

LVDS

SU-A2D30 Series

PATENT PENDING

Description

The **SU-A2D30 Series** of quartz crystal oscillators provides a LVDS compatible signal.

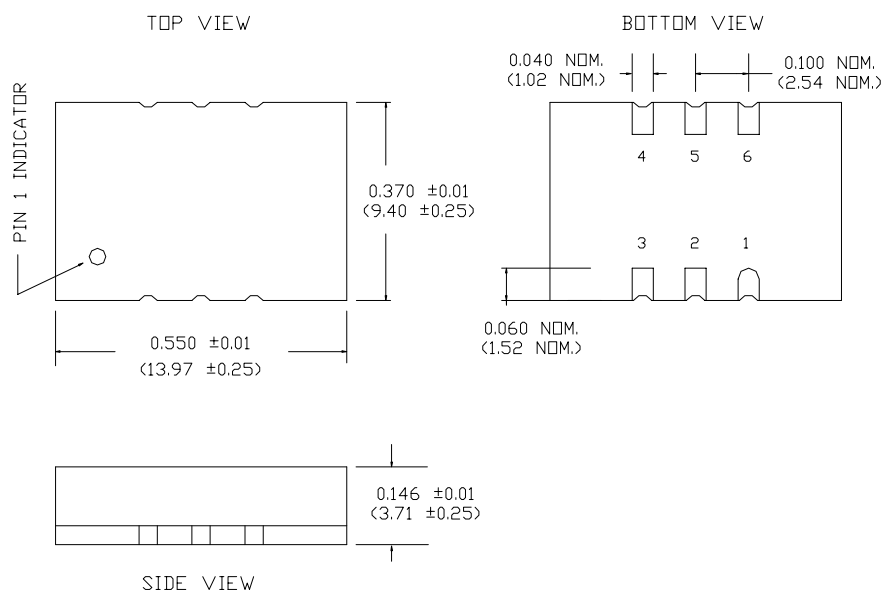
Features

- Wide frequency range - 350.0MHz to 750.0MHz
- Patent Pending, harmonic multiplication for extremely low jitter
- High frequency output eliminates the need for PLL multiplication
- Stabilities over temperatures as low as $\pm 20\text{ppm}$ eliminates SAW oscillator temperature problems
- 3.3V and 2.5V version available
- High Reliability - NEL HALT/HASS qualified for crystal oscillator start-up conditions
- User specified tolerance available
- Cover connected to ground
- Will withstand SMD reflow temperatures of 183°C for 4 minutes maximum
- High shock resistance, to 1000g

Electrical Connection

Pin Connection

- | | |
|---|-----------------|
| 1 | Enable |
| 2 | N/C |
| 3 | Ground |
| 4 | Q Output |
| 5 | /Q Output |
| 6 | V _{CC} |



DIMENSIONS IN: INCHES
(mm)



**FREQUENCY
CONTROLS, INC.**

357 Beloit Street, P.O. Box 457, Burlington, WI 53105-0457 U.S.A. Phone 262/763-3591 FAX 262/763-2881
Email: nelsales@nelfc.com www.nelfc.com

SU-A2D30 Series Continued
LVDS

Rev. C

Operating Conditions and Output Characteristics**Electrical Characteristics**

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	-----	-----	350.0MHz	-----	750.0MHz
Duty Cycle ⁽¹⁾	-----	@ 50% points	45/55%	-----	55/45%
Logic 0 ⁽¹⁾	V _{OL}	-----	0.925V	-----	-----
Logic 1 ⁽¹⁾	V _{OH}	-----	-----	-----	1.474V
Differential Voltage Swing ⁽¹⁾	V _{DIFF-OUT}	-----	500mV	700mV	-----
Rise & Fall Time ⁽¹⁾	t _{r,f}	20-80% V _O	-----	-----	300 psec
RMS Random Jitter ⁽⁵⁾	-----	-----	-----	-----	1 psec
Enable Voltage ⁽²⁾	-----	with V _{EE} =0V	-----	-----	0.8V
Disable Voltage	-----	with V _{EE} =0V	2.0V	-----	-----
Frequency Stability ⁽³⁾	dF/F	Overall conditions including: voltage, calibration, temp., 10 yr aging, shock, vibration	-100ppm	-----	+100ppm
Phase Noise ⁽⁴⁾	-----	@100Hz	-----	-----	- 80 dBc/Hz
	-----	@1kHz	-----	-----	-110 dBc/Hz
	-----	@10kHz	-----	-----	-130 dBc/Hz
	-----	@100kHz	-----	-----	-130 dBc/Hz
	-----	@1MHz	-----	-----	-135 dBc/Hz
	-----	@10MHz	-----	-----	-135 dBc/Hz

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	-----	120 mA
Output current	I _O	Low level Output Current	0.0 mA	-----	±50.0 mA
Operating temperature	T _A	-----	0°C	-----	70°C
Storage temperature	T _S	-----	-55°C	-----	125°C
Input: Logic High (ECL) - Disables V _{EE} or Open - Enables					
Lead temperature	T _L	Soldering, 10 sec.	-----	-----	300°C
Load		50 Ohm to V _{CC} -2V or Thevenin Equivalent, Bias Required			
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-883, 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

Footnotes:

- 1) With load of 100 ohms across differential outputs.
- 2) Open to Enable pin also enables the output.
- 3) Standard frequency stability (±20,±25,±50ppm & others available)
- 4) Phase Noise characterization available. Phase Noise is frequency dependant, phase noise specification references a 1.0GHz part.
- 5) RMS Jitter bandwidth of 12kHz to 20MHz.

Creating a Part Number

SU - A2D3X - FREQ		
Package Code		Tolerance/Performance
SU 6 pad 9x14mm 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
B 2.5V		


**FREQUENCY
CONTROLS, INC.**

357 Beloit Street, P.O. Box 457, Burlington, WI 53105-0457 U.S.A. Phone 262/763-3591 FAX 262/763-2881

Email: nelsales@nelfc.com www.nelfc.com