

# SU-XA6XXX-X Series Sinewave Output XO

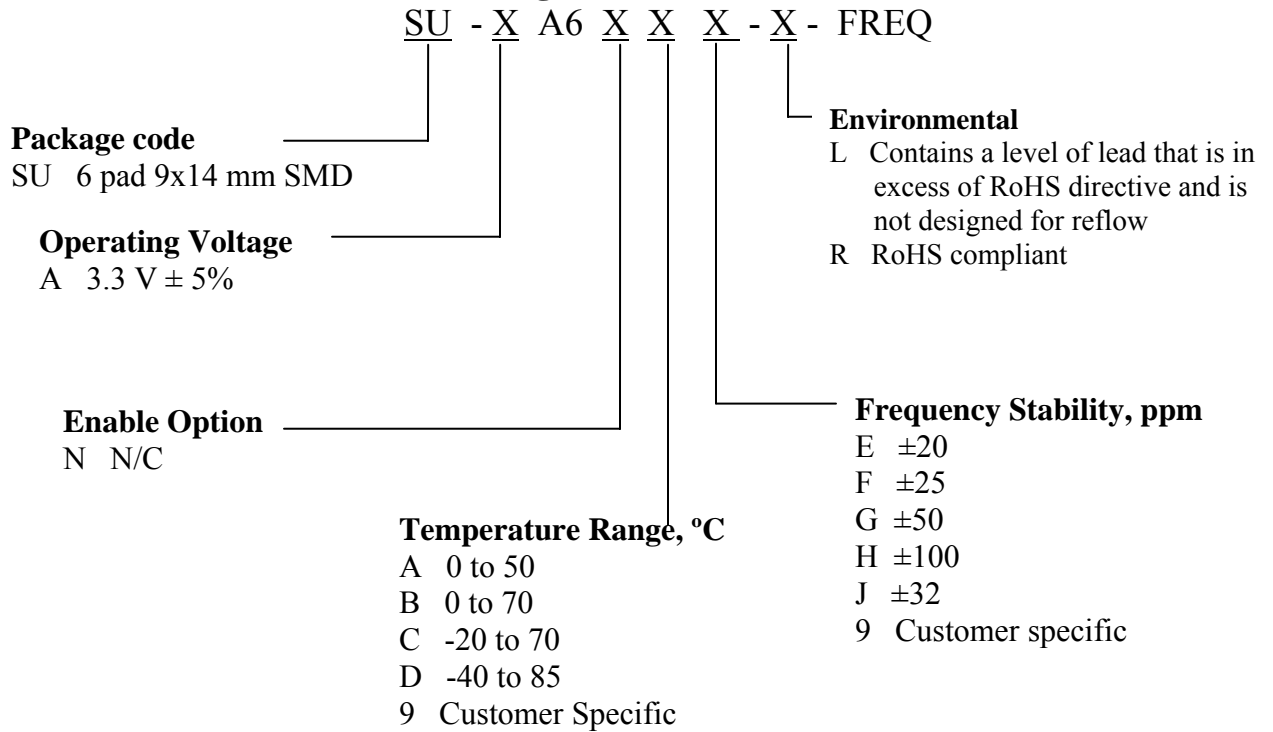
## Description

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 10 MHz
- SONENT ± 20 ppm overall stability available
- High Shock Resistance, to 1000g
- COTS/Dual use

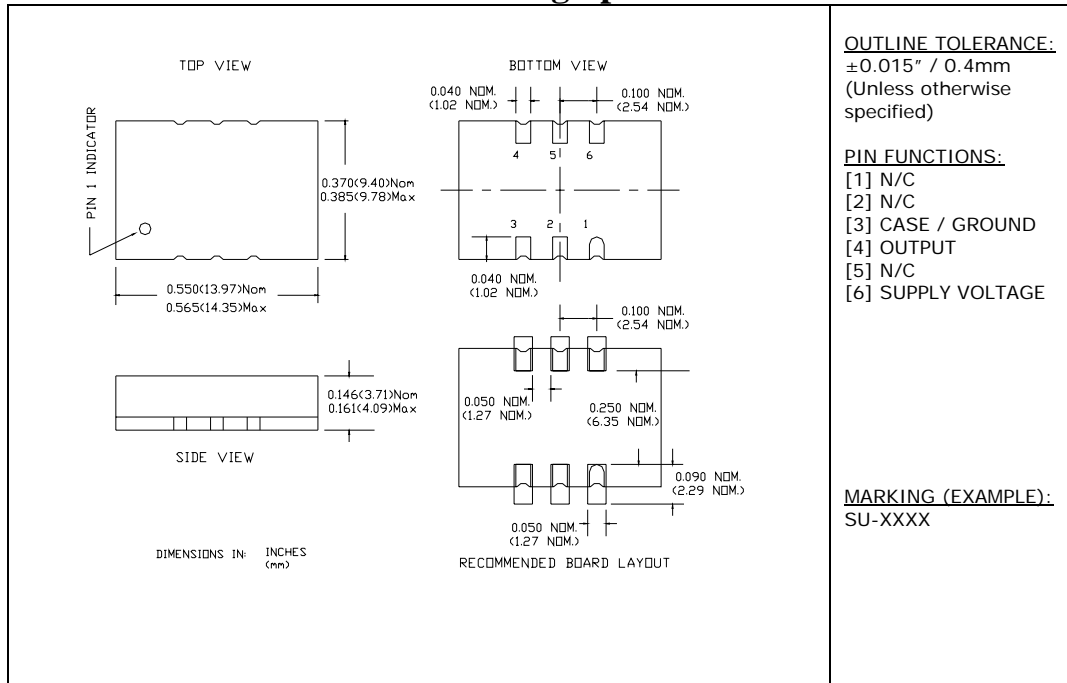
### Creating a Part Number



**SU-XA6XXX-X Series**

Rev. B

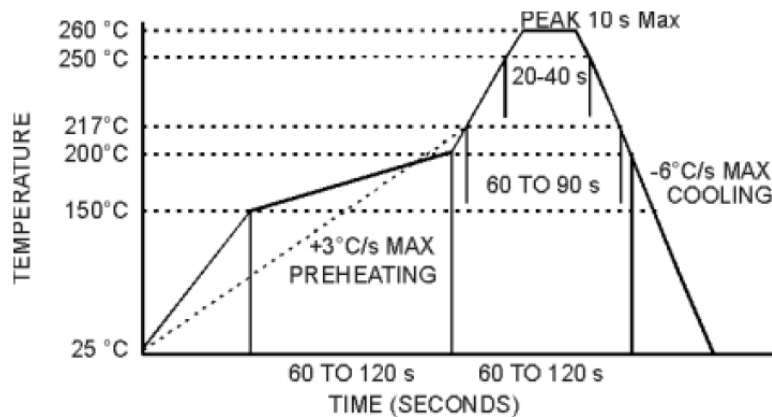
**Drawing Specification**



**Environmental and Mechanical Characteristics**

|                              |  |
|------------------------------|--|
| <b>Operating temp. range</b> | see part # table   |
| <b>Mechanical Shock</b>      | Per MIL-STD-202, Method 213, Cond. A   |
| <b>Thermal Shock</b>         | Per MIL-STD-883, Method 1011, Cond. A  |
| <b>Vibration</b>             | Per MIL-STD-883, Method 2007, Cond. A  |
| <b>Hermetic Seal</b>         | Leak rate less than $1 \times 10^{-8}$ atm.cc/s of helium, crystal only.   |
| <b>Soldering conditions</b>  | 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**



The device may be reflowed once. Reflowing upside down is not allowed. NO CLEAN assembly is recommended.

SU-XA6XXX-X Series

Rev. B

**Absolute Maximum Ratings**

| Parameter                   | Symbol | Value       | Unit |
|-----------------------------|--------|-------------|------|
| Operating Temperature Range | To     | -40 to +85  | °C   |
| Storage Temperature Range   | Tst    | -50 to +90  | °C   |
| Supply Voltage              | Vcc    | -0.5 to 3.6 | V    |

**Electrical Parameters**

| Parameter                     | Symb  | Conditions, Note   | MIN   | TYP      | MAX                                 | Unit   |
|-------------------------------|-------|--|-------|----------|-------------------------------------|--------|
| Nominal Frequency             | Fo    |  | 1.0   |          | 10.0                                | MHz    |
| Supply Voltage                | Vcc   | Code A (3.3V)  | 3.135 | 3.3      | 3.465                               | V      |
| Supply Current <sup>(2)</sup> | Icc   | Code A (3.3V)  |       | 10       |                                     | mA     |
| Output Type                   |       |  |       | sinewave |                                     |        |
| Load                          |       | Internally AC coupled  |       | 50       |                                     | Ohm    |
| Output Power <sup>(3)</sup>   | Pout  | Vcc=3.3V, 50 Ohm Load  | -3    | 0        | 3                                   | dBm    |
| Output Impedance              |       |  |       | 50       |                                     | Ohms   |
| Return Loss                   |       |  |       | 10       |                                     | dB     |
| Phase Noise                   | £(Δf) |  |       |          |                                     | dBc/Hz |
|                               |       | @ 10 Hz  |       | -90      |                                     |        |
|                               |       | @100 Hz  |       | -120     |                                     |        |
|                               |       | @1 KHz   |       | -135     |                                     |        |
|                               |       | @10KHz   |       | -145     |                                     |        |
|                               |       | @100KHz  |       | -150     |                                     |        |
|                               |       | @>1MHz   |       | -150     |                                     |        |
| 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 °C, Vcc – nominal.
2. Current is frequency dependent.
3. Other output levels are available up to +12 dBm.

