



TTL SJ-160 Series

Description

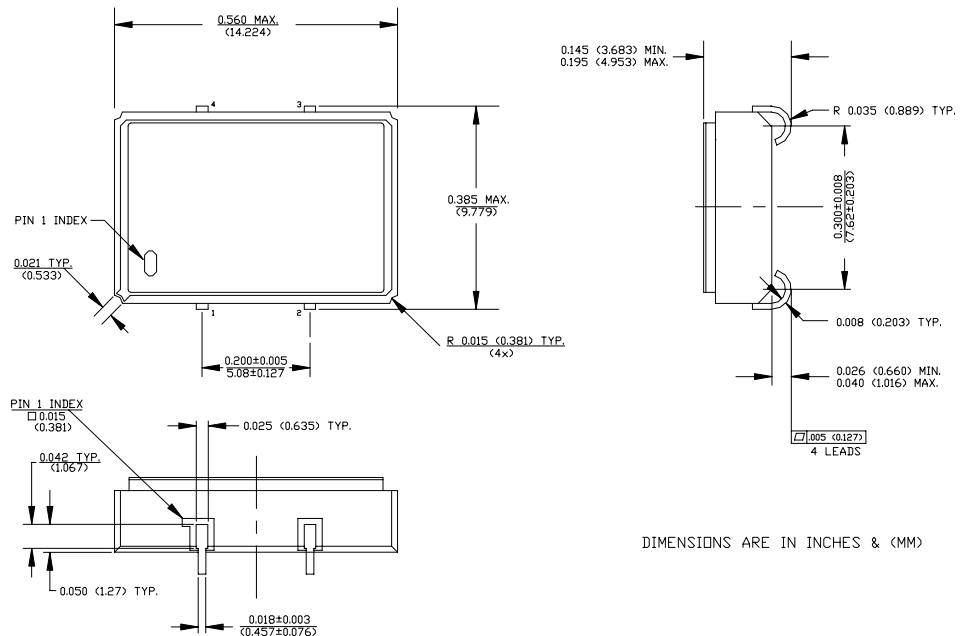
The **SJ-160 Series** of quartz crystal oscillators are designed to survive standard wave soldering operations without damage.

Features

- Wide frequency range—2.25MHz to 85.0MHz
- User specified tolerance available
- Space-saving alternative to discrete component oscillators
- High shock resistance, to 3000g
- Metal lid electrically connected to ground to reduce EMI
- COTS/Dual use
- 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}



SJ-160 Series Continued
TTL

Rev. L

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	tr,tf	@ 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}	5.0V±5%	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
Load	-----	-----	-----	-----	10 TTL gate
Start-up Time	t _s	<20MHz	-----	-----	2 ms
		20MHz or greater	-----	-----	10 ms

Environmental and Mechanical Characteristics

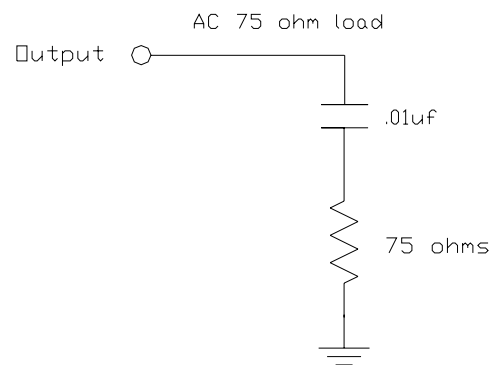
Mechanical Shock	Per MIL-STD-202, Method 213, Condition E
Thermal Shock	Per MIL-STD-883, Method 1011, Condition A
Vibration	0.060" double amplitude 10 Hz to 55 Hz, 35g's 55Hz to 2000 Hz
Hermetic Seal	Leak rate less than 1 x 10 ⁻⁸ atm.cc/sec of helium

Footnotes:

- Standard frequency stability (±20,±25,±50ppm & others available)
- Jitter performance is frequency dependent. Please contact factory for full characterization. RMS jitter bandwidth of 12kHz to 20MHz.

Creating a Part Number	
SJ - X16X - FREQ	
Package Code	Tolerance/Performance
SJ 4 J Lead SMD	0 ±100ppm 0-70°C
	1 ±50ppm 0-70°C
	7 ±25ppm 0-70°C
	9 Customer Specific
Input Voltage	A ±20ppm 0-70°C
Code Specification	B ±50ppm -40 to +85°C
A 3.3V	C ±100ppm -40 to +85°C
5V	

Test Load:



SJ-160 Series Continued

Max Reflow Profile

