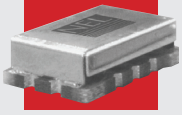


SU-A2D10 Series



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

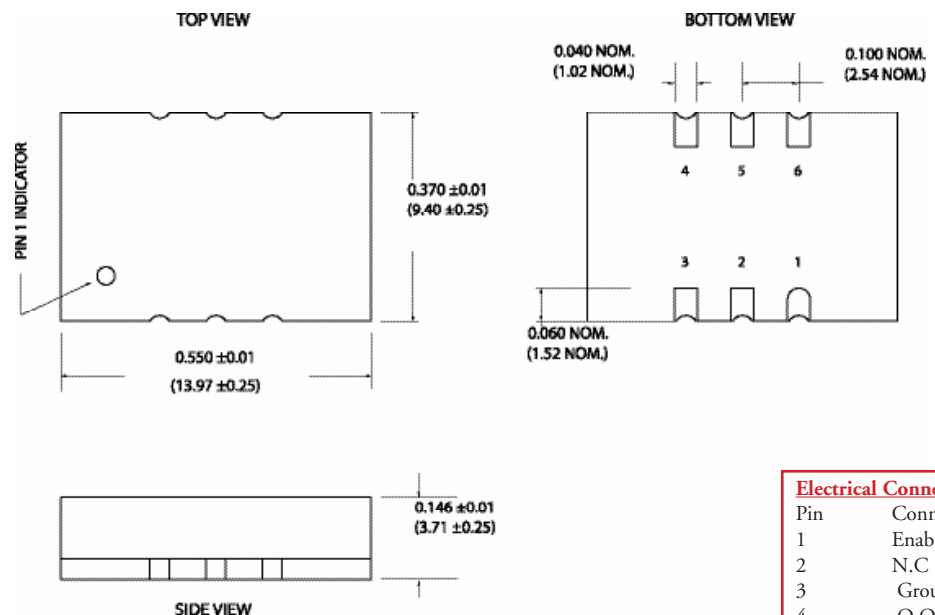
Input Voltage

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 _{CC}

Dimensions shown in inches and (mm).



For the most up to date specifications on each NEL product, log on to our website—www.nelc.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 ⁽²⁾	—	@ $V_O / 2$	45/55%	—	55/45%
Logic 0 ⁽²⁾	V_{OL}	—	0.80V	—	1.10V
Logic 1 ⁽²⁾	V_{OH}	—	1.25V	—	1.55V
Differential Voltage ⁽²⁾	V_{OD}	—	250 mV	—	450 mV
Disable Voltage	—	$V_{EE}=0V$	—	—	0.8V
Enable Voltage ⁽⁵⁾	—	$V_{EE}=0V$	2.0V	—	—
Rise & Fall Time ⁽²⁾	tr,tf	$20-80\%V_O$	—	—	700 ps
Tpd ⁽⁴⁾	—	—	-0.5 ns	—	+0.5 ns
Jitter, RMS ⁽³⁾	—	—	—	—	3 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_{CC}	$3.3V \pm 5\%$	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 1×10^{-8} atm.cc/sec of helium

Footnotes:

- 1) Standard frequency stability ($\pm 20, \pm 25, \pm 50$ ppm & 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.