

AA-X36KXXX-X Series

PECL VCXO

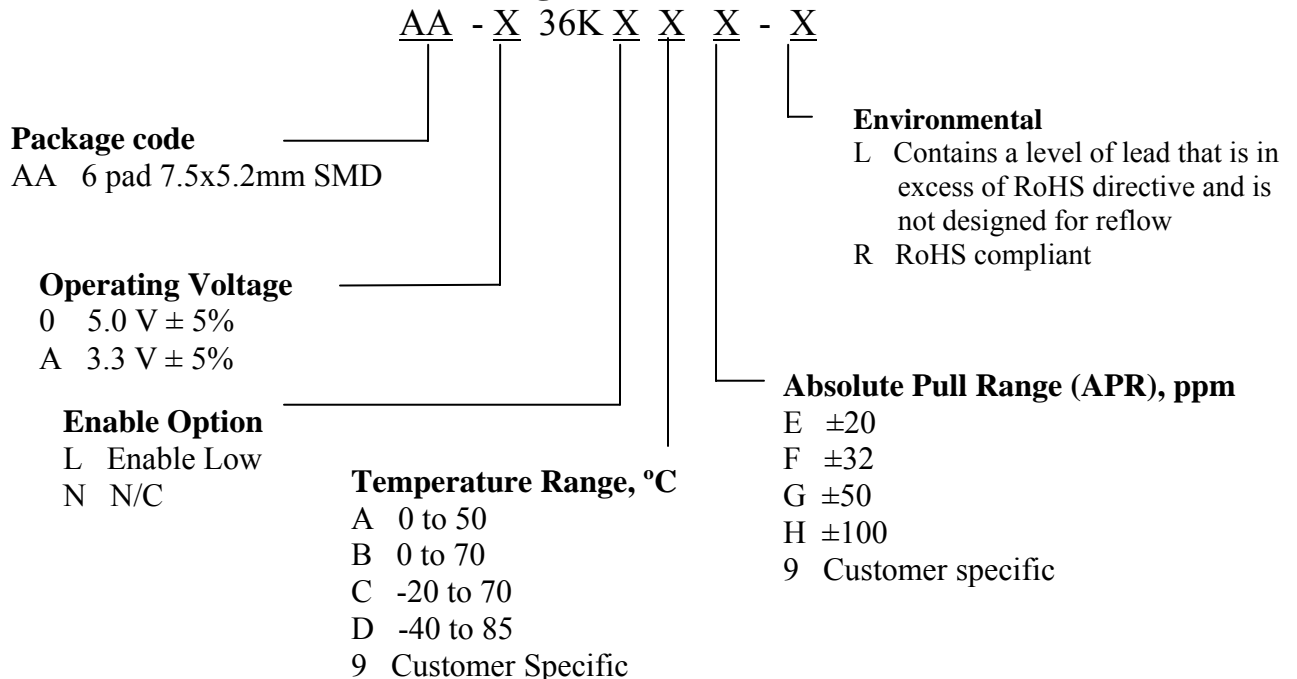
Description

The **AA-X36KXXX Series** of crystal oscillators (XO) provides low phase noise PECL/LVPECL complementary outputs. 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

- Low Phase Noise
- Wimax, 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
- Low cost

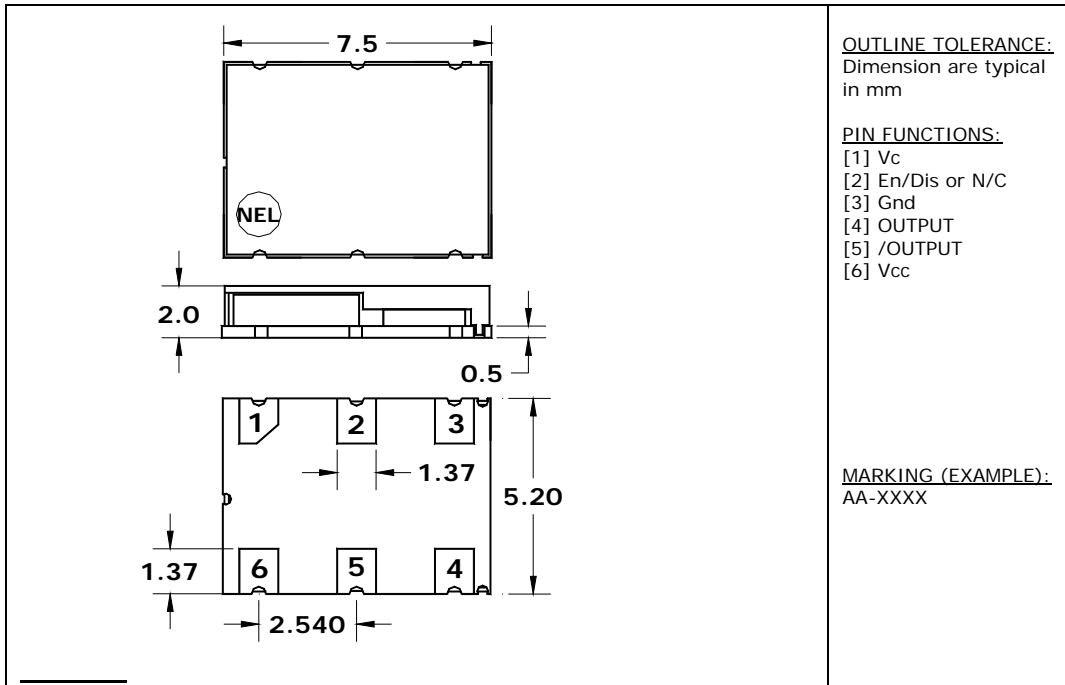
Creating a Part Number



AA-X36KXXX-X Series

Rev. C

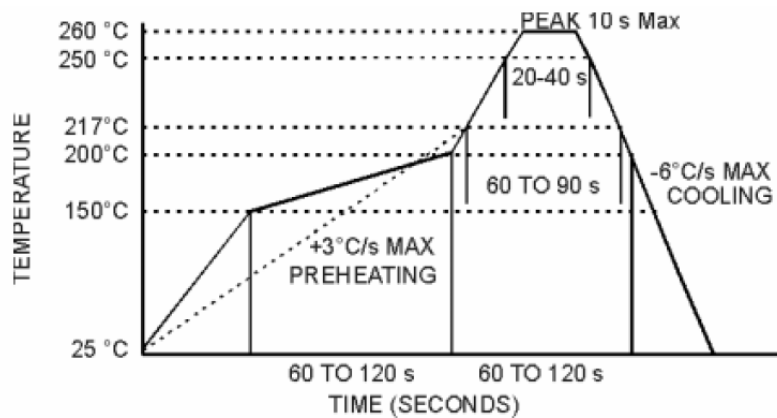
Drawing Specification



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

MAX Reflow Profile



AA-X36KXXX-X 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 5.5	V
Control Voltage	Vc	-0.5 to 5.5	
Enable/Disable Voltage	Ven/dis	0 to Vcc	V

Electrical Parameters

Parameter	Symb	Conditions, Note	MIN	TYP	MAX	Unit	
Nominal Frequency	Fo		1		260	MHz	
Supply Voltage	Vcc	Code 0 Code A	4.75 3.135	5.0 3.3	5.25 3.465	V	
Supply current	Icc			60	80	mA	
Output Logic Type				PECL/ 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 %		0.5	0.7	ns	
Jitter	Integrated	J	Integrated from Phase Noise, 12 KHz to 20 MHz , RMS 100Hz to 80KHz,RMS 50 KHz to 80 MHz		0.1	0.2	ps
						1.0	ps
					0.3		ps
	Wavecrest characterized		Random period, Accumul., pk-to-pk		2.5		ps
				17		ps	
		Determin. F>52 MHz		6		ps	
Sub-harmonics		F > 52 MHz		-50	-42	dBc	
Phase Noise	£(Δf)	155.52 MHz, @ 10 Hz @100 Hz @1 KHz @10KHz @100KHz @>1MHz		-70 -100 -125 -140 -145 -145		dBc/Hz	
Frequency Stability, usually not specified – unless necessary, APR is specified to incorporate stability	ΔF/F	Overall, including temperature, aging 10 years, shock and vibration @Vc=Vcc/2; APR 50 ppm, or less	±20	±30		ppm	
Control Voltage Range	Vc		0V		Vcc	V	
Setability	Vcs	Vc to set the F at Fo; T, Vcc, load – nominal, as shipped	0.4 Vcc	0.5 Vcc	0.6 Vcc	V	
Absolute Pull Range	APR	Over all conditions, see part # creation	20, 32, 50, 100			ppm	
Input impedance	Zin	@ Fmod < 100 KHz	50			KOhm	
Modulation Bandwidth		At Vc = Vcc/2, -3dB	20			KHz	
Enable		Pin 2 = Low, 0 to Vcc-1.62 V, or floating	Enabled			V	
Disable		Pin 2 = High, Vcc-1.025 V to Vcc	Disabled, Pin4 = Logic "1", Pin5 = Logic "0"			V	

