

TTL
SJ-160 Series

Rev. H

Description

The **SJ-160 Series** of quartz crystal oscillators are designed to survive standard wave soldering operations without damage.

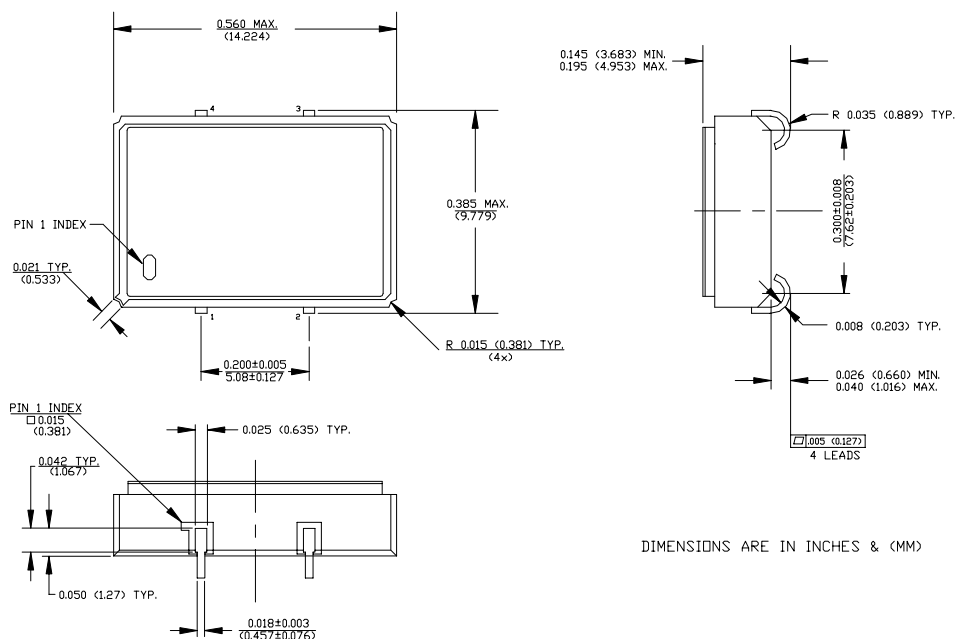
Features

- Wide frequency range—2.25MHz to 85.0MHz
- 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
- Low Jitter
- High Q Crystal actively tuned oscillator circuit
- Power supply decoupling internal
- No internal PLL avoids cascading PLL problems
- High frequencies due to proprietary design
- Gold plated leads
- Low power consumption
- RoHS Compliant, Lead Free Construction

Electrical Connection

Pin Connection

- | | |
|---|-----------------|
| 1 | N.C. |
| 2 | Grd & Case |
| 3 | Output |
| 4 | V _{CC} |



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SJ-160 Series Continued
TTL

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Operating Conditions and Output Characteristics

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	----	----	2.25MHz	----	85.0MHz
Duty Cycle	----	@ $V_{CC}/2$	40/60%	----	60/40%
Logic 0	V_{OL}	@ 16mA	----	----	0.4V
Logic 1	V_{OH}	@ 0.4mA	2.4V	----	----
Rise & Fall Time	t_r, t_f	@ 0.4 to 2.4V	----	----	----
		<40MHz	----	----	8.0 ns
		40MHz or greater	----	----	5.0 ns
Jitter, RMS ⁽²⁾	----	<40MHz OT & >40MHz	----	----	5 psec
		<40MHz Fund	----	----	8 psec
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	V_{CC}	----	4.75V	5.0V	5.25V
Supply Current	I_{CC}	No Load	0.0 mA	----	50 mA
Output current	I_O	----	0.0 mA	----	±16.0 mA
Operating temperature	T_A	----	0°C	----	70°C
Storage temperature	T_S	----	-55°C	----	125°C
Power Dissipation	P_D	----	----	----	263 mW
Lead temperature	T_L	Soldering, 10 sec.	----	----	300°C
Load	----	----	----	----	10 TTL gate
Start-up Time	t_s	<20MHz	----	----	2 ms
		20MHz or greater	----	----	10 ms

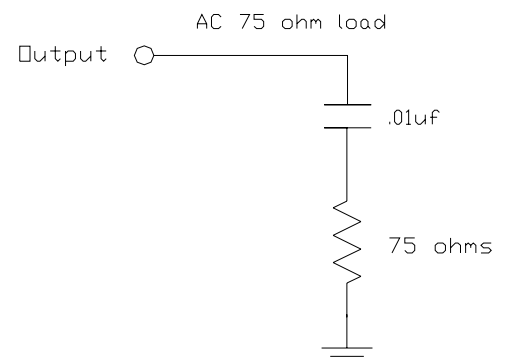
Environmental and Mechanical Characteristics

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 55Hz to 2000 Hz
Soldering Condition	300°C for 10 seconds
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 characterization.
RMS jitter bandwidth of 12kHz to 20MHz.

Test Load:



Creating a Part Number

SJ - X16X - FREQ

Package Code

SJ 4 J Lead SMD

Input Voltage

Code	Specification
A	3.3V
	5V

Tolerance/Performance

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



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