

HSTL SD-A2C00 Series

PRELIMINARY

Description

The **SD-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.

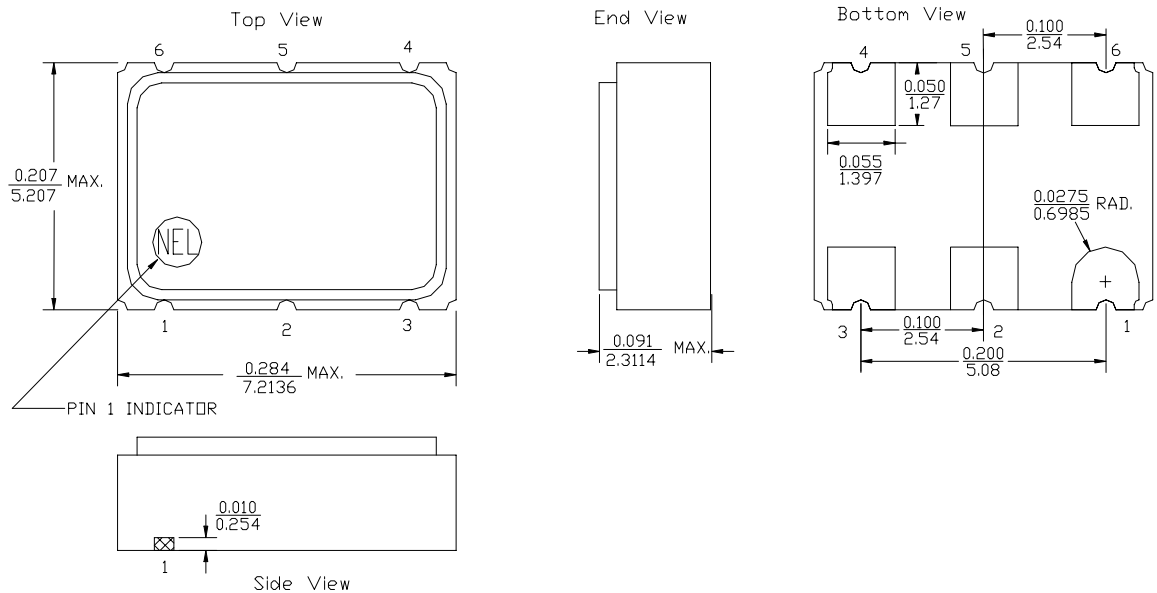
Features

- 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 1000g
- 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 pads

Electrical Connection

Pin Connection

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



SD-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
T _{pd} ⁽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 Current	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	
SD - A2C0X - FREQ	
Package Code	Tolerance/Performance
SD 6 pad 5x7mm 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	