

Differential Sine Wave SR-A2A70 Series

Description

The **SR-A2A70 Series** of quartz crystal oscillators provide Differential Sine Wave signals. This device is to operate using positive voltage and uses multiple ground pins for improved signal integrity.

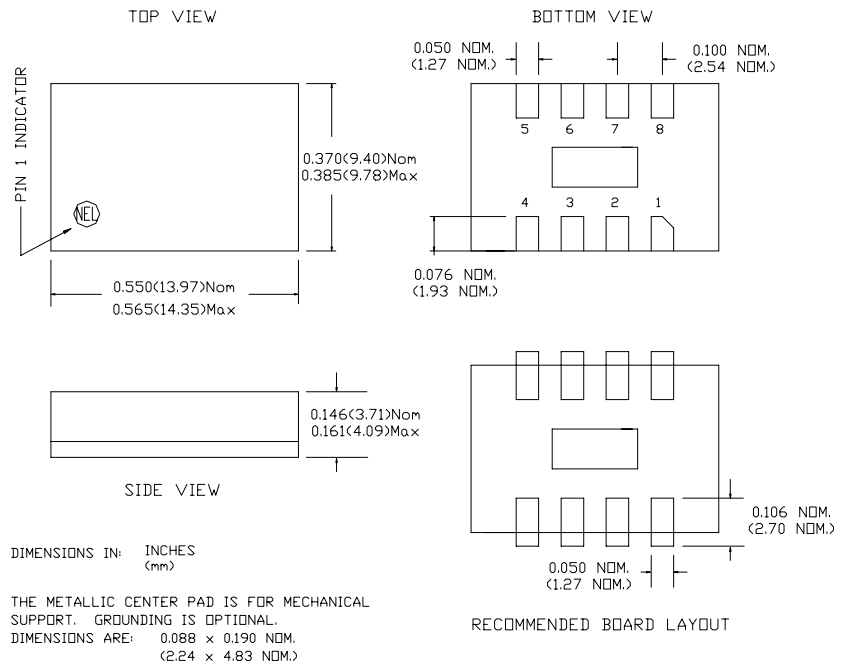
Features

- Wide frequency range – 250MHz to 700MHz
- 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
- COTS/Dual use

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-A2A70 Series Continued Differential Sine Wave

Rev. U

Operating Conditions and Output Characteristics

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	-----	-----	250MHz	-----	700MHz
Sub-Harmonic	-----	-----	-----	-45dBc	-40dBc
Harmonic	-----	-----	-----	-----	-10dBc
Output Voltage	V _{P-P}	F<1GHz	0.60V	0.85V	-----
		F>1GHz	0.3V	0.4V	-----
Jitter RMS ⁽⁵⁾	-----	-----	-----	0.3 psec	0.5 psec
Jitter Deterministic	-----	-----	-----	6ps	12ps
Enable Voltage ⁽³⁾	----	PECL logic low or floating	-----	-----	V _{CC} -1.475V
Disable Voltage	-----	PECL logic high	V _{CC} -1.165V	-----	-----
Frequency Stability ⁽¹⁾	dF/F	Overall conditions including: voltage, calibration, temp., 10 yr aging, shock, vibration	-100ppm	-----	+100ppm
Phase Noise ⁽²⁾	-----	@ 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}	50 ohm termination	-----	-----	140 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
Load ⁽⁴⁾	50 Ohm termination	-----	-----	-----	-----
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

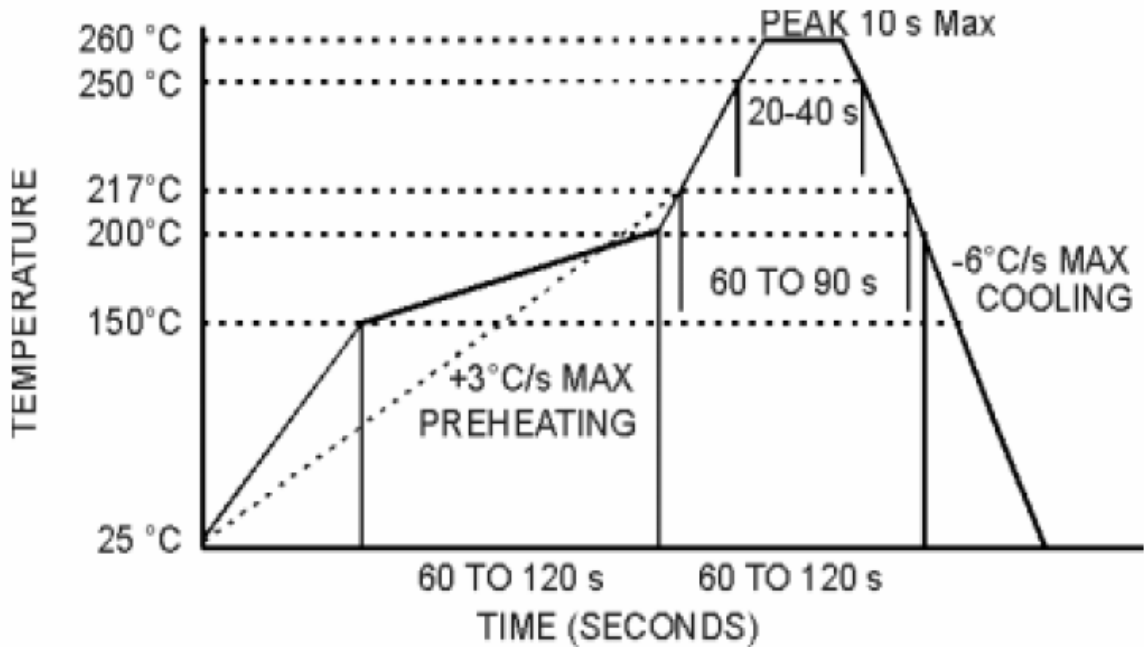
Footnotes:

- 1) Standard frequency stability (±20,±25,±50ppm & others available)
- 2) Phase Noise characterization available. Phase Noise is frequency dependant, phase noise specification references a 1.0GHz part.
- 3) Open to Enable pin also enables to output.
- 4) Internally AC coupled output
- 5) Jitter performance is frequency dependent. Please contact factory for full Aeroflex characterization.
RMS jitter bandwidth of 12kHz to 20MHz

Creating a Part Number	
SR - A2A7X - 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 ±20ppm 0-70°C
A 3.3V	B ±50ppm -40 to +85°C
B 2.5V	C ±100ppm -40 to +85°C

SR-A2A70 Series Continued

Max Reflow Profile



The device may be reflowed once. Reflowing upside down is not allowed. NO CLEAN assembly is recommended.