Rev. H

SU-XA6XXX-X Series
Sinewave Output XO

Description

The SU-XA6XXX Series of crystal oscillators (XO) provides a general purpose sinewave output. It's packaged in a miniature, FR-4 based 9x14 mm SMD package.

Applications and Features

- General purpose applications requiring a sinewave output
- High Reliability – NEL HALT/HASS qualified for crystal oscillator start-up conditions
- Low Phase Noise and Jitter
- Frequency Range to 200 MHz
- SONET ± 20 ppm overall stability available
- High Shock Resistance, to 1000g
- COTS/Dual use

Creating a Part Number

SU - X A6 X X X - X - FREQ

Package code
SU 6 pad 9x14 mm SMD

Operating Voltage
0 5.0 V ± 5%
A 3.3 V ± 5%
B 2.5 V ± 5%

Enable Option
N N/C

Temperature Range, ºC
A 0 to 50
B 0 to 70
C -20 to 70
D -40 to 85
9 Customer Specific

Frequency Stability, ppm
E ±20
F ±25
G ±50
H ±100
J ±32
9 Customer specific

Environmental
L Contains a level of lead that is in excess of RoHS directive and is not designed for reflow
R RoHS compliant

NEL FREQUENCY CONTROLS, INC.

357 Beloit Street, P.O. Box 457, Burlington, WI 53105-0457 U.S.A. Phone 262/763-3591 FAX 262/763-2881

Email: nelsales@nelfc.com www.nelfc.com

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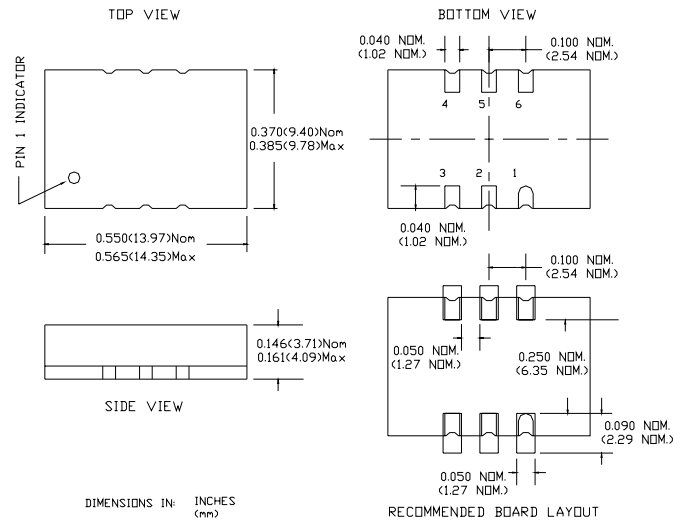
Drawing Specification



OUTLINE TOLERANCE:
±0.015" / 0.4mm
(Unless otherwise specified)

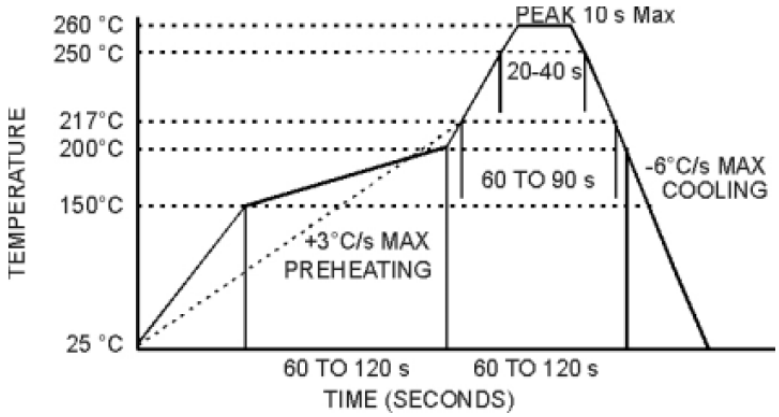
PIN FUNCTIONS:
[1] N/C
[2] N/C
[3] CASE / GROUND
[4] OUTPUT
[5] N/C
[6] SUPPLY VOLTAGE

MARKING (EXAMPLE):
SU-XXXX

Environmental and Mechanical Characteristics

Operating temp. range	see part # table
Mechanical Shock	Per MIL-STD-202, Method 213, Cond. A
Thermal Shock	Per MIL-STD-883, Method 1011, Cond. A
Vibration	Per MIL-STD-883, Method 2007, Cond. A
Hermetic Seal	Leak rate less than $1x10^{-8}$ atm.cc/s of helium , crystal only.
Soldering conditions	See MAX reflow profile below; The device may be reflowed once. Reflowing upside down is not allowed. NO CLEAN assembly is recommended.

MAX Reflow Profile



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Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Operating Temperature Range	To	-40 to +85	ºC
Storage Temperature Range	Tst	-50 to +90	ºC
Supply Voltage	Vcc	-0.5 to 4.5	V

Electrical Parameters

Parameter		Symb	Conditions, Note		MIN	TYP	MAX	Unit
Nominal Frequency		Fo			10		200	MHz
Supply Voltage		Vcc	Code B (2.5V) Code A (3.3V) Code 0 (5.0V)		2.375 3.135 4.750	2.5 3.3 5.0	2.625 3.465 5.250	V
Supply Current (2)		Icc	Code B (2.5V) Code A (3.3V) Code 0 (5.0V)			45 50 60	50 60 75	mA
Output Type						sinewave		
Load			Internally AC coupled			50		Ohm
Output Power		Pout	Vcc=2.5V, 50 Ohm Load Vcc=3.3V, 50 Ohm Load Vcc=5.0V, 50 Ohm Load		-3 0 4	0 3 7		dBm
Output Impedance						50		Ohms
Return Loss						10		dB
Jitter	Integrated	J	Integrated from Phase Noise, 12 KHz to 20 MHz , RMS			0.1	0.2	ps
			100Hz to 80KHz,RMS				1.0	ps
			50 KHz to 80 MHz			0.3		ps
	Wavecrest characterized		Random period,			2.5		ps
			Accumul., pk-to-pk			36		ps
			Determin.			0		ps
Phase Noise		£(Δf)	@50 MHz	@ 10 Hz @100 Hz @1 KHz @10KHz @100KHz @>1MHz		-70 -100 -128 -145 -150 -155	-65 -95 -123 -140 -145 -150	dBc/Hz
Frequency Stability		ΔF/F	Overall, including initial calibration, temperature, aging 10 years, shock and vibration				From ±20, see table for part number	ppm

Notes:

1. All parameters, unless noted otherwise are specified for nominal conditions, i.e. ambient temperature is 25 ºC, Vcc – nominal.
2. Current is frequency dependent.

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