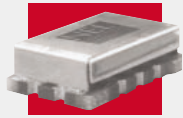


# S3-AA22X Series



## Size, mm

14 x 17

## I/O

8 pad

## Supply Voltage

3.3V

- Patent Pending, harmonic multiplication for extremely low jitter
- High frequency output eliminates the need for PLL multiplication



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# Sine Wave TCXO

## S3-AA22X Series 0551B Rev D

Frequency Range: 200 MHz to 1.7 GHz

## Description

The S3-AA22X Series of temperature compensated quartz crystal oscillators provide a Sine Wave signal.

## Features

- Wide frequency range – 200MHz to 1.7GHz
- User specified tolerance available
- 3.3V
- High Reliability - NEL HALT/HASS qualified for crystal oscillator start-up conditions
- Cover connected to ground
- Will withstand SMD reflow temperatures of 183°C for 4 minutes maximum
- High shock resistance, to 1000g

## Creating a Part Number

### S3 - AA22X - FREQ

#### Package Code

S3 8 pad 14x17mm SMD

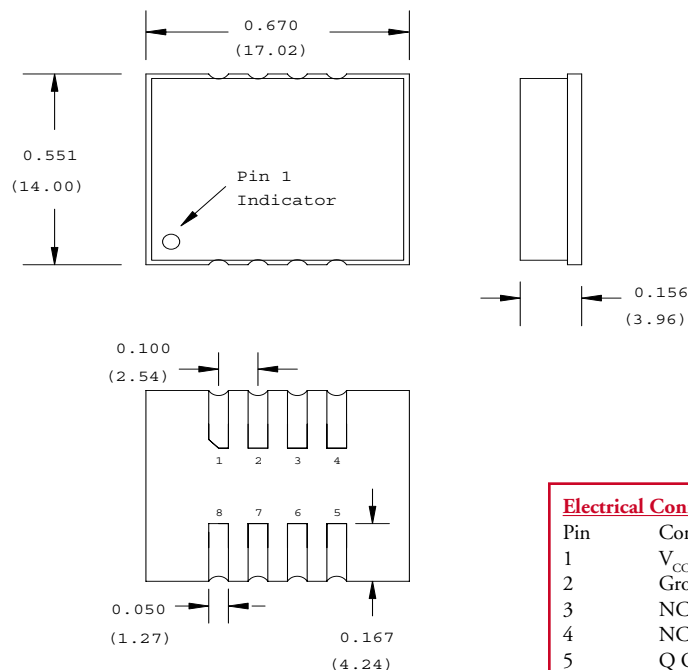
#### Input Voltage

Code Specification  
A 3.3V

#### Tolerance/Performance

9 Customer Specific  
D  $\pm 10$ ppm -40 to +85°C  
E  $\pm 2.5$ ppm -40 to +85°C  
F  $\pm 1$ ppm -40 to +85°C

## Drawing Specifications



Dimensions shown in inches and (mm).

It measures 0.088 x 0.190 (2.24 x 4.83).

### Electrical Connections

Pin	Connection
1	V <sub>CC</sub>
2	Ground
3	NC
4	NC
5	Q Output
6	/Q Output
7	NC
8	NC/V <sub>C</sub>

# Sine Wave TCXO

## S3-AA22X Series 0551B Rev D

Frequency Range: 200 MHz to 1.7 GHz

### Operating Conditions and Output Characteristics

#### Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	—	—	200MHz	—	1.7GHz
Harmonic Spurious	—	—	—	-25 dBc	-20 dBc
Nonharmonic Spurious	—	—	—	—	-60 dBc
Output Voltage	V <sub>P-P</sub>	—	0.60V	0.85V	—
Jitter, RMS <sup>(5)</sup>	—	—	—	0.3 psec	0.5 psec
Frequency Stability <sup>(1)</sup>	dF/F	Overall conditions including: voltage, calibration, temp., shock, vibration	-2.5ppm	—	+2.5ppm
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
Aging	—	10 years	—	—	±10ppm

#### 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>	50 ohm termination	0.0 mA	—	90 mA
Output Current	I <sub>O</sub>	Low level Output Current	0.0 mA	—	±50.0 mA
Operating Temperature	T <sub>A</sub>	—	-40°C	—	85°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 for S3-AA22E (others available).
- 2) Phase Noise characterization available. Phase noise is frequency dependant, phase noise specification references a 1.0GHz part.
- 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.