

TTL SJ-160 Series

Description

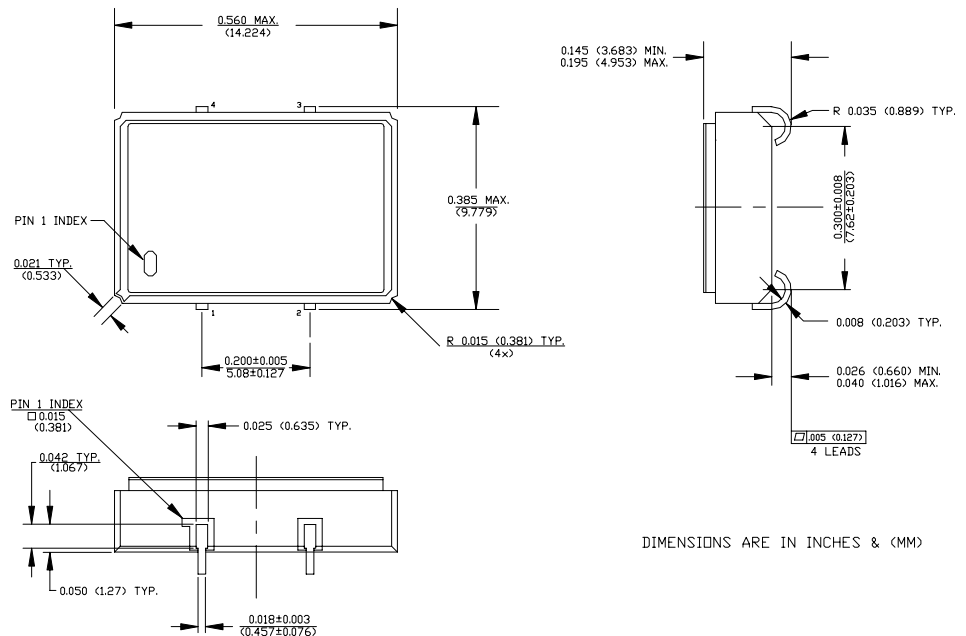
The **SJ-160 Series** of quartz crystal oscillators are designed to survive standard wave soldering operations without damage.

Features

- Wide frequency range—2.25MHz to 85.0MHz
- User specified tolerance available
- 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}



SJ-160 Series Continued
TTL

Rev. H

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	-----	-----	-----
Jitter, RMS ⁽²⁾	-----	<40MHz	-----	-----	8.0 ns
		40MHz or greater	-----	-----	5.0 ns
		<40MHz OT & >40MHz	-----	-----	5 psec
Frequency Stability ⁽¹⁾	dF/F	<40MHz Fund	-----	-----	8 psec
		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

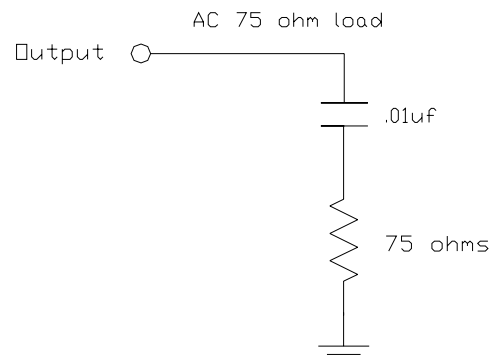
Environmental and Mechanical Characteristics

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		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		