

Rev. C

LVDS TCXO/TCVCXO

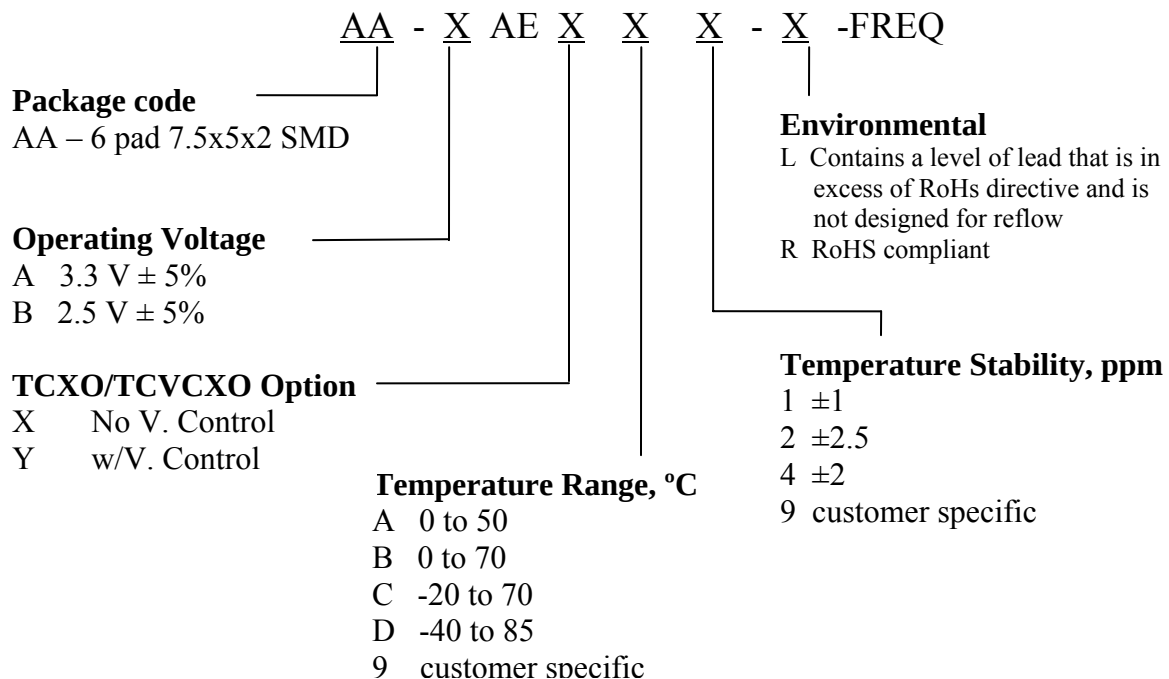
with Enable/Disable Feature

AA-XAEXXX-X Series

Description

The **AA-XAEXXX Series** of quartz crystal oscillators provide excellent temperature stability with LVDS complementary outputs and very low phase noise. The device is packaged in a miniature, low profile leadless FR4 based package with gold plated pads, which enhances compatibility with PCB material. COTS/Dual use.

Creating a Part Number



**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

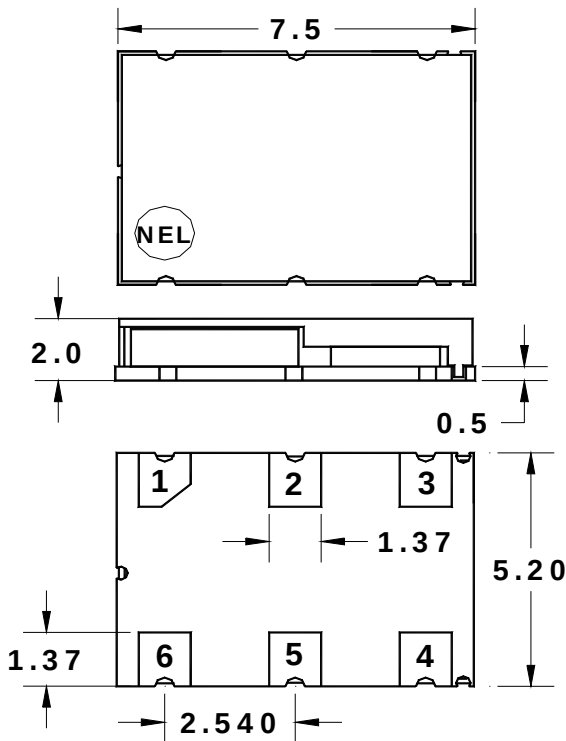
Email: nelsales@nelfc.com www.nelfc.com

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AA-XAEXX-X Series

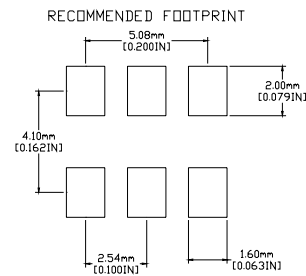
Drawing Specification



Pin Connections:

- 1 – N/C or V_c
- 2 – EN/DIS
- 3 – GND
- 4 – OUT
- 5 – Complementary OUT
- 6 – V_{cc}

Dimensions are typical in mm



Based on IPC7351

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Operating Temperature Range	T _o	-40 to +85	°C
Storage Temperature Range	T _{st}	-50 to +90	°C
Supply Voltage	V _{cc}	-0.5 to 4.5	V
Voltage Control	V _c	0 to V _{cc}	V

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AA-XAEXX-X Series**Electrical Parameters (1)**

Parameter		Symb	Conditions, Note		MIN	TYP	MAX	Unit
Nominal Frequency		Fo			10.0		120	MHz
Supply Voltage		Vcc	Code A Code B		3.135 2.375	3.3 2.5	3.465 2.625	V
Supply current		Icc				40	50	mA
Load			At receiving end between the outputs		90	100	110	Ohm
Output Levels		Vod	Differential amplitude		247	330	454	mV
			Amplitude error				50	mV
		Vof	Offset Voltage		1.125	1.25	1.375	V
			Offset voltage error				50	mV
Duty Cycle (Symmetry)			At outputs crossing, room temperature		45/55	50/50	55/45	%
Rise/Fall Time		Tr/Tf	20 to 80, 80 to 20 %			0.35	0.4	ns
Jitter	Integrated	J	Integrated from Phase Noise, 12 KHz to 20 MHz , RMS			0.2		ps
	Wavecrest characterized		Random period,			2.5 2.5		ps
			Accumul. pk-to-pk			20		ps
				Deterministic	F>40MHz		3	6
Sub-harmonics				<40 M >40 M		-50 -45		dBc
Phase Noise		£(Δf)	20 MHz	@ 10 Hz @100 Hz @1 KHz @10KHz @100KHz @>1MHz		-85 -115 -135 -140 -145 -148		dBc/Hz
Frequency stability		ΔF/F	Over Temp -30 to 80 C See chart Aging, 1 st year Aging 10 years Load Vcc Reflow Calibration as shipped			2.5	1 3.5 0.1 0.1/V 2 1	ppm
Pullability (Vc option)			0.3V to 3.0V		5			Ppm
Enable/Disable			PECL Logic “0” or floating		0		Vcc-1.6	V
Enable			PECL Logic “1”		Vcc-1		Vcc	
Disable								

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



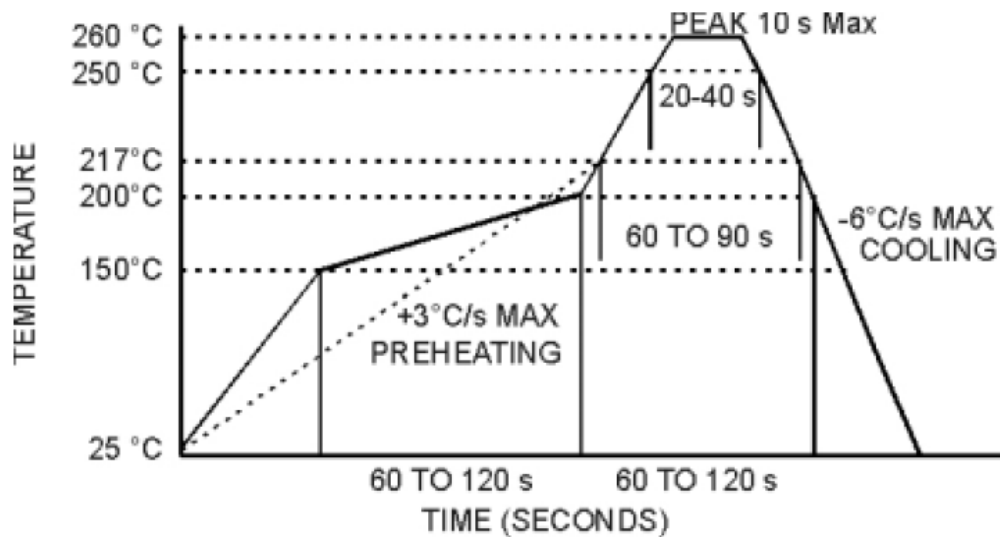
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AA-XAEXX-X Series

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
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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