

LVDS SR-A2D30 Series

Description

The **SR-A2D30 Series** of quartz crystal oscillators provides a LVDS compatible signal. This device uses multiple ground pins for improved signal integrity.

Features

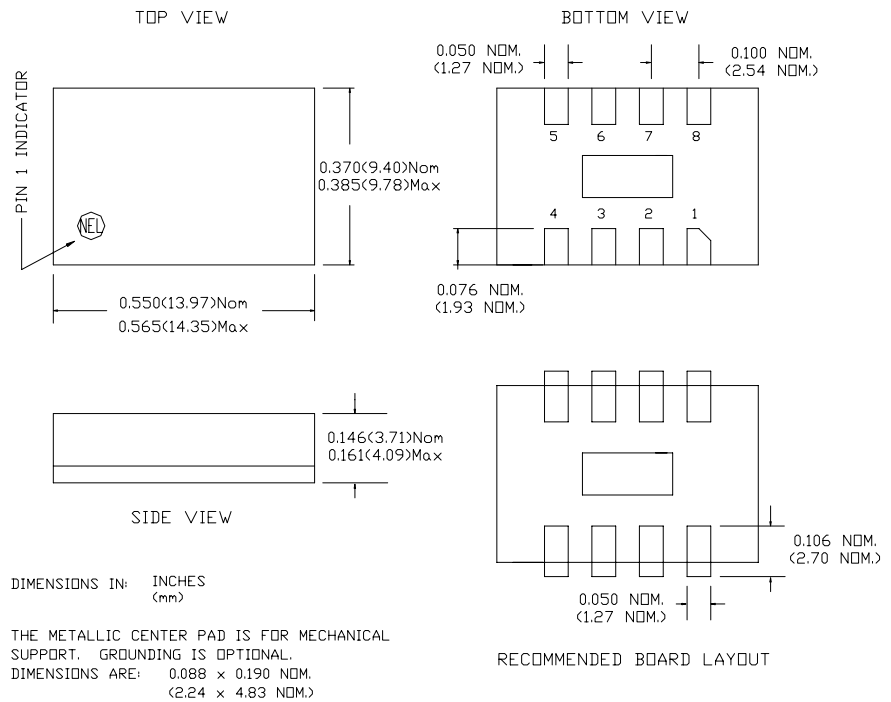
- Wide frequency range - 250.0MHz to 750.0MHz
- Low noise analog multiplication
- High frequency output eliminates the need for PLL multiplication
- Stabilities over temperatures as low as ± 20 ppm eliminates SAW oscillator temperature problems
- 3.3V and 2.5V version available
- High Reliability - NEL HALT/HASS qualified for crystal oscillator start-up conditions
- User specified tolerance available
- Cover connected to ground
- High shock resistance, to 1000g

Electrical Connection

Pin Connection

- | | |
|---|-----------------|
| 1 | V _{CC} |
| 2 | Ground |
| 3 | NC or Ground |
| 4 | Q Output |
| 5 | /Q Output |
| 6 | Ground |
| 7 | Ground |
| 8 | Enable |

NEL recommends connecting the large pad located between the general signal pads to ground for heat transfer and improved RF grounding.



SR-A2D30 Series Continued
LVDS

Rev. D

Operating Conditions and Output Characteristics

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	-----	-----	250.0MHz	-----	750.0MHz
Sub-harmonic	-----	-----	-----	-45dBc	-40dBc
Harmonic	-----	-----	-----	-----	-10dBc
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⁾	tr,tf	20-80%V _O	-----	-----	300 psec
Jitter RMS ⁽⁵⁾	-----	-----	-----	0.3 psec	0.5psec
Jitter Deterministic	-----	-----	-----	6 psec	12 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	-----	-----	-115 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					
Solder temperature	T _L	4 minutes	-----	-----	183°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-833, Method 1011, Condition A
Vibration	0.060" double amplitude 10 Hz to 55 Hz, 35g's 55Hz to 2000 Hz

Footnotes:

- 1) With load of 100 ohms across differential outputs.
- 2) Open to Enable pin also enables the output.
- 3) Standard frequency stability (others available)
- 4) Phase Noise characterization available. Phase Noise is frequency dependant, phase noise specification references a 1.0GHz part.
- 5) Jitter performance is frequency dependant. Please contact factory for full Aeroflex characterization. RMS jitter bandwidth of 12kHz to 20MHz

Creating a Part Number	
SR - A2D3X - FREQ	
Package Code	Tolerance/Performance
SR 8 pad 9x14mm SMD	0 ±100ppm 0-70°C
	1 ±50ppm 0-70°C
	7 ±25ppm 0-70°C
	9 Customer Specific
Input Voltage	Code Specification
A	3.3V
B	2.5V
	A ±20ppm 0-70°C
	B ±50ppm -40 to +85°C
	C ±100ppm -40 to +85°C

SR-A2D30 Series Continued

Max Reflow Profile

