

# 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  $\pm 20$ 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

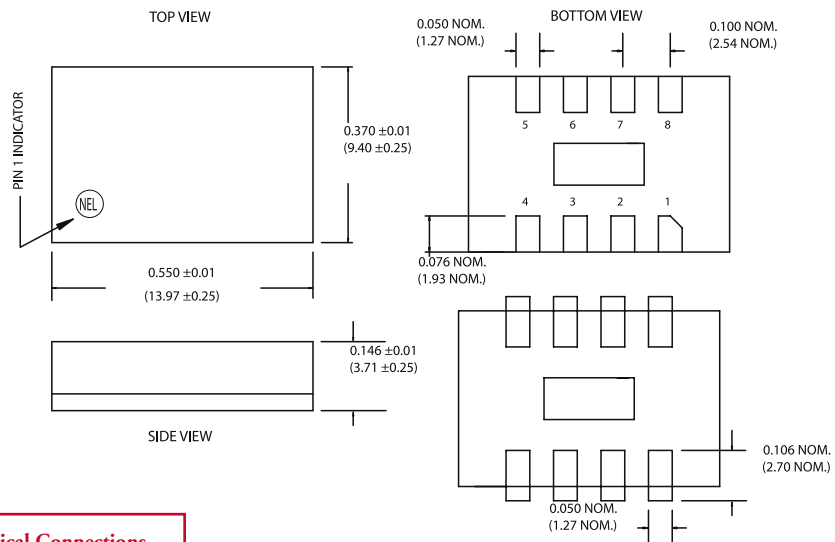
#### Input Voltage

Code	Specification
A	3.3 V
B	2.5 V

#### Tolerance/Performance

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

## Drawing Specifications



### Electrical Connections

Pin	Connection
1	V <sub>cc</sub>
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).*



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# 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 <sub>P-P</sub>	—	0.60 V	0.85 V	—
Jitter RMS <sup>(5)</sup>	—	—	—	0.3 psec	0.5 psec
Enable Voltage <sup>(3)</sup>	—	—	0.7 V <sub>CC</sub>	—	—
Disable Voltage	—	—	—	—	0.3 V <sub>CC</sub>
Frequency Stability <sup>(1)</sup>	dF/F	Overall conditions including: voltage, calibration, temp., 10 yr aging, shock, vibration	-100ppm	—	+100ppm
Phase Noise <sup>(2)</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%	3.135 V	3.3 V	3.465 V
Supply Current	I <sub>CC</sub>	50 ohm termination	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
Lead Temperature	T <sub>L</sub>	Soldering, 10 sec.	—	—	300°C
Load <sup>(4)</sup>	50 ohm termination	—	—	—	—
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-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.