



CMOS (TTL Compatible) SJ-460 Series

Description

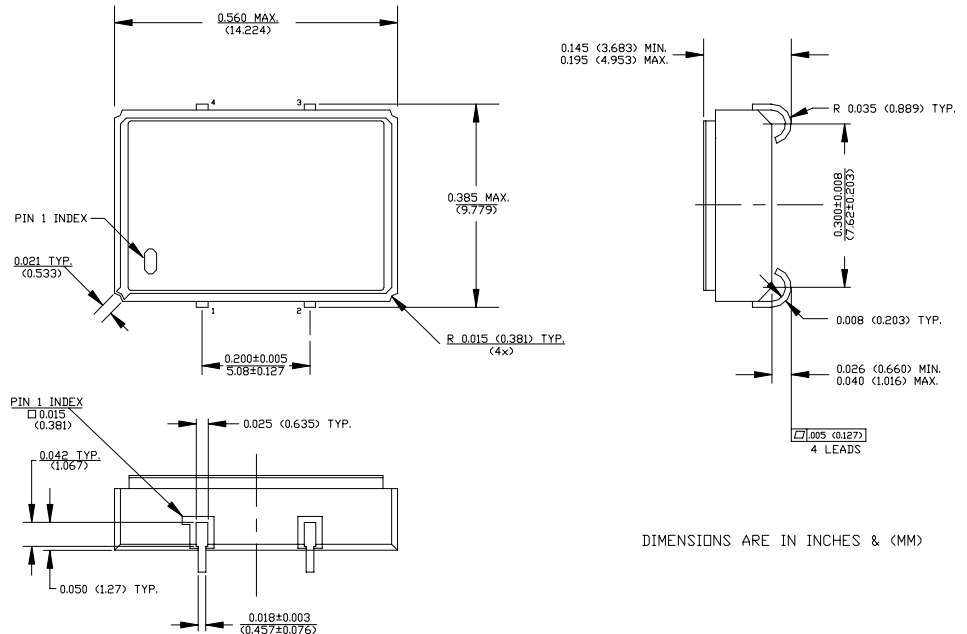
The **SJ-460 Series** of quartz crystal oscillators are designed to survive standard wave soldering operations without damage.

Features

- Wide frequency range—2.25MHz to 36.0MHz
- 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
- CMOS and TTL output levels
- High Q Crystal actively tuned oscillator circuit
- Low power consumption
- Power supply decoupling internal
- No internal PLL avoids cascading PLL problems
- High frequencies due to proprietary design
- Gold plated leads
- RoHS Compliant, Lead Free Construction

Electrical Connection

Pin	Connection
1	N.C.
2	Ground
3	Output
4	V _{DD}



SJ-460 Series Continued
CMOS (TTL Compatible)

Rev. J

Operating Conditions and Output Characteristics

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	-----	-----	2.25MHz	-----	36.0MHz
Duty Cycle	-----	@ $V_{DD}/2$	45/55%	-----	55/45%
Logic 0	V_{OL}	@ 600 μ A @ 16mA	-----	-----	0.2V 0.4V
Logic 1	V_{OH}	@ 600 μ A @ 16mA	$V_{DD}-0.2V$ $V_{DD}-0.4V$	-----	-----
Rise & Fall Time	tr,tf	10-90% V_O	-----	-----	3 ns
Jitter, RMS ⁽²⁾	-----	-----	-----	-----	8.0 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_{DD}	5.0V \pm 10%	4.5V	5.0V	5.5V
Supply Current	I_{DD}	No Load	0.0 mA	-----	30 mA
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	-----	-----	-----	210 mW
Load	-----	-----	-----	-----	15pf
Start-up Time	t_s	<20MHz 20MHz or greater	-----	-----	2 ms 10 ms

Environmental and Mechanical Characteristics

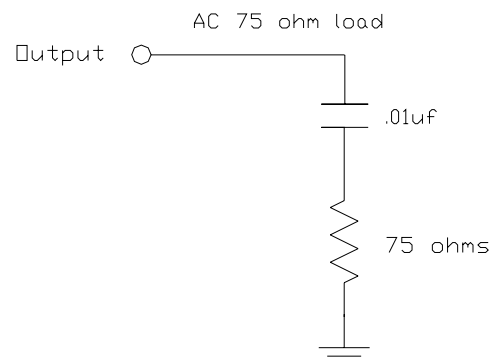
Mechanical Shock	Per MIL-STD-202, Method 213, Condition E
Thermal Shock	Per MIL-STD-883, Method 1011, Condition A
Vibration	0.060" double amplitude 10 Hz to 55 Hz, 35g's 55Hz to 2000 Hz
Hermetic Seal	Leak rate less than 1×10^{-8} atm.cc/sec of helium

Footnotes:

- Standard frequency stability (\pm 20, \pm 25, \pm 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 - A46X - FREQ	
Package Code	Tolerance/Performance
SJ 4 J Lead SMD	0 \pm 100ppm 0-70°C
	1 \pm 50ppm 0-70°C
	7 \pm 25ppm 0-70°C
	9 Customer Specific
Input Voltage	A \pm 20ppm 0-70°C
Code Specification	B \pm 50ppm -40 to +85°C
A 3.3V	C \pm 100ppm -40 to +85°C
5V	

Test Load:



SJ-460 Series Continued

Max Reflow Profile

