

# SJ-A1420 Series



## Size, mm

9 x 14

## I/O

4 J Lead

## Supply Voltage

3.3V / 5V

# LVC MOS

## SJ-A1420 Series *Rev S*

Frequency Range: 1.0 MHz to 80.0 MHz

### Description

The **SJ-A1420 Series** of quartz crystal oscillators provide enable/disable 3-state LVC MOS compatible signals for bus connected systems. Supplying Pin 1 of the SJ-A1420 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. All units are designed to survive standard wave soldering operations without damage.

### Features

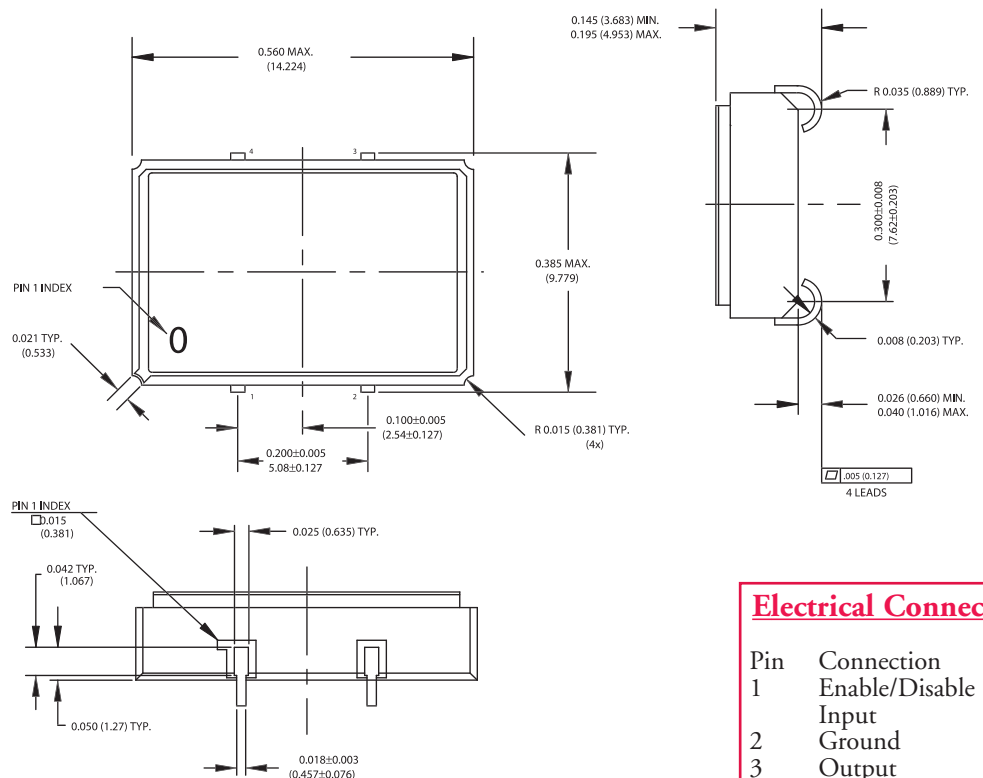
- High Reliability - NEL HALT/HASS qualified for crystal oscillator start-up conditions
- Low jitter - Wavecrest jitter characterization available
- Wide frequency range—1.0 MHz to 80.0 MHz
- User specified tolerance available
- Will withstand vapor phase temperatures of 253°C for 4 minutes maximum
- Space-saving alternative to discrete component oscillators
- High shock resistance, to 3000g
- Metal lid electrically connected to ground to reduce EMI
- 3.3 Volt operation
- High Q crystal actively tuned oscillator circuit
- Power supply decoupling internal
- No internal PLL avoids cascading PLL problems
- Low power consumption
- Gold plated leads
- RoHS Compliant, Lead Free Construction

### Creating a Part Number

Package Code		Input Voltage		Tolerance/Performance	
SJ	4 J Lead 9x14 mm SMD	A	3.3 V	0	±100 ppm 0-70°C
			5 V	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

**SJ - A142X - FREQ**

### Drawing Specifications



### Electrical Connection

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

Dimensions shown in inches and millimeters.



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# LVCMOS

## SJ-A1420 Series *Rev S*

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 <sub>DD</sub> /2	45/55%	—	55/45%
Logic 0	V <sub>OL</sub>	@600 μA	—	—	0.2 V
Logic 1	V <sub>OH</sub>	@600 μA	V <sub>DD</sub> -0.2V	—	—
Rise & Fall Time	t <sub>r</sub> , t <sub>f</sub>	10-90%	—	—	8 ns
T <sub>pz</sub>	—	—	—	—	25 ns
Enable/Disable					
Logic High Voltage	—	—	1.6 V	—	—
Enable/Disable					
Logic Low Voltage	—	—	—	—	0.4 V
Jitter, RMS <sup>(2)</sup>	—	—	—	3 psec	—
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 <sub>DD</sub>	3.3V±10%	2.97 V	3.3 V	3.63 V
Supply Current	I <sub>DD</sub>	No Load	0.0 mA	25 mA	40 mA
Output Current	I <sub>O</sub>	—	0.0 mA	—	±16.0 mA
Operating Temperature	T <sub>A</sub>	—	0°C	—	70°C
Storage Temperature	T <sub>S</sub>	—	-55°C	—	125°C
Power Dissipation	P <sub>D</sub>	—	—	—	145 mW
Lead Temperature	T <sub>L</sub>	Soldering, 10 sec.	—	—	300°C
Load	—	—	—	—	15 pf
Start-up Time	t <sub>s</sub>	—	—	2 ms	10 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 x 10 <sup>-8</sup> atm.cc/sec of helium

#### Footnotes:

- 1) Standard frequency stability (±20, ±25, ±50 ppm & others available).
- 2) Jitter performance is frequency dependent. Please contact factory for full Wavecrest characterization.  
RMS jitter bandwidth of 12kHz to 20MHz.
- 3) Internal high frequency power source decoupling.

#### Test Load

