

### HSTL PJ-A2C00 Series

PRELIMINARY

### Description

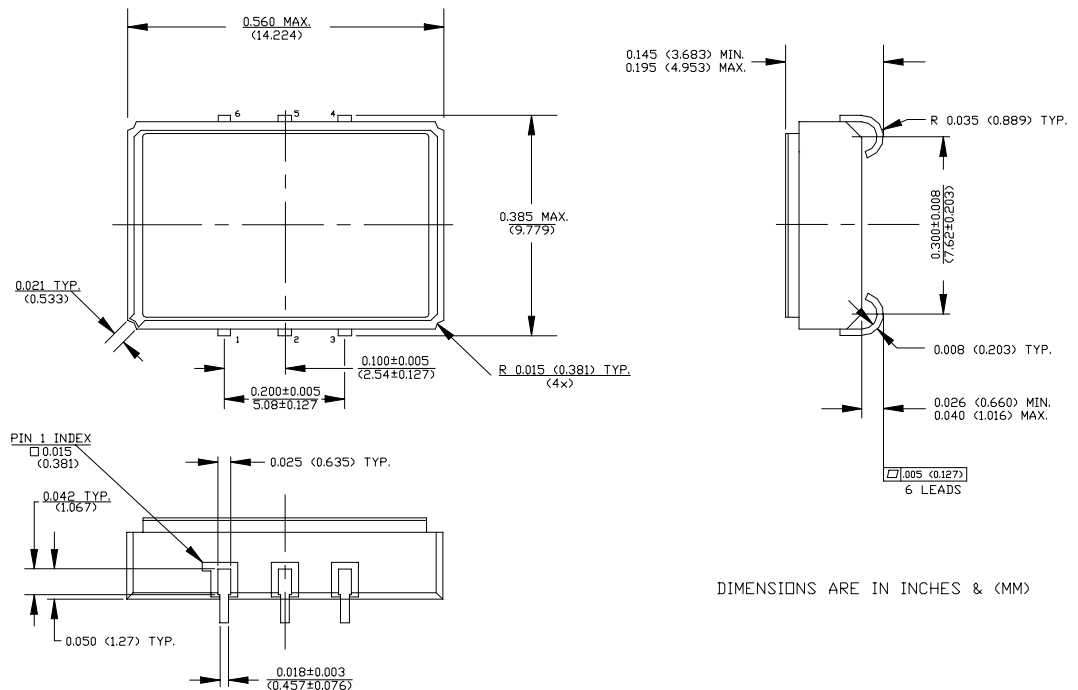
The **PJ-A2C00 Series** of quartz crystal oscillators provide HSTL compatible signals. Systems designers may now specify space-saving, cost-effective packaged HSTL oscillators to meet their timing requirements.

### 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 <sub>CC</sub>
2	Enable/Disable
3	V <sub>EE</sub>
4	Output
5	Output Complement
6	V <sub>CCO</sub>



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 <sup>(2)</sup>	-----	@ V <sub>o</sub> /2	45/55%	-----	55/45%
Logic 0 <sup>(2)</sup>	V <sub>OL</sub>	-----	0.0V	-----	0.4V
Logic 1 <sup>(2)</sup>	V <sub>OH</sub>	-----	1.0V	-----	1.2V
Rise & Fall Time <sup>(2)</sup>	tr,tf	20-80%V <sub>o</sub>	-----	-----	800 psec
Tpd <sup>(4)</sup>	-----	-----	-200 psec	-----	+200 psec
Jitter, RMS <sup>(3)</sup>	-----	-----	-----	-----	3 psec
Enable (Low) voltage	-----	-----	-----	-----	800mV
Disable (High) voltage	-----	-----	2.00V	-----	-----
Frequency Stability <sup>(1)</sup>	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 <sub>CC</sub>	-----	3.15V	3.3V	3.45V
Output Supply Voltage	V <sub>CCO</sub>	-----	1.6V	-----	2.00V
Supply Current	I <sub>CC</sub>	Ground Current	0.0 mA	-----	100 mA
Output current	I <sub>o</sub>	Continuous Output Current	0.0 mA	-----	±50.0 mA
Operating temperature	T <sub>A</sub>	-----	0°C	-----	70°C
Storage temperature	T <sub>S</sub>	-----	-55°C	-----	125°C
Power Dissipation	P <sub>D</sub>	-----	-----	-----	345 mW
Lead temperature	T <sub>L</sub>	Soldering, 10 sec.	-----	-----	300°C
Start-up time	t <sub>S</sub>	-----	-----	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 <sup>-8</sup> 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	
<b>PJ - A2C0X - FREQ</b>	
<b>Package Code</b>	<b>Tolerance/Performance</b>
PJ 6 J Lead SMD	0 ±100ppm 0-70°C
	1 ±50ppm 0-70°C
	7 ±25ppm 0-70°C
	9 Customer Specific
<b>Input Voltage</b>	A ±20ppm 0-70°C
Code Specification	B ±50ppm -40 to +85°C
A 3.3V	C ±100ppm -40 to +85°C
5V	