CRYSTAL CLOCK OSCILLATORS

Data Sheet 1231A

Rev. -

LVCMOS

A2-X14AXX Series

Description

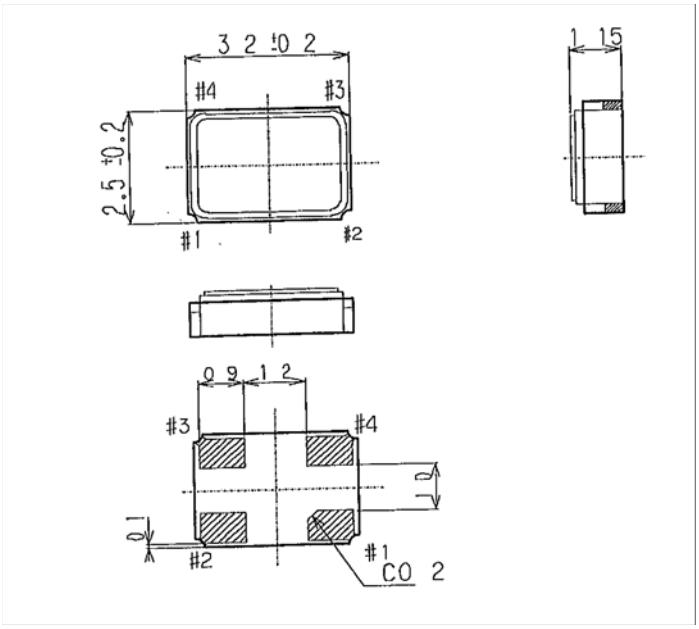
The **A2-X14AXX Series** of quartz crystal oscillators provide enable/disable 3-state LVCMOS compatible signals for bus connected systems. Supplying Pin 1 of the A2-X14AXX units with a logic "1" or open enables its Pin 3 output. In the disable mode, Pin 3 presents a high impedance to the load.

Features

- Wide frequency range–1.0MHz to 133.0MHz
- User specified tolerance available
- Space-saving alternative to discrete component oscillators
- 1.8, 2.5, 3.3 Volt operation
- Low Jitter - Wavecrest jitter characterization available
- COTS/Dual use
- High Q Crystal actively tuned oscillator circuit
- No internal PLL avoids cascading PLL problems
- Metal lid electrically connected to ground to reduce EMI
- Gold plated pads
- RoHS Compliant, Lead Free Construction

Electrical Connection

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



NEL FREQUENCY CONTROLS, INC.

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A2-X14AXX Series Continued
LVCMOS

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Operating Conditions and Output Characteristics

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	-----	-----	1.0MHz	-----	133.0MHz
Duty Cycle	-----	@ $V_{DD}/2$	45/55%	-----	55/45%
Logic 0	V_{OL}	@ 600µA	-----	-----	0.2V
Logic 1	V_{OH}	@ 600µA	V_{DD}-0.2V	-----	-----
Rise & Fall Time	tr,tf	10-90%V_O	-----	-----	5.0 ns
Enable Voltage	-----	-----	0.7xVcc	-----	-----
Disable Voltage	-----	-----	-----	-----	0.3xVcc
Frequency Stability	dF/F	Overall conditions including: voltage, calibration, temp., 10 yr aging, shock, vibration	-50ppm	-----	+50ppm

General Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Supply Voltage	V_{DD}	3.3V±10%	2.97V	3.3V	3.63V
		2.5V±5%	2.375V	2.5V	2.625V
		1.8V±5%	1.71V	1.8V	1.89V
Supply Current	I_{DD}	No Load	0.0 mA	-----	40 mA
Standby current		-----	-----	-----	10uA
Operating temperature	T_A	------	-20°C	-----	70°C
Storage temperature	T_S	-----	-55°C	-----	125°C
Load	-----	-----	-----	-----	15pf
Start-up Time	t_s	-----	-----	-----	10 ms

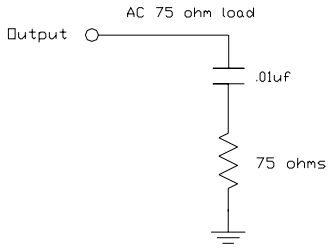
Environmental and Mechanical Characteristics

Hermetic Seal — Leak rate less than 1 x 10^{-8} atm.cc/sec of helium

Footnotes:

1) Jitter performance is frequency dependent. Please contact factory for full Wavecrest characterization.
2) If phase noise data at a particular frequency is needed, contact factory.

Test Load:



Creating a Part Number

A2 - X 14A X X - FREQ

Package Code
A2 4 pad 3.2x2.5mm SMD

Input Voltage

Code	Specification
A	3.3V
B	2.5V
C	1.8V

Tolerance

1	±50ppm
2	±30ppm
3	±20ppm
9	Customer Specific

Temperature Range

1	-20°C to 70°C
9	Customer Specific

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A2-X14AXX Series Continued

Max Reflow Profile