

## LVDS

## SR-A2D30 Series

## PATENT PENDING

## Description

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

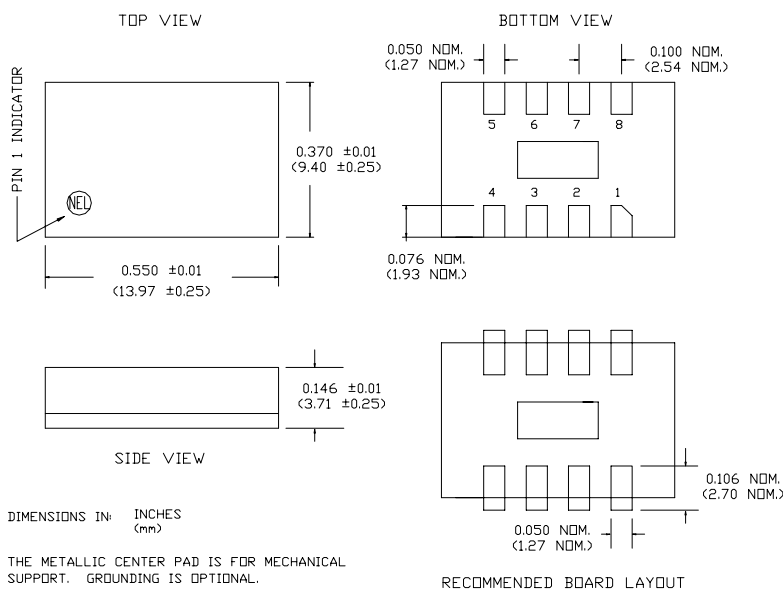
## Features

- Wide frequency range - 250.0MHz to 750.0MHz
- 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  $183^{\circ}\text{C}$  for 4 minutes maximum
- 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       |



SR-A2D30 Series Continued  
LVDS

Rev. B

**Operating Conditions and Output Characteristics****Electrical Characteristics**

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	-----	-----	250.0MHz	-----	750.0MHz
Duty Cycle <sup>(1)</sup>	-----	@ 50% points	45/55%	-----	55/45%
Logic 0 <sup>(1)</sup>	V <sub>OL</sub>	-----	0.925V	-----	-----
Logic 1 <sup>(1)</sup>	V <sub>OH</sub>	-----	-----	-----	1.474V
Differential Voltage Swing <sup>(1)</sup>	V <sub>DIFF-OUT</sub>	-----	500mV	700mV	-----
Rise & Fall Time <sup>(1)</sup>	t <sub>r,tf</sub>	20-80%V <sub>O</sub>	-----	-----	300 psec
RMS Random Jitter <sup>(5)</sup>	-----	-----	-----	-----	1 psec
Enable Voltage <sup>(2)</sup>	-----	with V <sub>EE</sub> =0V	-----	-----	0.8V
Disable Voltage	-----	with V <sub>EE</sub> =0V	2.0V	-----	-----
Frequency Stability <sup>(3)</sup>	dF/F	Overall conditions including: voltage, calibration, temp., 10 yr aging, shock, vibration	-100ppm	-----	+100ppm
Phase Noise <sup>(4)</sup>	-----	@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 <sub>CC</sub>	3.3V±5%	3.135V	3.3V	3.465V
Supply Current	I <sub>CC</sub>	-----	0.0 mA	-----	120 mA
Output current	I <sub>O</sub>	Low level Output Current	0.0 mA	-----	±50.0 mA
Operating temperature	T <sub>A</sub>	-----	0°C	-----	70°C
Storage temperature	T <sub>S</sub>	-----	-55°C	-----	125°C
Input: Logic High (ECL) - Disables V <sub>EE</sub> or Open - Enables					
Lead temperature	T <sub>L</sub>	Soldering, 10 sec.	-----	-----	300°C
Load		50 Ohm to V <sub>CC</sub> -2V or Thevenin Equivalent, Bias Required			
Start-up time	t <sub>S</sub>	-----	-----	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 (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**

Package Code		Input Voltage		Tolerance/Performance	
SR 8 pad 9x14mm SMD		Code Specification			
		A	3.3V	0 ±100ppm 0-70°C	
		B	2.5V	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	


**FREQUENCY  
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