



LVC MOS (1.8V) SJ-C1440 Series

Rev. J

Description

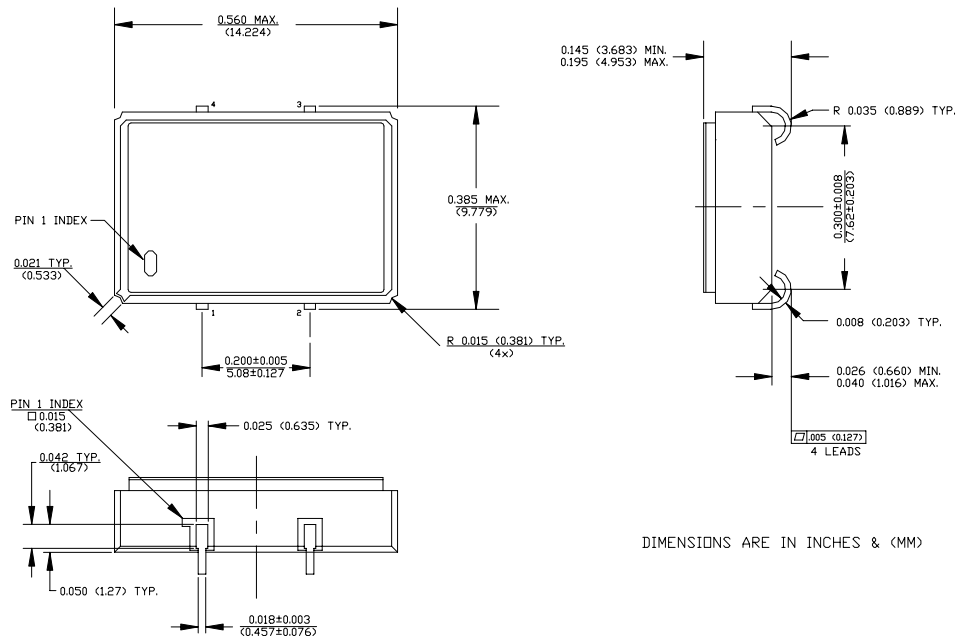
The **SJ-C1440 Series** of quartz crystal oscillators provide enable/disable 3-state LVC MOS compatible signals for bus connected systems. Supplying Pin 1 of the SJ-C1440 units with a logic "1" or open enables its pin 3 output. In the disabled mode, pin 3 presents a high impedance to the load.

Features

- Wide frequency range— 70.0MHz to 165.0MHz
- 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
- High Q Crystal actively tuned oscillator circuit
- COTS/Dual use
- High Reliability - NEL HALT/HASS qualified for crystal oscillator start-up conditions
- Low Jitter - Wavecrest jitter characterization available
- 1.8Volt operation
- 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 Input
2	Grd & Case
3	Output
4	V _{DD}



SJ-C1440 Series Continued
LVCMOS

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Operating Conditions and Output Characteristics

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	-----	-----	70.0MHz	-----	165.0MHz
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	tr,tf	10-90%	-----	-----	3.5 ns
Tpz	-----	-----	-----	-----	100 ns
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	$f(\Delta f)$	@ 10Hz @ 100Hz @ 1kHz @ 10kHz @ 100kHz @ >1Mhz	-----	-70 dBc/Hz -105 dBc/Hz -130 dBc/Hz -145 dBc/Hz -150 dBc/Hz -150 dBc/Hz	-----
Enable Voltage	-----	-----	1.3V	-----	-----
Disable Voltage	-----	-----	-----	-----	0.5V
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	Max
Supply Voltage ⁽³⁾	V_{DD}	-----	1.71V	1.8V	1.89V
Supply Current	I_{DD}	No Load	0.0 mA	10mA	20mA
Output current	I_O	-----	0.0 mA	-----	± 25.0 mA
Operating temperature	T_A	-----	0°C	-----	70°C
Storage temperature	T_S	-----	-55°C	-----	125°C
Power Dissipation	P_D	-----	-----	-----	38 mW
Load	----	-----	-----	-----	15pf
Start-up time	t_s	-----	-----	2 ms	10 ms

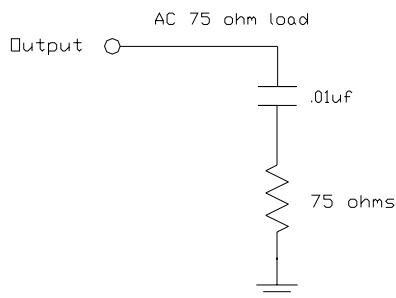
Environmental and Mechanical Characteristics

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 ($\pm 20, \pm 25, \pm 50$ ppm & 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 - C144X - FREQ

Package Code

SJ 4 J Lead SMD

Input Voltage

Code	Specification
A	3.3V
B	2.5V
C	1.8 V
	5.0V

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

SJ-C1440 Series Continued

Max Reflow Profile

