

AA-X56AXXX Series

LVPECL XO

Rev. C

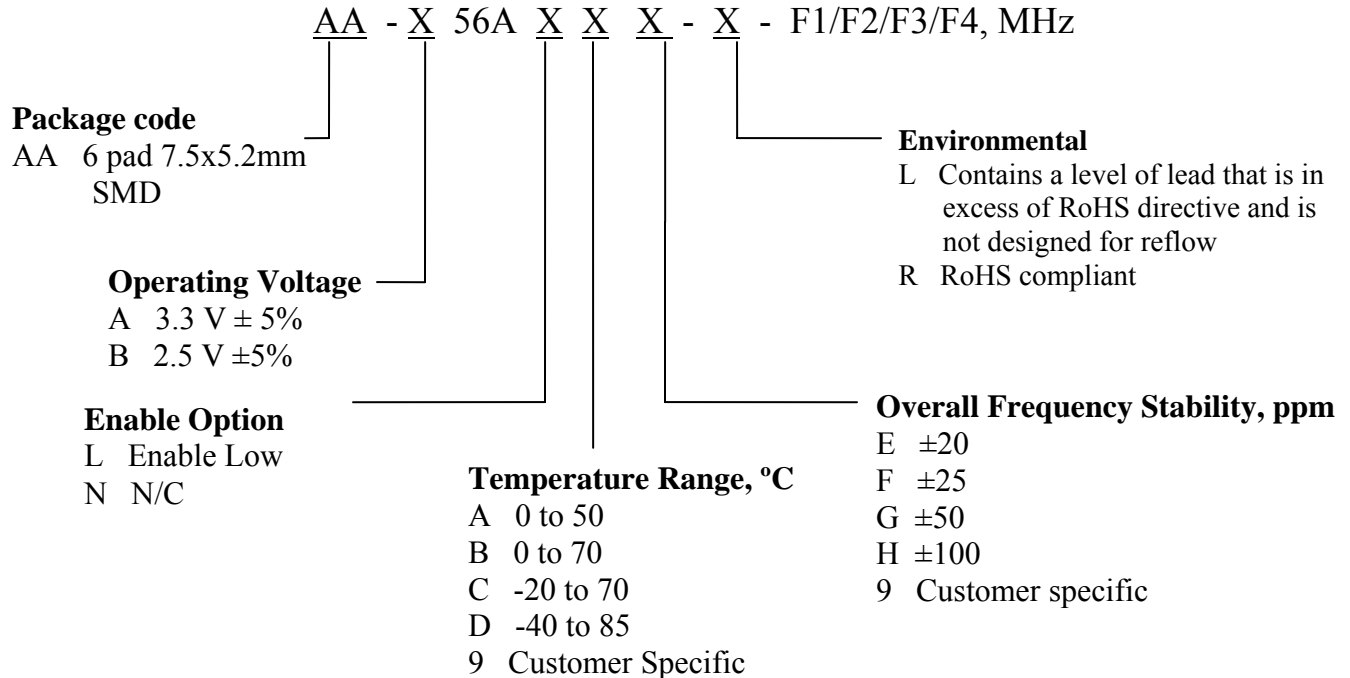
Description

The **AA-X56AXXX Series** of crystal oscillators (XO) provides customer selectable four frequency LVPECL complementary outputs in very wide frequency range up to 1.5 GHz. The outputs 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 1,500 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



AA-X56AXXX Series

Rev. C

Drawing Specification

Recommended solder pads layout

OUTLINE TOLERANCE:
Dimension are typical in mm

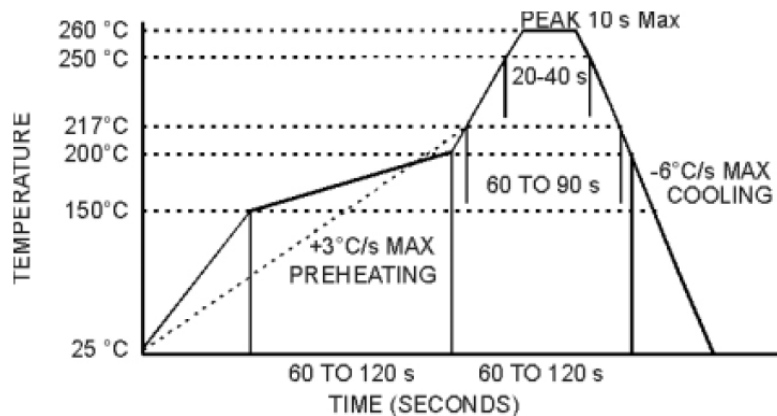
PIN FUNCTIONS:
[1] EN / DIS or N/C
[2] Fsel1
[3] Gnd
[4] OUTPUT
[5] /OUTPUT
[6] Vcc
[7] Fsel2

MARKING (EXAMPLE):
XX-XXXX

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.

AA-X56AXXX Series

Rev. C

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	Fo		10		1,500	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				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 %		0.3	0.5	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)	106.250MHz	@1 KHz @10KHz @100KHz @1MHz @10 MHz	-115 -125 -125 -130 -145		dBc/Hz
		622.08 MHz	@1 KHz @10KHz @100KHz @1MHz @10 MHz	-100 -105 -110 -125 -142		dBc/Hz
		1,000 MHz	@1 KHz @10KHz @100KHz @1MHz @10 MHz	-95 -103 -105 -125 -142		dBc/Hz
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 Low Option Disabled Enabled		PECL Logic "1" PECL Logic "0" or floating	Vcc-1 0		Vcc Vcc-1.6	V

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

