

# AB-X0A5XXX-X Series

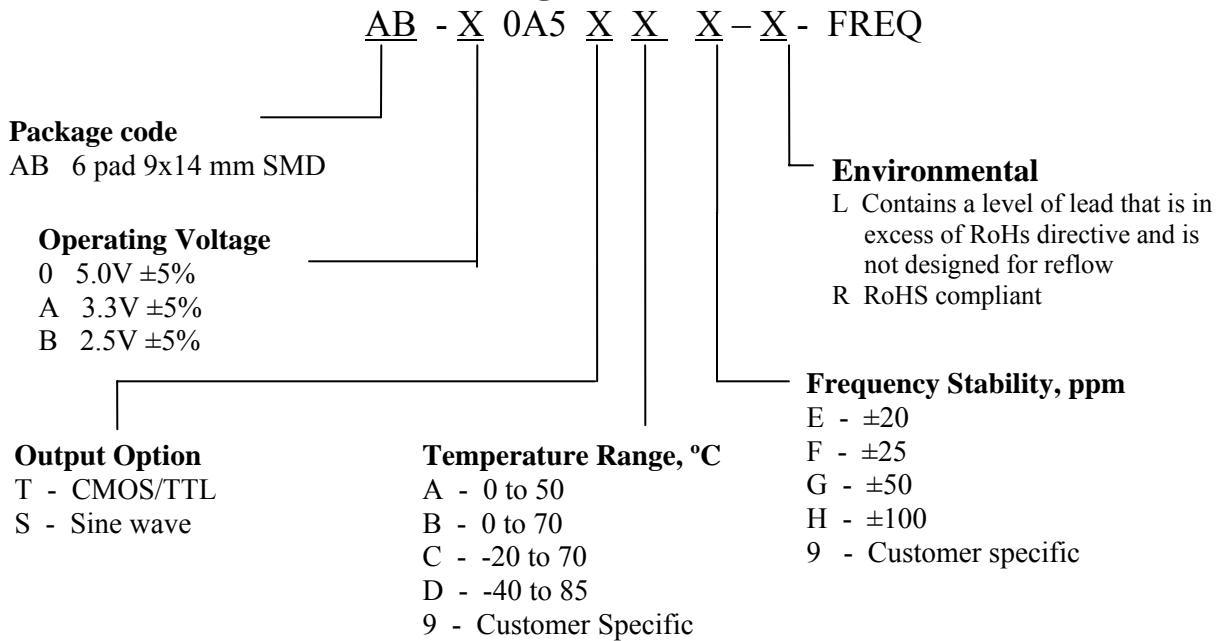
## Sine wave or CMOS/TTL XO

Rev. D

### Description

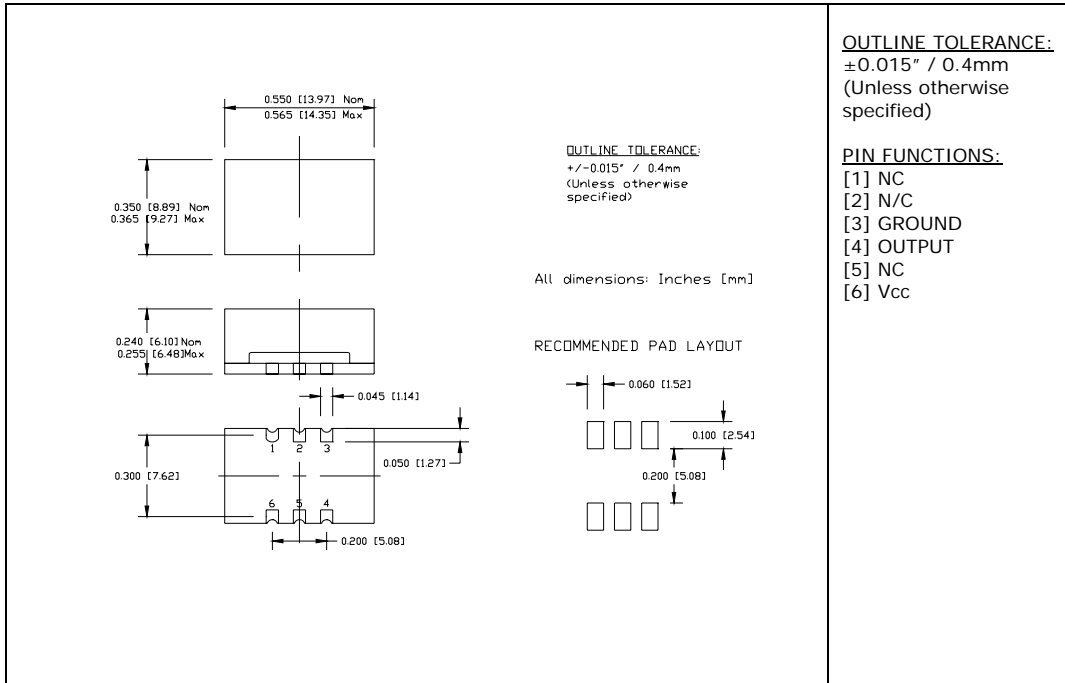
The AB-X0A5XXX-X crystal oscillator (XO) provides Sine wave or CMOS/TTL output options.. The device does not use any frequency multiplication, providing exceptionally low Phase Noise and Jitter. It's packaged in a miniature, FR-4 based 9x14 mm SMD package. COTS/Dual use.

### Creating a Part Number



**Drawing Specification**

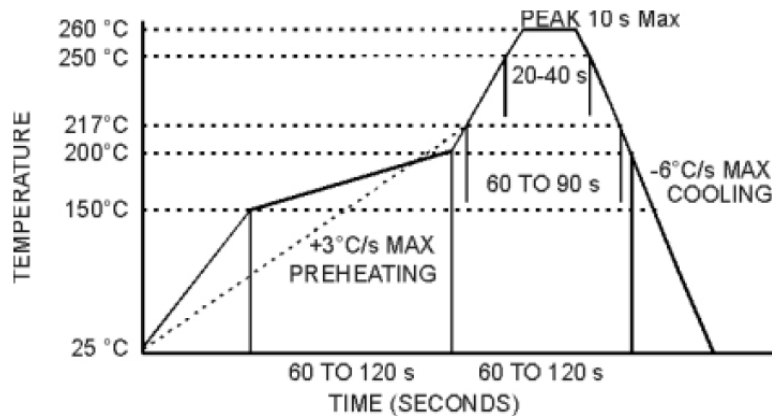
**Rev D**



**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

Rev. D

### 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 1.1 Vcc	V

### Electrical Parameters (1)

Parameter	Symb	Conditions, Note	MIN	TYP	MAX	Unit	
Nominal Frequency	Fo		12		250	MHz	
Supply Voltage	Vcc	Code 0 Code A Code B	4.75 3.135 2.375	5.0 3.3 2.5	4.25 3.465 2.625	V	
Supply current	Icc	Frequency & Vcc dependent, Consult factory			50	mA	
Output Logic Type		S version T version		Sine wave CMOS/TTL			
Load		Sine - Internally AC-coupled CMOS/TTL		50 15pf/10K ohm		Ohm	
Duty Cycle(Symmetry)		At 50% Vcc; CMOS/TTL only	45/55	50/50	55/45	%	
Rise/Fall Time	Tr,Tf	0.2Vcc to 0.8Vcc; CMOS/TTL F<70MHz 70MHz>F<125MHz 125MHz<F<250Mhz		3 2 1.5	5 3 2.5	ns	
Output power	Pout	Into 50 Ohm, Sine wave only Note: 3dBm lower for Vcc 2.5V	5	10		dBm	
Harmonics	Ph	Highest, Sine wave only			-30	dBc	
Sub-Harmonics	Ps			none			
<b>Jitter</b>	Integrated	J	Integrated from Phase Noise, 12 KHz to 20 MHz , RMS		0.1	0.15	ps
			10Hz to 80KHz,RMS			0.8	ps
			50 KHz to 80 MHz		0.2		ps
			Deterministic		0		ps
Phase Noise *	£(Δf)	@100 MHz	@ 10 Hz @100 Hz @1 KHz @10KHz @100KHz @>1MHz	-90 -120 -145 -160 -165 -165	-85 -115 -140 -158 -165 -165	dBc/Hz	
Frequency Stability	ΔF/F	Overall, including temperature, aging 10 years, shock and vibration		See Chart		ppm	

\* Please consult factory for performance at other frequencies.

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