

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

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

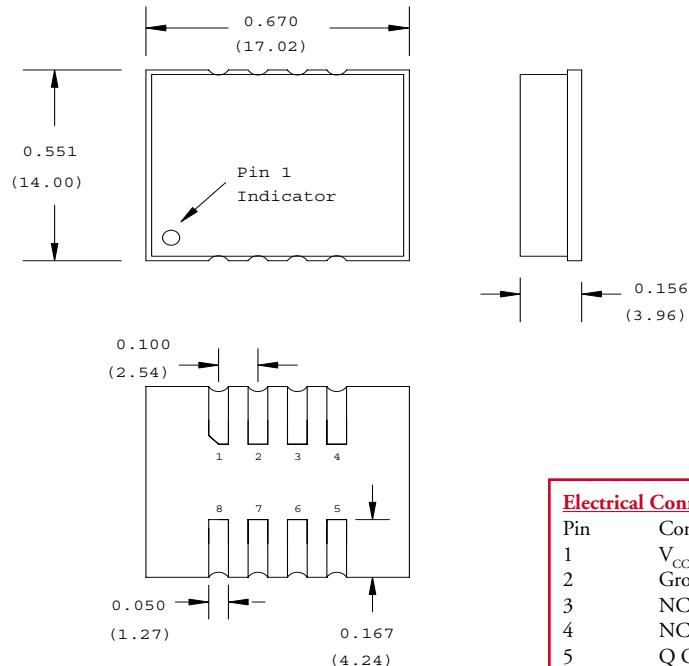
Input Voltage

Code Specification
A 3.3V

Tolerance/Performance

9 Customer Specific
D ±10ppm -40 to +85°C
E ±2.5ppm -40 to +85°C
F ±1ppm -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 _{CC}
2	Ground
3	NC
4	NC
5	Q Output
6	/Q Output
7	NC
8	NC/V _C



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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 _{P-P}	—	0.60V	0.85V	—
Jitter, RMS ⁽⁵⁾	—	—	—	0.3 psec	0.5 psec
Frequency Stability ⁽¹⁾	dF/F	Overall conditions including: voltage, calibration, temp., shock, vibration	-2.5ppm	—	+2.5ppm
Phase Noise ⁽²⁾	—	@100Hz	—	—	-80 dBc/Hz
	—	@1kHz	—	—	-115 dBc/Hz
	—	@10kHz	—	—	-130 dBc/Hz
	—	@100kHz	—	—	-130 dBc/Hz
	—	@1MHz	—	—	-135 dBc/Hz
Aging	—	@10MHz	—	—	-135 dBc/Hz
	—	10 years	—	—	±10ppm

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	0.0 mA	—	90 mA
Output Current	I _O	Low level Output Current	0.0 mA	—	±50.0 mA
Operating Temperature	T _A	—	-40°C	—	85°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 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.