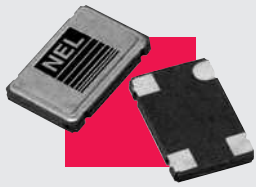


# SC-B1420 Series



**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

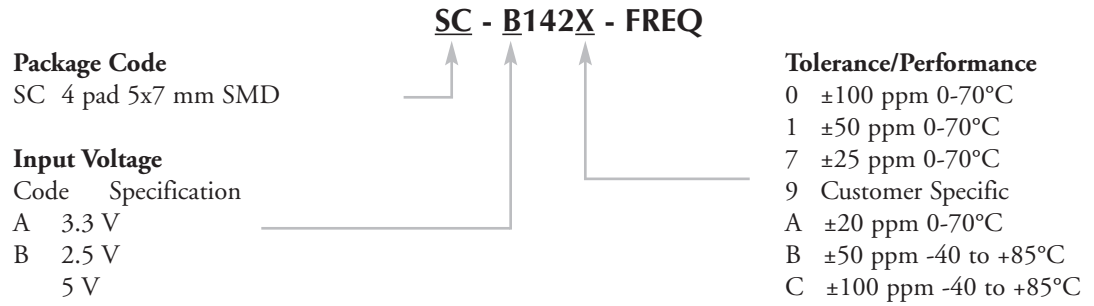
**Description**

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.

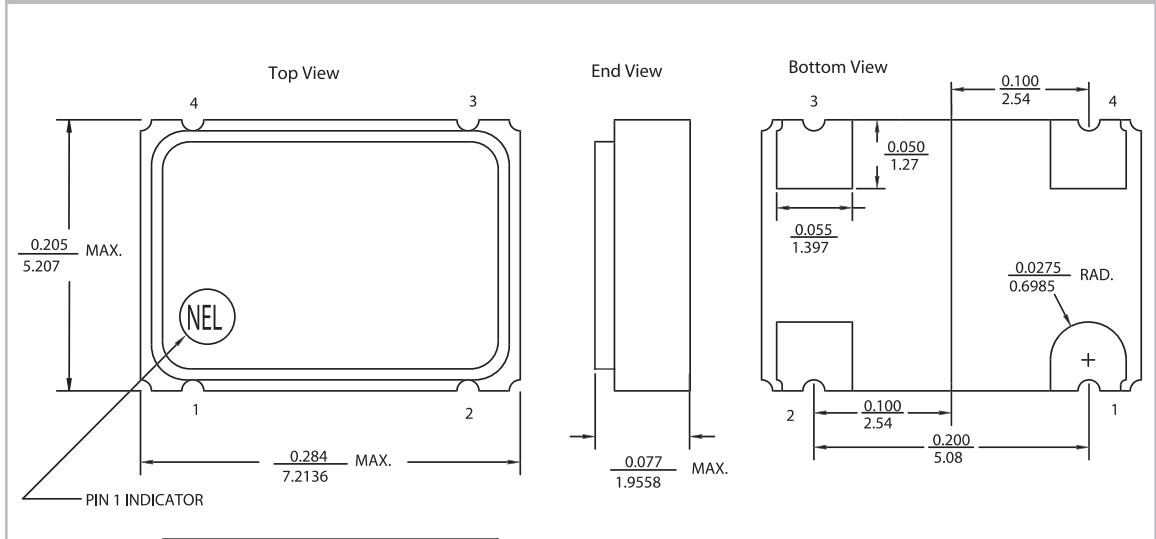
**Features**

- 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**



**Drawing Specifications**



**Electrical Connection**

Pin	Connection
1	Enable/Disable
2	Ground
3	Output
4	V <sub>DD</sub>

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](http://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 $\mu$ A	—	—	0.2 V
Logic 1	$V_{OH}$	@ 600 $\mu$ A	$V_{DD} - 0.2$ V	—	—
Rise & Fall Time	$t_r, t_f$	10-90% $V_o$	—	—	8.0 ns
Jitter, RMS <sup>(2)</sup>	—	—	—	3 psec	—
$T_{pz}$	—	—	—	—	25 ns
Enable Voltage	—	—	2.0 V	—	—
Disable Voltage	—	—	—	—	0.8 V
Frequency Stability <sup>(1)</sup>	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 <sup>(3)</sup>	$V_{DD}$	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 Less than 20 MHz	—	—	10 ms 2 ms

#### Environmental and Mechanical Characteristics

Mechanical Shock	Per MIL-STD-202, Method 213, Condition E
Thermal Shock	Per MIL-STD-833, 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 $1 \times 10^{-8}$ 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.