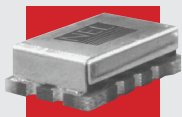


# SU-A2D10 Series



## Size, mm

9 x 14

## I/O

6 pad

## Supply Voltage

3.3V / 2.5V

# LVDS

## SU-A2D10 Series *Rev A*

Frequency Range: 80.0MHz to 350.0MHz

### Description

The **SU-A2D10 Series** of quartz crystal oscillators provides a LVDS compatible signal.

### Features

- Wide frequency range—80.0MHz to 350.0MHz
- User specified tolerance available
- Will withstand SMD reflow temperatures of 183°C for 4 minutes maximum
- High shock resistance, to 1000g
- 3.3 volt operation (other voltages available upon request)
- Cover connected to ground
- Enable/Disable
- LVDS output on pin 4, complement on Pin 5
- Low Jitter - Wavecrest jitter characterization available
- High Reliability - NEL HALT/HASS qualified for crystal oscillator start-up conditions
- 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

### Creating a Part Number

#### SU - A2D1X - FREQ

#### Package Code

SU 6 pad 9x14mm SMD

#### Input Voltage

Code Specification

A 3.3V

B 2.5V

#### Tolerance/Performance

0 ±100ppm 0-70°C

1 ±50ppm 0-70°C

7 ±25ppm 0-70°C

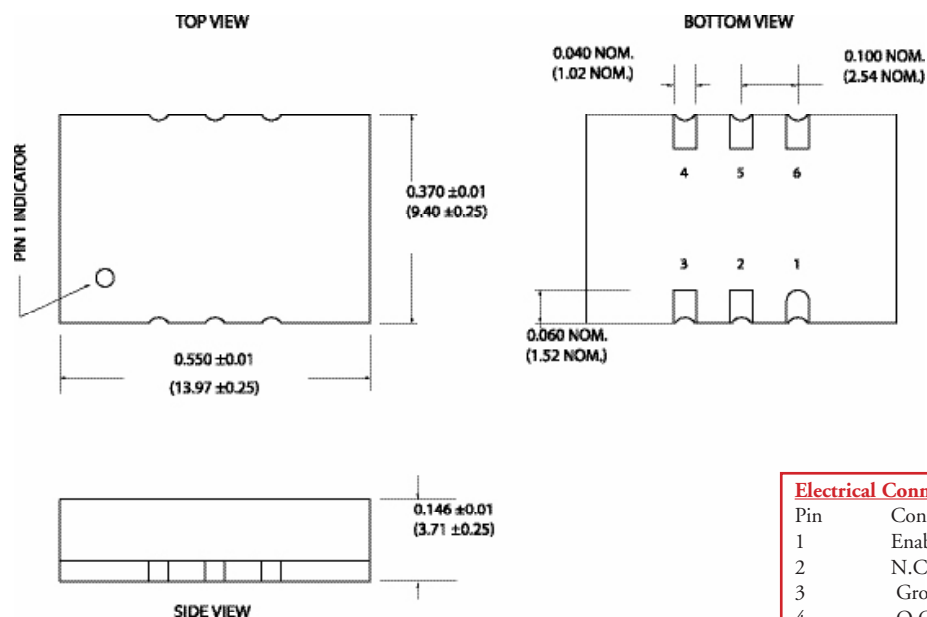
9 Customer Specific

A ±20ppm 0-70°C

B ±50ppm -40 to +85°C

C ±100ppm -40 to +85°C

### Drawing Specifications



#### Electrical Connections

Pin	Connection
1	Enable/Disable
2	N.C
3	Ground
4	Q Output
5	/Q Output
6	V <sub>CC</sub>

Dimensions shown in inches and (mm).



For the most up to date specifications on each NEL product, log on to our website—[www.nelfc.com](http://www.nelfc.com)

# LVDS

## SU-A2D10 Series *Rev A*

Frequency Range: 80.0MHz to 350.0MHz

### Operating Conditions and Output Characteristics

#### Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	—	—	80.0MHz	—	350.0MHz
Duty Cycle <sup>(2)</sup>	—	@ $V_O / 2$	45/55%	—	55/45%
Logic 0 <sup>(2)</sup>	$V_{OL}$	—	0.80V	—	1.10V
Logic 1 <sup>(2)</sup>	$V_{OH}$	—	1.25V	—	1.55V
Differential Voltage <sup>(2)</sup>	$V_{OD}$	—	250 mV	—	450 mV
Disable Voltage	—	$V_{EE}=0V$	—	—	0.8V
Enable Voltage <sup>(5)</sup>	—	$V_{EE}=0V$	2.0V	—	—
Rise & Fall Time <sup>(2)</sup>	tr,tf	20-80% $V_O$	—	—	700 ps
Tpd <sup>(4)</sup>	—	—	-0.5 ns	—	+0.5 ns
Jitter, RMS <sup>(3)</sup>	—	—	—	—	3 psec
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	$V_{CC}$	3.3V±5%	3.135V	3.3V	3.465V
Supply Current	$I_{CC}$	—	0.0 mA	—	80 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	$P_D$	—	—	—	277 mW
Lead Temperature	$T_L$	Soldering, 10 sec.	—	—	300°C
Load	100 ohms across differential outputs	—	—	—	—
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 $1 \times 10^{-8}$ atm.cc/sec of helium

#### Footnotes:

- 1) Standard frequency stability (±20,±25,±50ppm & others available)
- 2) With Load of 100 ohms across differential outputs.
- 3) Jitter performance is frequency dependent. Please contact factory for full Wavecrest characterization.  
RMS jitter bandwidth of 12kHz to 20MHz.
- 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.