

AB-X0A3XX-X Series
SINE-WAVE UHF, Low Phase Noise XO

Rev. K

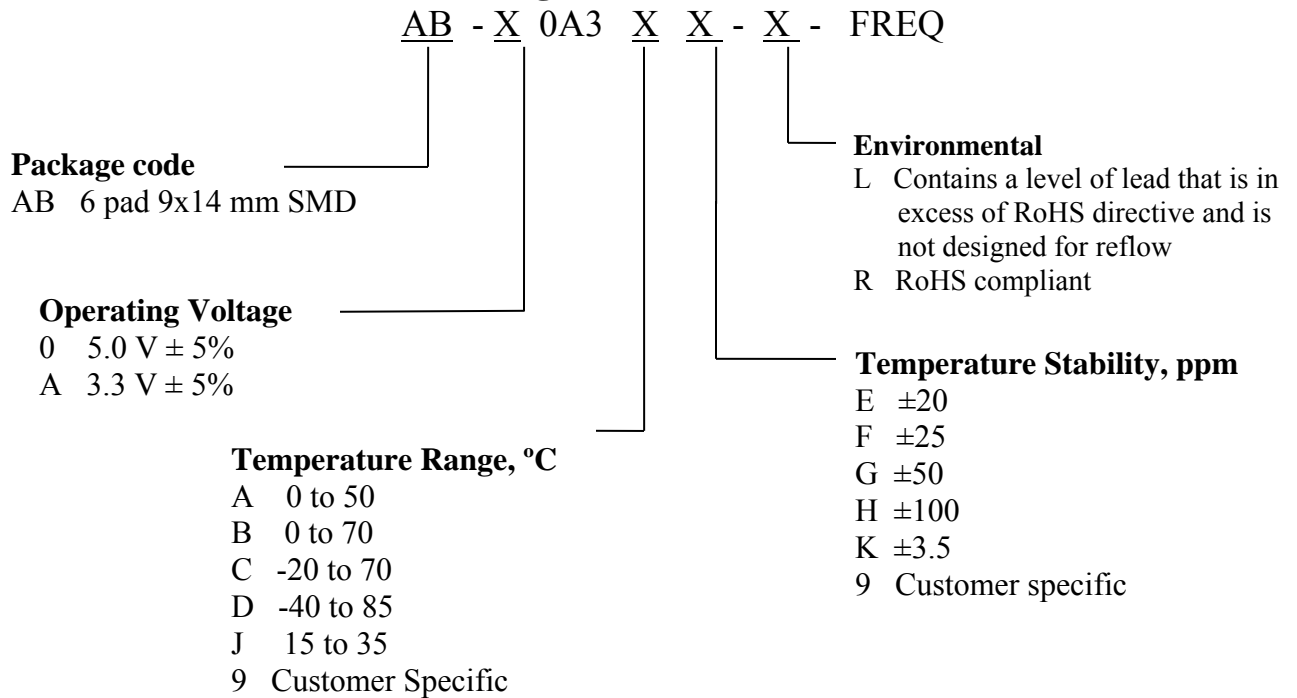
Description

The **AB-X0A3XX** crystal oscillators (XO) provides ultra high frequency with a single-ended sinewave output. The device is based on low noise analog harmonic frequency multiplication, providing exceptionally low Phase Noise and Jitter. It's packaged in a miniature, FR-4 based 9x14 mm SMD package.

Applications and Features

- Wide frequency range – 200.0MHz to 1.005 GHz
- Fiber Channel; 10 GbE; Infiniband; Network Processors; SONET/SDH
- High Reliability – NEL HALT/HASS qualified for crystal oscillator start-up conditions
- Ultra Low Phase Noise and Jitter
- High Shock Resistance, to 1000g
- COTS/Dual use

Creating a Part Number



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Drawing Specification

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

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

All dimensions: Inches [mm]

RECOMMENDED PAD LAYOUT

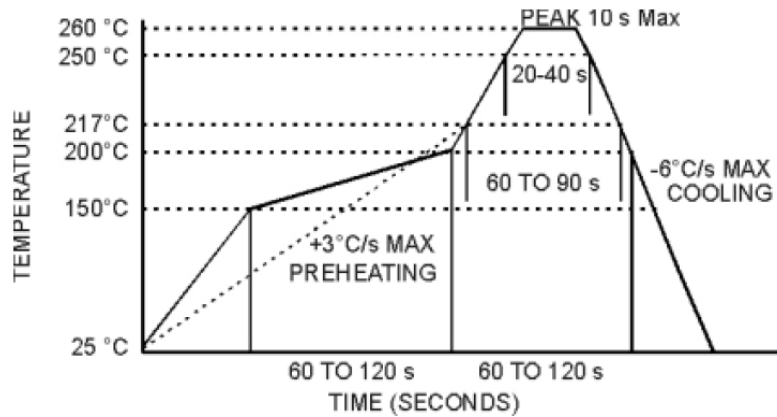
PIN FUNCTIONS:
[1] N/C
[2] N/C
[3] GROUND
[4] OUTPUT
[5] N/C
[6] Vcc

MARKING (EXAMPLE):
AB-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 1×10^{-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



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

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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 5.5	V

Electrical Parameters (1)

Parameter	Symb	Conditions, Note	MIN	TYP	MAX	Unit	
Nominal Frequency	Fo		200		1,005	MHz	
Supply Voltage	Vcc	Code 0 Code A	4.75 3.135	5.0 3.3	5.25 3.465	V	
Output Power	Pout	Vcc=3.3V, 50 Ohm Load <=400MHz Vcc=5.0V, 50 Ohm Load <=400MHz Vcc=3.3V, 50 ohm Load >400MHz Vcc=5.0V, 50 ohm Olad >400MHz	0 4 -5 0	3 7 0 5	5	dBm	
Supply current	Icc	Vcc=3.3V, 50 Ohm Load Vcc=5.0V, 50 Ohm Load		100 120	110 130	mA	
Load		Internally AC coupled	45	50	55	Ohm	
Output Impedance				50		Ohm	
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	J	Random period,		2.5		ps
			Accumul., pk-to- pk		25		ps
			Deterministic		1		ps
Sub-Harmonics		@ 500.0MHz		-50	-46	dBc	
Phase Noise	£(Δf)	@ 500.0MHz	@ 10 Hz @100 Hz @1 KHz @10KHz @100KHz @>1MHz	-70 -103 -128 -145 -150 -155		dBc/Hz	
Frequency Stability	ΔF/F	See table for creating a part number				ppm	

Note 1. All parameters, unless otherwise specified, are at nominal conditions, ie: T=25°C, Nominal Vcc & Nominal Load.