

AA-X53AXXX Series

LVC MOS XO

Rev. C

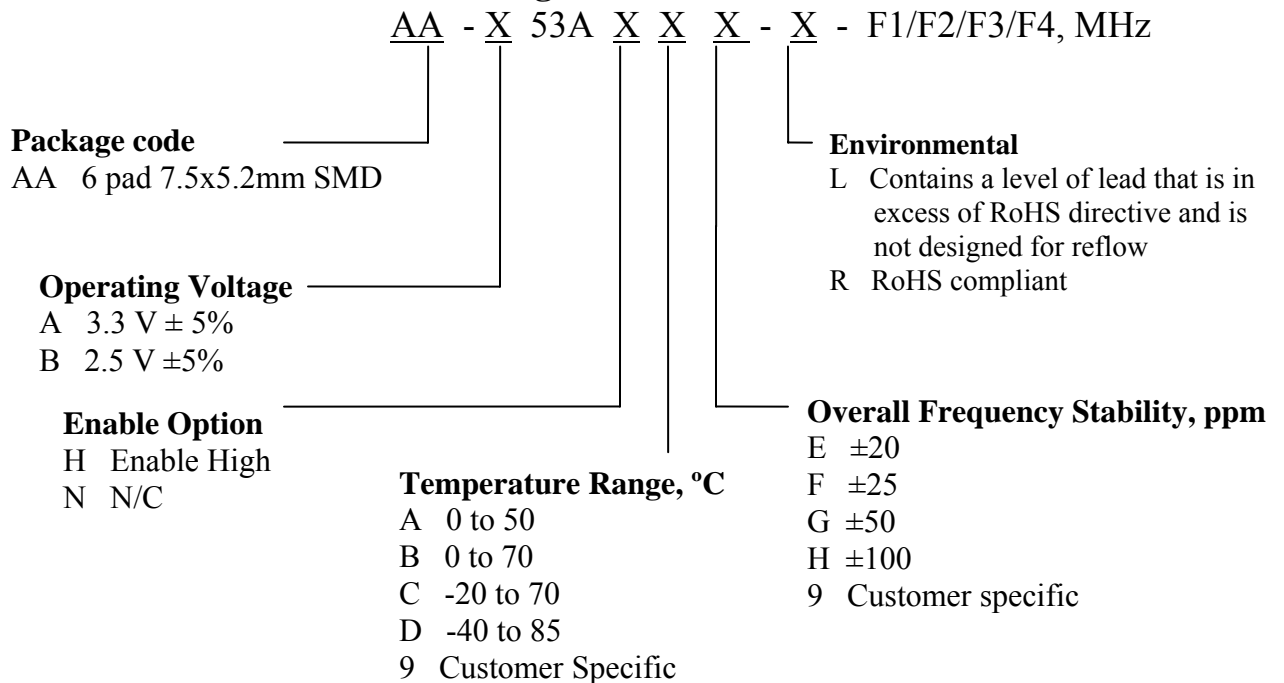
Description

The AA-X53AXXX Series of crystal oscillators (XO) provides customer selectable four frequency LVC MOS output in wide frequency range up to 250 MHz. The output can be disabled for test automation or combining multiple clocks. The device packaged in a miniature, low profile, leadless FR-4 based package with gold plated pads, which enhances compatibility with PCB material.

Applications and Features

- Customer selectable output frequency up to 250 MHz
- Fiber Channel; 10 GbE; Infiniband; Network Processors; SOHO Routing
- High Reliability – NEL HALT/HASS qualified for crystal oscillator start-up conditions
- Fast Rise and Fall times
- Tight frequency stability - ± 20 ppm overall available
- Low cost
- COTS/Dual use

Creating a Part Number



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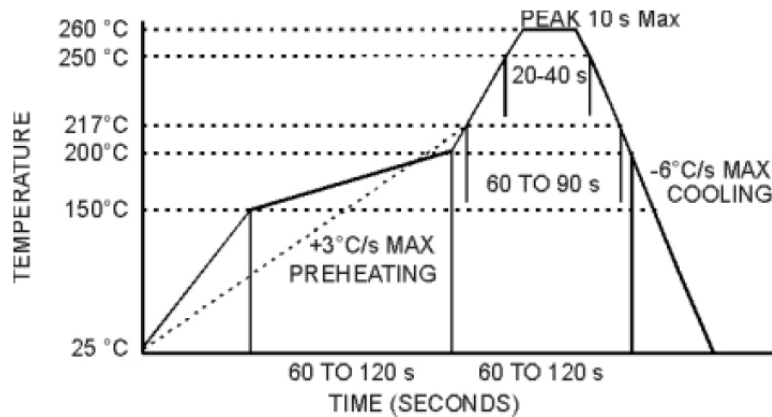
Drawing Specification

	<p>Recommended solder pads layout</p>	<p>OUTLINE TOLERANCE: Dimension are typical in mm</p> <p>PIN FUNCTIONS: [1] EN / DIS or N/C [2] Fsel1 [3] Gnd [4] OUTPUT [5] Fsel2 [6] Vcc [7] N/C</p> <p>MARKING (EXAMPLE): XX-XXXX</p>
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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



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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 3.6	V
Enable/Disable Voltage	Ven/dis	0 to Vcc	V

Electrical Parameters (1)

Parameter	Symb	Conditions, Note	MIN	TYP	MAX	Unit
Nominal Frequency	F1, F2, F3, F4		10		250	MHz
Supply Voltage	Vcc	Code A Code B	3.135 2.375	3.3 2.5	3.465 2.625	V
Supply current	Icc			50	60	mA
Output Logic Type				LVC MOS		
Load				15 pF in parallel with 10 KOhm		
Output Levels	Voh Vol	overall	0.9Vcc		0.1Vcc	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 %		2.0	3	ns
Fsel Function		Fsel1=HIGH, Fsel2=HIGH Fsel1=LOW, Fsel2=HIGH Fsel1=HIGH, Fsel2=LOW Fsel1=LOW, Fsel2=LOW		F1 F2 F3 F4		
Jitter	Integrated	J	Integrated from Phase Noise, 12 KHz to 20 MHz, RMS		1.0	ps
Phase Noise	£(Δf)	125.00 MHz	@1 KHz	-112		dBc/Hz
			@10KHz	-122		
			@100KHz	-125		
		156.25 MHz	@1MHz	-145		
			@10 MHz	-152		
			@1 KHz	-110		
		212.5 MHz	@10KHz	-118		
			@100KHz	-122		
			@1MHz	-138		
@10 MHz	-150					
@1 KHz	-107					
@10KHz	-115					
@100KHz	-118					
@1MHz	-135					
@10 MHz	-148					
Frequency Stability	ΔF/F	Overall, including initial calibration, temperature, aging 10 years, shock and vibration	See "Creating a Part Number" Not all combinations available, consult factory			ppm
Enable High Option Disabled Enabled		CMOS Logic "0" CMOS Logic "1" or floating	0 0.7Vcc		0.1 Vcc Vcc	V

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

