

SR-A2A70 Series



Size, mm

9 x 14

I/O

8 pad

Supply Voltage

3.3V / 2.5V

- Patent Pending, harmonic multiplication for extremely low jitter
- High frequency output eliminates the need for PLL multiplication
- Stabilities over temperatures as low as ± 20 ppm eliminates SAW oscillator temperature problems

Differential Sine Wave SR-A2A70 Series 0435A Rev J

Frequency Range: 250.0 MHz-1.7 GHz

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 – 250.0MHz to 1.7GHz
- User specified tolerance available
- Will withstand SMD reflow temperatures of 183°C for 4 minutes maximum
- High shock resistance, to 1000g
- High Reliability - NEL HALT/HASS qualified for crystal oscillator start-up conditions
- Cover connected to ground
- 3.3V and 2.5V versions available

Creating a Part Number

SR - A2A7X - FREQ

Package Code

SR 8 pad 9x14 mm SMD

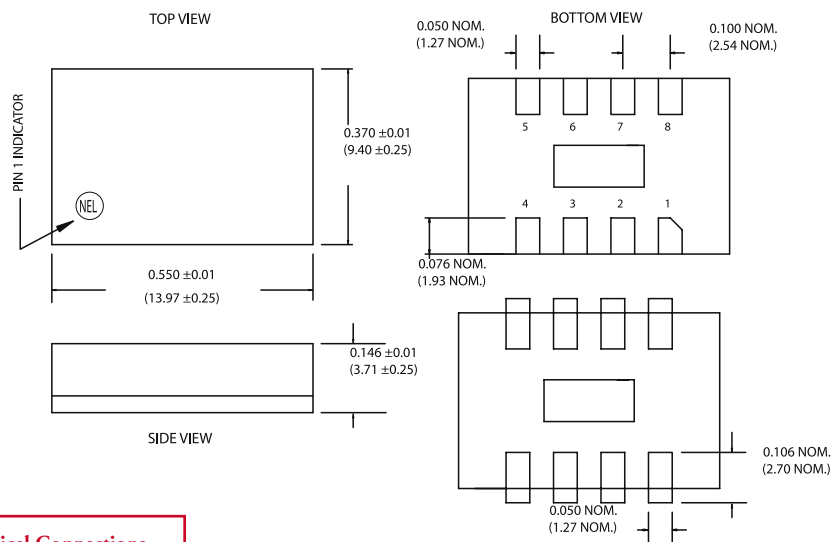
Input Voltage

Code	Specification
A	3.3 V
B	2.5 V

Tolerance/Performance

0	± 100 ppm 0-70°C
1	± 50 ppm 0-70°C
7	± 25 ppm 0-70°C
9	Customer Specific
A	± 20 ppm 0-70°C
B	± 50 ppm -40 to +85°C
C	± 100 ppm -40 to +85°C

Drawing Specifications



Electrical Connections

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

Recommended Board Layout
Dimensions shown in inches (mm).

The metallic center pad was designed for mechanical support. Grounding of this pad is optional. It measures 0.088 x 0.190 NOM (2.24 x 4.83 NOM).



For the most up to date specifications on each NEL product, log on to our website—www.nelfc.com

Differential Sine Wave

SR-A2A70 Series 0435A Rev J

Frequency Range: 250.0MHz-1.7 GHz

Operating Conditions and Output Characteristics

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	—	—	250.0 MHz	—	1.7 GHz
Harmonic Spurious	—	—	—	-25dBc	-20dBc
Nonharmonic Spurious	—	—	—	—	-60dBc
Output Voltage	V _{P-P}	—	0.60 V	0.85 V	—
Jitter RMS ⁽⁵⁾	—	—	—	0.3 psec	0.5 psec
Enable Voltage ⁽³⁾	—	—	0.7 V _{CC}	—	—
Disable Voltage	—	—	—	—	0.3 V _{CC}
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%	3.135 V	3.3 V	3.465 V
Supply Current	I _{CC}	50 ohm termination	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
Lead Temperature	T _L	Soldering, 10 sec.	—	—	300°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-833, Method 1011, Condition A
Vibration	0.060" double amplitude 10 Hz to 55 Hz, 35g's 55 Hz to 2000 Hz
Soldering Condition	300°C for 10 seconds

Footnotes:

- 1) Standard frequency stability (±20, ±25, ±50 ppm & others available).
- 2) Phase Noise characterization available. Phase Noise is frequency dependent, phase noise specification references a 1.0GHz part.
- 3) Open to enable pin also enables the 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.