

AB-X29NXXX-X Series PECL/LVPECL UHF XO

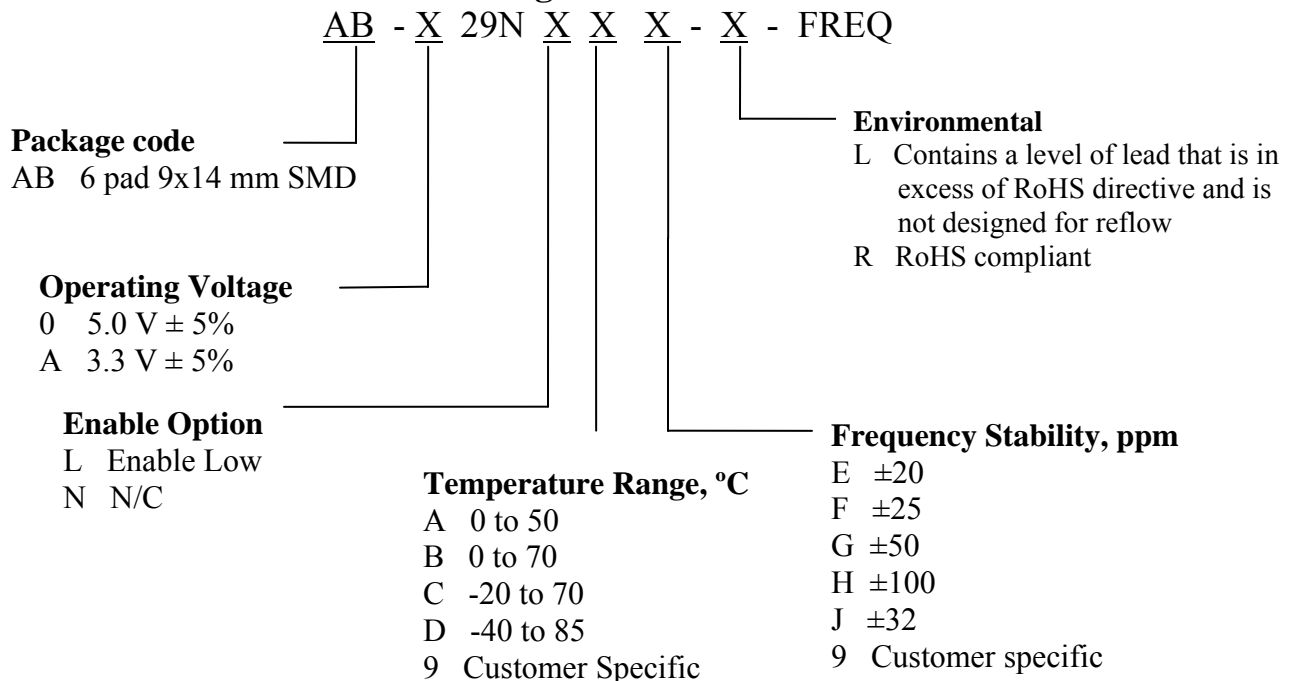
Description

The **AB-X29NXXX Series** of crystal oscillators (XO) provides ultra high frequency with PECL/LVPECL complementary outputs. The outputs can be disabled for test automation or combining multiple clocks. 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

- 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
- Frequency Range to 1,000 MHz
- SONET ± 20 ppm overall stability available
- High Shock Resistance, to 1000g
- COTS/Dual use

Creating a Part Number



AB-X29NXXX-X Series

Rev. K

Drawing Specification

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

PIN FUNCTIONS:
[1] N/C
[2] EN / DIS or N/C
[3] CASE / GROUND
[4] OUTPUT
[5] COMP. OUTPUT
[6] SUPPLY VOLTAGE

MARKING (EXAMPLE):
AB-XXXX

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

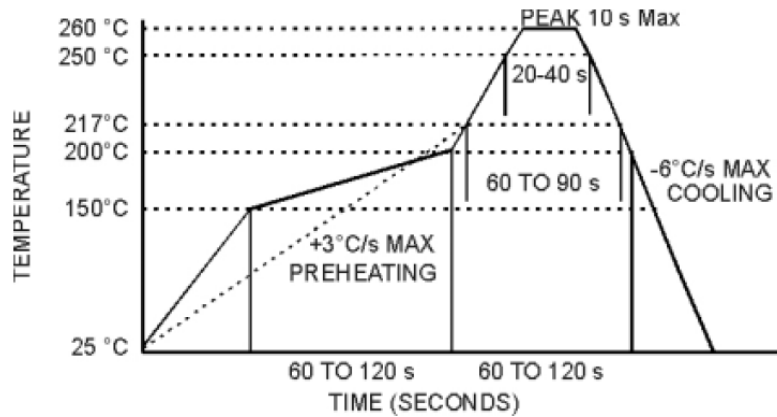
All dimensions: Inches [mm]

RECOMMENDED PAD LAYOUT

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
Enable/Disable Voltage	Ven/dis	0 to Vcc	V

Electrical Parameters (1)

Parameter	Symb	Conditions, Note	MIN	TYP	MAX	Unit	
Nominal Frequency	Fo		200		1,000	MHz	
Supply Voltage	Vcc	Code 0 Code A	4.75 3.135	5.0 3.3	5.25 3.465	V	
Supply current	Icc			60	80	mA	
Output Logic Type				PECL/ LVPECL			
Load		Output to Vcc-2V, or Thevenin Equivalent		50		Ohm	
Output Levels	Voh Vol	overall	Vcc-1.025		Vcc-1.620	V	
Duty Cycle (Symmetry)		At 50% of output voltage swing	45/55	50/50	55/45	%	
Rise/Fall Time	Tr/Tf	20 to 80, 80 to 20 %		0.5	0.7	ns	
Jitter	Integrated	J	Integrated from Phase Noise, 12 KHz to 20 MHz , RMS		0.1	0.2	ps
						1.0	ps
					0.3		ps
	Wavecrest characterized			Random period,	2.5		ps
				Accumul., pk-to-pk	25		ps
				Determin.	1		ps
Phase Noise	£(Δf)	622.080MHz APR 50 ppm or less	@ 10 Hz @100 Hz @1 KHz @10KHz @100KHz @>1MHz	-60 -90 -118 -135 -140 -145	-55 -85 -113 -130 -135 -140	dBc/Hz	
Sub-harmonics		At 622.08 MHz		-50	-46	dBc	
Frequency Stability	ΔF/F	Overall, including initial calibration, temperature, aging 10 years, shock and vibration			From ±20, see table for part number	ppm	
Enable		Pin 2 = Low, 0 to Vcc- 1.62 V or floating	Enabled			V	
Disable		Pin 2 = High, Vcc-1.025 V to Vcc	Disabled, Pin4 = Logic "1", Pin5 = Logic "0"			V	

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