

Data Sheet 0634R

Rev. -

CMOS

AC-A1460 Series

Description

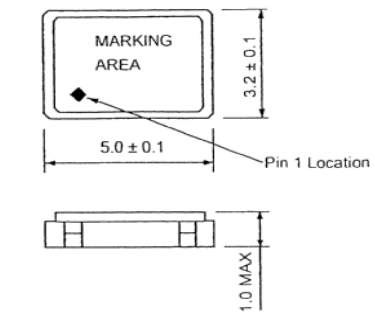
The **AC-A1460 Series** of quartz crystal oscillators provide enable/disable 3-state CMOS compatible signals for bus connected systems. Supplying Pin 1 of the AC-A1460 units with a logic "1" or open enables its Pin 3 output. In the disable mode, Pin 3 presents a high impedance to the load.

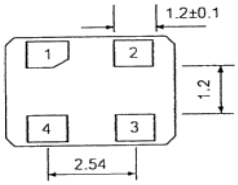
Features

- Wide frequency range 0.5MHz to 156.250MHz
- User specified tolerance available
- Space-saving alternative to discrete component oscillators
- 3.3 Volt operation
- High shock resistance, to 1000g
- Low Jitter
- High Q Crystal actively tuned oscillator circuit
- No internal PLL avoids cascading PLL problems
- High frequencies due to proprietary design
- Metal lid electrically connects to ground to reduce EMI
- Gold plated pads
- RoHs Compliant, Lead Free Construction

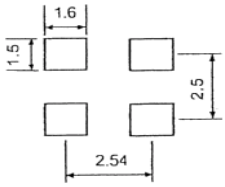
Electrical Connection

Pin	Connection
1	Enable/Disable
2	Ground
3	Output
4	V_{DD}





Recommended Solder Pad Layout



All dimensions are typical unless otherwise specified

Dimensions in Millimeters

NEL FREQUENCY CONTROLS, INC.

357 Beloit Street, P.O. Box 457, Burlington, WI 53105-0457 U.S.A. Phone 262/763-3591 FAX 262/763-2881
Email: nelsales@nelfc.com www.nelfc.com

AC-A1460 Series Continued
CMOS

Rev. -

Operating Conditions and Output Characteristics

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	-----	-----	0.5MHz	-----	156.250MHz
Duty Cycle	-----	@ $V_{DD}/2$	45/55%	-----	55/45%
Logic 0	V_{OL}	@ 600µA	-----	0.1V	0.2V
Logic 1	V_{OH}	@ 600µA	V_{DD}-0.2V	V_{DD}-0.1V	-----
Rise & Fall Time	tr,tf	10-90%V_O	-----	1.0 ns	2.0 ns
Jitter, RMS(2)	-----	Overtone	-----	-----	5 psec
T_{pz}	-----	-----	-----	-----	100 ns
Enable Voltage	-----	-----	2.0V	-----	-----
Disable Voltage	-----	-----	-----	-----	0.8V
Frequency Stability (3)	dF/F	Overall conditions including: voltage, calibration, temp., 10 yr aging, shock, vibration	-100ppm	-----	+100ppm

General Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Supply Voltage (1)	V_{DD}	-----	3.00V	3.3V	3.60V
Supply Current	I_{DD}	No Load	0.0 mA	40 mA	60 mA
Output current	I_O	Low level Output Current	0.0 mA	-----	±25.0 mA
Operating temperature	T_A	------	0°C	-----	70°C
Storage temperature	T_S	-----	-55°C	-----	125°C
Power Dissipation	P_D	-----	-----	-----	216 mW
Solder temperature	T_L	4 minutes	-----	-----	253°C
Load	-----	-----	-----	-----	15pf
Start-up Time	t_s	-----	-----	-----	10 ms

Environmental and Mechanical Characteristics

Mechanical Shock	Per MIL-STD-202, Method 213, Condition E
Thermal Shock	Per MIL-STD-883, Method 1011, Condition A
Vibration	0.060" double amplitude 10 Hz to 55 Hz, 35g's 55Hz to 2000 Hz
Hermetic Seal	Leak rate less than 1 x 10^{-8} atm.cc/sec of helium

Footnotes:
1) External high frequency power supply decoupling required.
2) RMS jitter bandwidth of 12kHz to 20MHz.
3) Standard frequency stability (others available)

Creating a Part Number

AC - A146X - FREQ

Package Code
AC 4 pad 5x3.2mm SMD

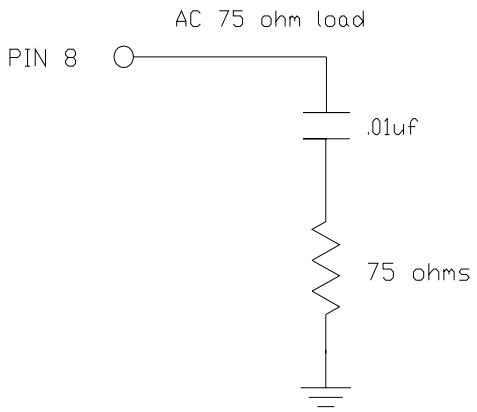
Input Voltage

Code	Specification
A	3.3V

Tolerance/Performance

0	±100ppm 0-70°C
1	±50ppm 0-70°C
7	±25ppm 0-70°C
9	Customer Specific
A	±20ppm 0-70°C
B	±50ppm -40 to +85°C
C	±100ppm -40 to +85°C

Test Load:



NEL FREQUENCY CONTROLS, INC.
357 Beloit Street, P.O. Box 457, Burlington, WI 53105-0457 U.S.A. Phone 262/763-3591 FAX 262/763-2881
Email: nelsales@nelfc.com www.nelfc.com