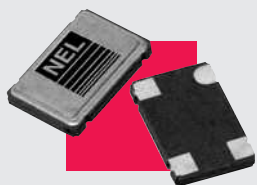


SC-B1420 Series



Size, mm

5 x 7

I/O

4 pad

Supply Voltage

3.3V / 2.5V / 5V

LVC MOS

SC-B1420 Series *Rev -*

Frequency Range: 1.0 MHz to 80.0 MHz

Description

The **SC-B1420 Series** of quartz crystal oscillators provide enable/disable 3-state LVC MOS compatible signals for bus connected systems. Supplying Pin 1 of the SC-B1420 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

- High Reliability - NEL HALT/HASS qualified for crystal oscillator start-up conditions
- Low jitter - Wavcrest jitter characterization available
- Wide frequency range—1.0 MHz to 80.0 MHz
- User specified tolerance available
- Will withstand vapor phase temperatures of 253°C for 4 minutes maximum
- Space-saving alternative to discrete component oscillators
- 2.5 Volt operation
- High shock resistance, to 1000g
- No internal PLL avoids cascading PLL problems
- Metal lid electrically connected to ground to reduce EMI
- Gold plated pads
- RoHS Compliant, Lead Free Construction

Creating a Part Number

Package Code

SC 4 pad 5x7 mm SMD

Input Voltage

Code Specification

A 3.3 V

B 2.5 V

5 V

SC - B142X - FREQ

Tolerance/Performance

0 ±100 ppm 0-70°C

1 ±50 ppm 0-70°C

7 ±25 ppm 0-70°C

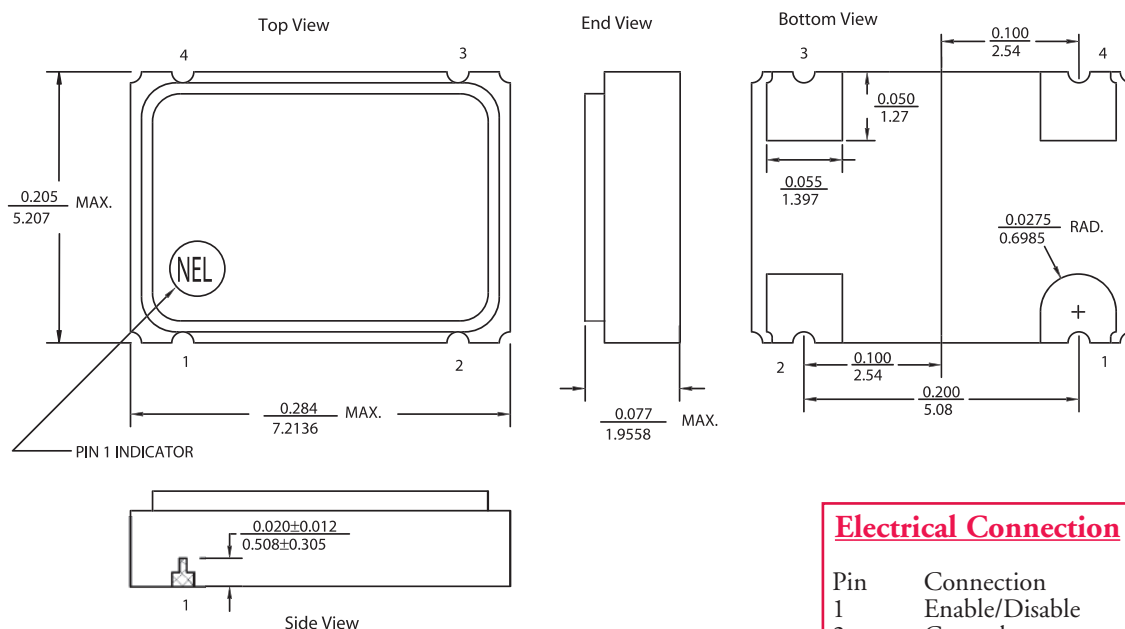
9 Customer Specific

A ±20 ppm 0-70°C

B ±50 ppm -40 to +85°C

C ±100 ppm -40 to +85°C

Drawing Specifications



Electrical Connection

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

Dimensions shown in inches and millimeters.

All tolerances are ±0.005 inches (±0.127mm) unless otherwise specified.



For the most up to date specifications on each NEL product, log on to our website—www.nelfc.com

LVCMOS

SC-B1420 Series *Rev -*

Frequency Range: 1.0 MHz to 80.0 MHz

Operating Conditions and Output Characteristics

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	—	—	1.0 MHz	—	80.0 MHz
Duty Cycle	—	@ $V_{DD}/2$	45/55%	—	55/45%
Logic 0	V_{OL}	@ 600 μ A	—	—	0.2 V
Logic 1	V_{OH}	@ 600 μ A	$V_{DD} - 0.2$ V	—	—
Rise & Fall Time	t_r, t_f	10-90% V_o	—	—	8.0 ns
Jitter, RMS ⁽²⁾	—	—	—	3 psec	—
T_{pz}	—	—	—	—	25 ns
Enable Voltage	—	—	2.0 V	—	—
Disable Voltage	—	—	—	—	0.8 V
Frequency Stability ⁽¹⁾	dF/F	Overall conditions including: voltage, calibration, temp., 10 yr aging, shock, vibration	-100 ppm	—	+100 ppm

General Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Supply Voltage ⁽³⁾	V_{DD}	2.5V $\pm$ 5%	2.375 V	2.5 V	2.625 V
Supply Current	I_{DD}	No Load	0.0 mA	—	40 mA
Output Current	I_o	Low level Output Current	0.0 mA	—	$\pm$ 16.0 mA
Operating Temperature	T_A	—	0°C	—	70°C
Storage Temperature	T_s	—	-55°C	—	125°C
Power Dissipation	P_D	—	—	—	105 mW
Lead Temperature	T_L	Soldering, 10 sec.	—	—	300°C
Load	—	—	—	—	15 pF
Start-up Time	t_s	20 MHz or greater	—	—	10 ms
		Less than 20 MHz	—	—	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 55 Hz to 2000 Hz
Soldering Condition	300°C for 10 seconds
Hermetic Seal	Leak rate less than 1×10^{-8} atm.cc/sec

Footnotes:

- 1) Standard frequency stability ($\pm$ 20, $\pm$ 25, $\pm$ 50 ppm & others available).
- 2) Jitter performance is frequency dependent. Please contact factory for full Wavecrest characterization.
- 3) External high frequency power supply decoupling required.