

LVC MOS B6-X142X Series

Description

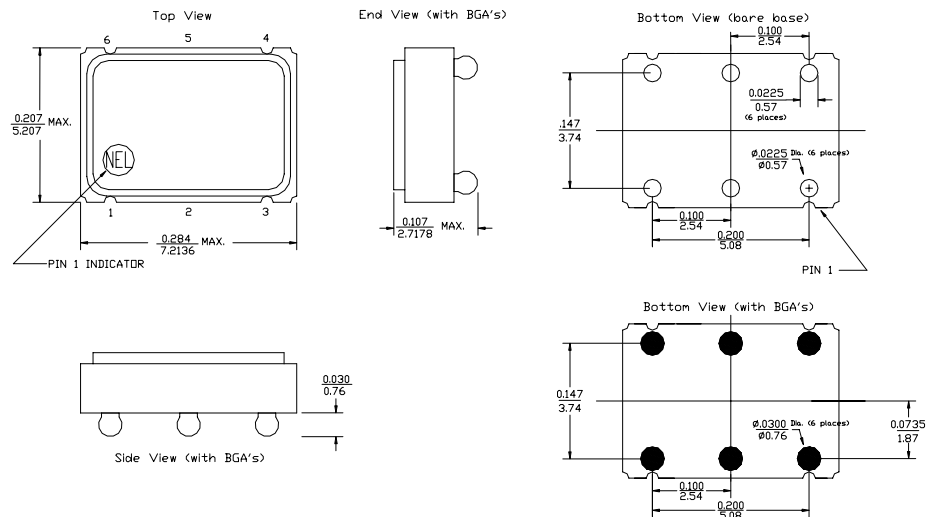
The **B6-X142X Series** of quartz crystal oscillators provide enable/disable 3-state LVC MOS compatible signals for bus connected systems. Supplying Pin 1 of the B6-X142X units with a logic "1" or open enables its Pin 4 output. In the disable mode, a high impedance is presented to the load.

Features

- Wide frequency range: 1.0MHz to 80.0MHz
- User specified tolerance available
- Space-saving alternative to discrete component oscillators
- 3.3 & 2.5Volt operation
- High shock resistance, to 1000g
- Power supply decoupling internal
- COTS/Dual use
- High Reliability - NEL HALT/HASS qualified for crystal oscillator start-up conditions
- Low Jitter - Wavecrest jitter characterization available
- No internal PLL avoids cascading PLL problems
- Metal lid electrically connected to ground to reduce EMI
- Ball Grid Array Material: 63Sn/37Pb 0.030"

Electrical Connection

Pin	Connection
1	Enable/Disable
2	Ground
3	Ground
4	Output
5	NC
6	V _{DD}



*** PRELIMINARY DRAWING ***

ALL DIMENSIONS: $\frac{IN}{PIN}$
 OUTER PACKAGE TOLERANCES ARE ± 0.010 IN (± 0.254 MM)
 PACKAGE PAD LOCATION AND DIAMETER TOLERANCES ARE ± 0.002 IN (± 0.05 MM)

B6-X142X Series Continued
LVCMOS

Rev. D

Operating Conditions and Output Characteristics (5)

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	-----	-----	1.0MHz	-----	80.0MHz
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	-----	-----	8.0 ns
Jitter, Integrated	J	Integrated from phase noise, 12kHz to 20MHz, RMS	-----	0.1ps	-----
Jitter, Wavecrest Characterized ⁽²⁾	-----	Random Period Accum, pk-to-pk	-----	2.3ps 26ps	-----
Phase Noise ⁽⁴⁾	f(Δf)	@ 10Hz @ 100Hz @ 1kHz @ 10kHz @ 100kHz @ >1Mhz	-----	-70 dBc/Hz -105 dBc/Hz -130 dBc/Hz -145 dBc/Hz -150 dBc/Hz -150 dBc/Hz	-----
T _{pz}	-----	-----	-----	-----	25 ns
Enable Voltage	-----	-----	1.6V	-----	-----
Disable Voltage	-----	-----	-----	-----	0.4V
Frequency Stability ⁽¹⁾	dF/F	Overall conditions including: voltage, calibration, temp.. 10 year aging, shock, vibration	-100ppm	-----	+100ppm

General Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Supply Voltage ⁽³⁾	V _{DD}	3.3V±10% 2.5V±10%	2.97V 2.25V	3.3V 2.5V	3.63V 2.75V
Supply Current	I _{DD}	No Load	0.0 mA	25 mA	40 mA
Output current	I _O	Low level Output Current	0.0 mA	-----	±16.0 mA
Operating temperature	T _A	-----	0°C	-----	70°C
Storage temperature	T _S	-----	-55°C	-----	125°C
Power Dissipation	P _D	3.3V 2.5V	-----	-----	145 mW 110 mW
Load	-----	-----	-----	-----	15pf
Start-up Time	t _s	20MHz or greater Less than 20MHz	-----	-----	10 ms 2 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

Footnotes:

- Standard frequency stability (±20,±25,±50ppm & others available)
- Jitter performance is frequency dependent. Please contact factory for full Wavecrest characterization.
- Internal high frequency power supply decoupling
- If phase noise data at a particular frequency is needed, contact factory.
- All parameters, unless otherwise specified, are at nominal conditions, ie: T=25°, Nominal Vcc & Nominal Load.

Creating a Part Number

B6 - X142X - FREQ

<p>Package Code _____</p> <p>B6 6 Solder Joint 5x7mm SMD 0.030" BGA</p> <p>Input Voltage _____</p> <table border="0"> <tr> <td>Code</td> <td>Specification</td> </tr> <tr> <td>A</td> <td>3.3V</td> </tr> <tr> <td>B</td> <td>2.5V</td> </tr> </table>	Code	Specification	A	3.3V	B	2.5V	<p>Tolerance/Performance</p> <p>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</p>
Code	Specification						
A	3.3V						
B	2.5V						

B6-X142X Series Continued

Recommended Reflow Profile

