

Rev. K

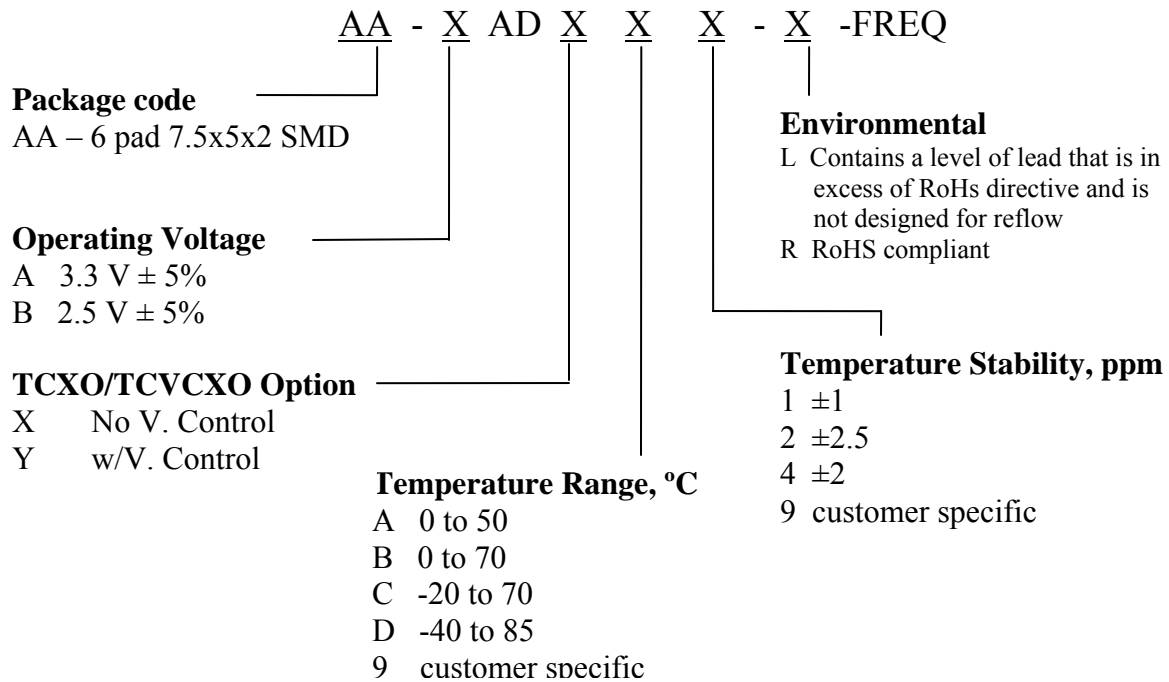
LVDS TCXO/TCVCXO

AA-XADXXX-X Series

Description

The **AA-XADXXX 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

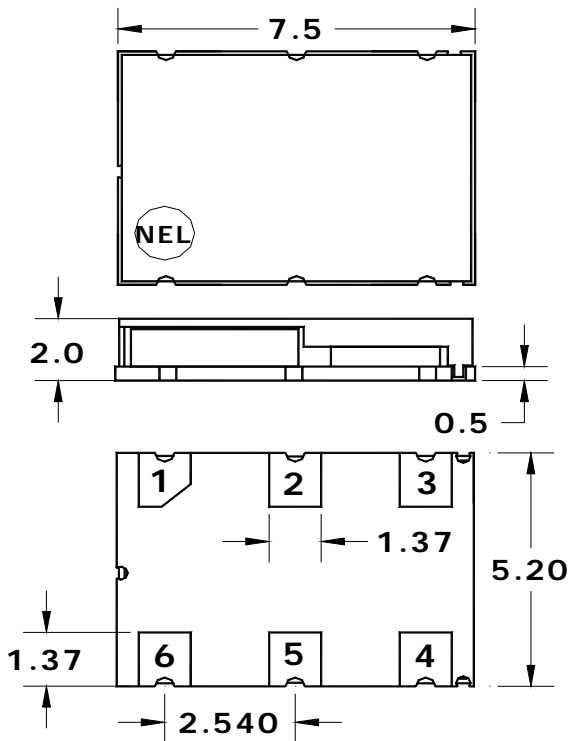
Email: nelsales@nelfc.com www.nelfc.com

Rev. K

LVDS TCXO

AA-XADXX-X Series

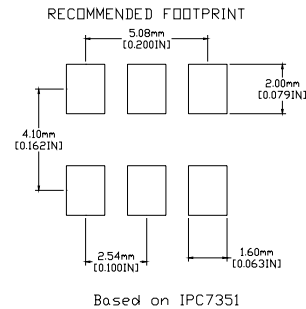
Drawing Specification



Pin Connections:

- 1 – N/C or Vc
- 2 – N/C
- 3 – GND
- 4 – OUT
- 5 – Complementary OUT
- 6 – Vcc

Dimensions are typical in mm



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 4.5	V
Voltage Control	Vc	0 to Vcc	V



**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

LVDS TCXO

AA-XADXX-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
	Accumul. pk-to-pk		20				ps
	Deterministic	F>40MHz		3	6		ps
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

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

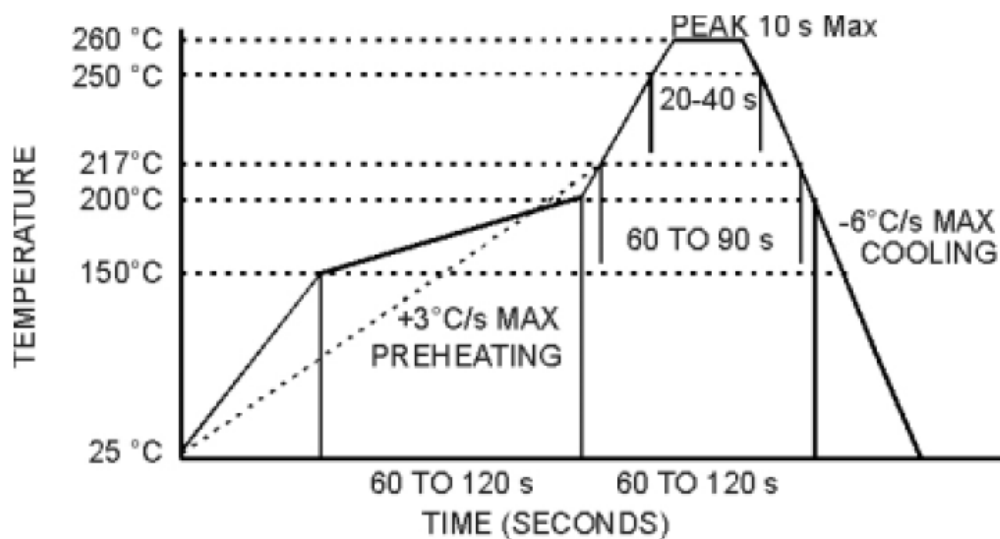


LVDS TCXO AA-XADXX-X Series

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

