



LVC MOS SJ-A1420 Series

Description

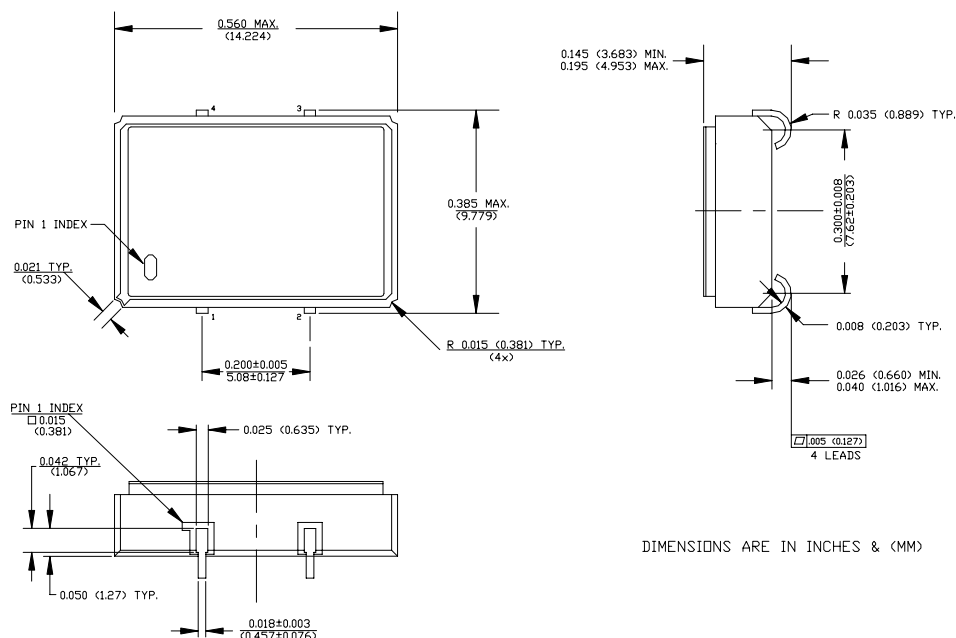
The **SJ-A1420 Series** of quartz crystal oscillators provide enable/disable 3-state LVC MOS compatible signals for bus connected systems. Supplying Pin 1 of the SJ-A1420 units with a logic "1" or open enables its pin 3 output. In the disabled mode, pin 3 presents a high impedance to the load. All units are designed to survive standard wave soldering operations without damage.

Features

- Wide frequency range— 1.0MHz to 80.0MHz
- User specified tolerance available
- 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
- COTS/Dual use
- High Reliability - NEL HALT/HASS qualified for crystal oscillator start-up conditions
- Low Jitter - Wavecrest jitter characterization available
- 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

Electrical Connection

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



SJ-A1420 Series Continued
LVCMOS

Rev. V

Operating Conditions and Output Characteristics**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}	@ 600 μ A	-----	-----	0.2V
Logic 1	V_{OH}	@ 600 μ A	$V_{DD}-0.2V$	-----	-----
Rise & Fall Time	$t_{r,tf}$	10-90%	-----	-----	8 ns
TPz	-----	-----	-----	-----	25 ns
Enable/Disable					
Logic High Voltage	-----	-----	1.6V	-----	-----
Enable/Disable					
Logic Low Voltage	-----	-----	-----	-----	0.4V
Jitter, Integrated	J	Integrated from phase noise, 12kHz to 20MHz, RMS	-----	0.1 ps	-----
Jitter, Wavecrest Characterized ⁽²⁾	-----	Random Period Accum, pk-to-pk	-----	2.3ps 26ps	-----
Phase Noise	$\mathcal{L}(\Delta f)$	@ 10Hz @ 100Hz @ 1kHz @ 10kHz @ 100kHz @ >1MHz	-----	-70 dBc/Hz -105 dBc/Hz -130 dBc/Hz -145 dBc/Hz -150 dBc/Hz -150 dBc/Hz	-----
Frequency Stability ⁽¹⁾	dF/F	Overall conditions including: voltage, calibration, temp., 10 yr aging, shock, vibration	-100ppm	-----	+100ppm

General Characteristics

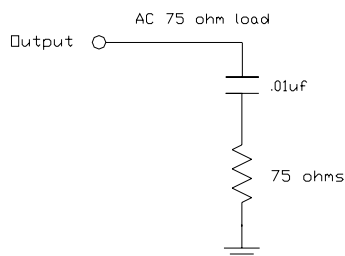
Parameter	Symbol	Conditions	Min	Typical	Ma3x
Supply Voltage ⁽³⁾	V_{DD}	3.3V $\pm$ 10%	2.97V	3.3V	3.63V
Supply Current	I_{DD}	No Load	0.0 mA	25mA	40mA
Output current	I_O	-----	0.0 mA	-----	$\pm$ 16.0 mA
Operating temperature	T_A	-----	0°C	-----	70°C
Storage temperature	T_S	-----	-55°C	-----	125°C
Power Dissipation	P_D	-----	-----	-----	145 mW
Load	---	-----	-----	-----	15pf
Start-up time	t_S	-----	-----	2 ms	10 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 1×10^{-8} atm.cc/sec of helium

Footnotes:

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

Test Load:**Creating a Part Number****SJ - A142X - FREQ****Package Code**

SJ 4 J Lead SMD

Tolerance/Performance

0 $\pm$ 100ppm 0-70°C
 1 $\pm$ 50ppm 0-70°C
 7 $\pm$ 25ppm 0-70°C
 9 Customer Specific
 A $\pm$ 20ppm 0-70°C
 B $\pm$ 50ppm -40 to +85°C
 C $\pm$ 100ppm -40 to +85°C

Input Voltage

Code Specification
 A 3.3V
 5V

**FREQUENCY
CONTROLS, INC.**

SJ-A1420 Series Continued

Max Reflow Profile

