

HSTL PJ-A2C00 Series

PRELIMINARY

Description

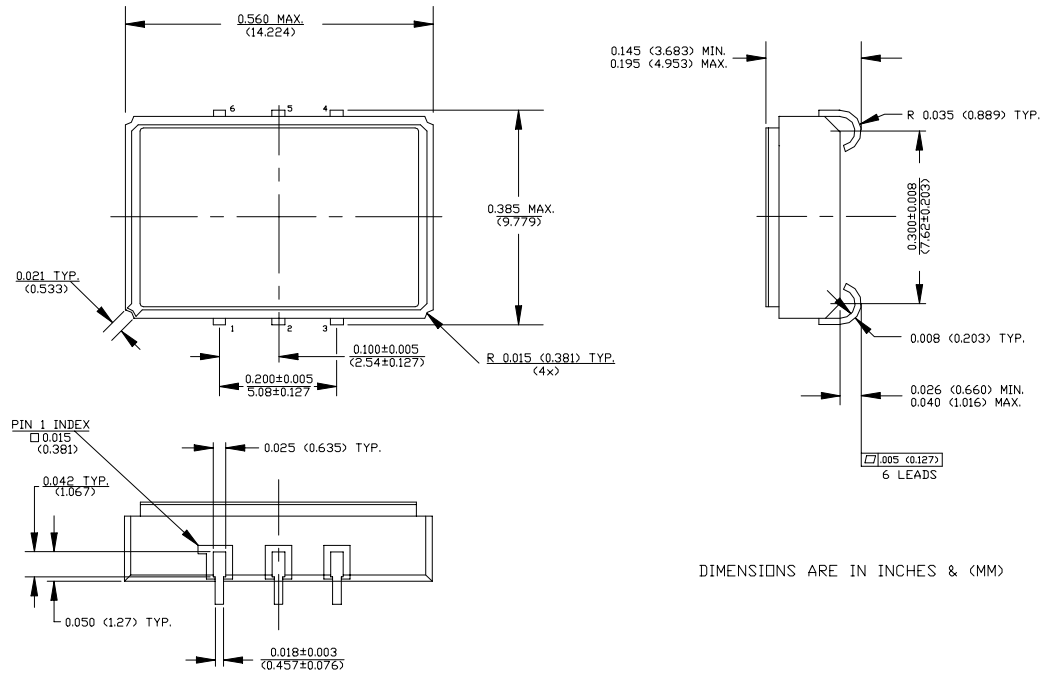
The **PJ-A2C00 Series** of quartz crystal oscillators provide HSTL compatible signals. Systems designers may now specify space-saving, cost-effective packaged HSTL oscillators to meet their timing requirements.

Features

- Wide frequency range—50.0MHz to 250.0MHz
- 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
- 3.3 volt operation
- Metal lid electrically connected to ground to reduce EMI
- Fast rise and fall times <800 ps
- High Reliability - NEL HALT/HASS qualified for crystal oscillator start-up conditions
- Low Jitter - Wavecrest jitter characterization available
- Overtone technology
- 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 - Solder dipped leads available upon request

Electrical Connection

Pin	Connection
1	V _{CC}
2	Enable/Disable
3	V _{EE}
4	Output
5	Output Complement
6	V _{CCO}



PJ-A2C00 Series Continued
HSTL

Rev. B

Operating Conditions and Output Characteristics

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	----	----	50.0MHz	----	250.0MHz
Duty Cycle ⁽²⁾	----	@ V _O /2	45/55%	----	55/45%
Logic 0 ⁽²⁾	V _{OL}	----	0.0V	----	0.4V
Logic 1 ⁽²⁾	V _{OH}	----	1.0V	----	1.2V
Rise & Fall Time ⁽²⁾	tr,tf	20-80%V _O	----	----	800 psec
Tpd ⁽⁴⁾	----	----	-200 psec	----	+200 psec
Jitter, RMS ⁽³⁾	----	----	----	----	3 psec
Enable (Low) voltage	----	----	----	----	800mV
Disable (High) voltage	----	----	2.00V	----	----
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}	----	3.15V	3.3V	3.45V
Output Supply Voltage	V _{CCO}	----	1.6V	----	2.00V
Supply Current	I _{CC}	Ground Current	0.0 mA	----	100 mA
Output current	I _O	Continuous Output Current	0.0 mA	----	±50.0 mA
Operating temperature	T _A	----	0°C	----	70°C
Storage temperature	T _S	----	-55°C	----	125°C
Power Dissipation	P _D	----	----	----	345 mW
Lead temperature	T _L	Soldering, 10 sec.	----	----	300°C
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-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 x 10 ⁻⁸ atm.cc/sec of helium

Footnotes:

- 1) Standard frequency stability (±20,±25,±50ppm & others available)
- 2) Test Load per HSTL Class I of EIA/JEDEC Standard EIA /JESD8-6.
- 3) Jitter performance is frequency dependent. Please contact factory for full Wavecrest characterization.
- 4) Tpd is phase shift between the falling edge of pin 4 and the rising edge of pin 5.
- 5) Open to enable pin also enables the output.

Creating a Part Number

PJ - A2C0X - FREQ

Package Code

PJ 6 J Lead SMD

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

Input Voltage

Code Specification
 A 3.3V
 5V