

**LVDS UHF VCXO
SD-A3DAXXX-X Series**

Rev. G

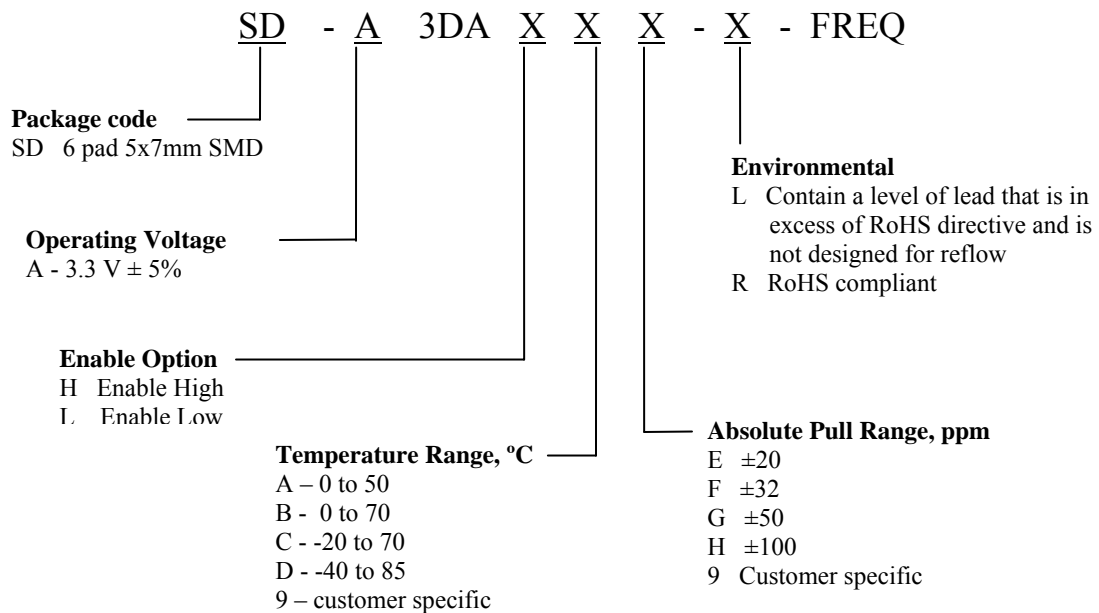
Description

The **SD-A3DAXXX Series** of voltage controlled crystal oscillators (VCXO) provides ultra high frequency with LVDS complementary output. The outputs can be Tri-stated for test automation or combining multiple clocks. The device is based on advanced PLL for higher frequencies, and packaged in a miniature, low profile leadless ceramic SMD package with 6 gold plated pads.

Applications and Features

- Wide frequency range – 38.0MHz to 640.000MHz
- Fiber Channel; 10 GbE; Infiniband; Network Processors; SOHO Routing
- High Reliability – NEL HALT/HASS qualified for crystal oscillator start-up conditions
- Low Phase Noise and Jitter
- High Shock Resistance, to 1000g
- Ultra High Frequency
- Absolute Pull Range (APR) to ± 100 ppm
- Grounded lid and internal by-pass capacitor reduce EMI
- COTS/Dual use

Creating a Part Number



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

Electrical Parameters (2)

Parameter	Symb	Conditions, Note	MIN	TYP	MAX	Unit	
Nominal Frequency	Fo		38		640	MHz	
Supply Voltage	Vcc	Code A	3.135	3.3	3.465	V	
Supply current	Icc			80	100	mA	
Output Logic Type				LVDS			
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 %		0.5	0.7	ns	
Jitter	Integrated	J Integrated from Phase Noise, 12 KHz to 20 MHz, RMS		0.4		ps	
			Wavecrest characterized				
		Random period, Accumul., pk-to-pk	155MHz 622MHz 155MJz 622MHz		3.5 6 20 40		ps ps
Phase Noise ⁽¹⁾	£(Δf)	155 MHz	@ 10 Hz @100 Hz @1 KHz @10KHz @100KHz @1MHz @>10M		-60 -90 -120 -130 -128 -144 -150		dBc/Hz
Frequency Stability	ΔF/F	Overall, including temperature, aging 10 years, shock and vibration @ Vc=Vcc/2		30			ppm
Control Voltage Range	Vc		0V		Vcc		V
Setability	Vcs	Vc to set 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	10				KOhm
Modulation Bandwidth		At Vc = Vcc/2, -3dB	10				KHz
Enable High Option							
Pin 2 Enabled		CMOS logic 1 or N/C	0.7 Vcc		Vcc		V
Pin 2 Disabled		CMOS logic 0	0		0.3 Vcc		
Enable Low Option							
Pin 2 Disabled		CMOS logic 1 or N/C	0.7 Vcc		Vcc		V
Pin 2 Enabled		CMOS logic 0	0		0.3 Vcc		

Footnote: 1) If phase noise data at a particular frequency is needed, contact factory.

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



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Electrical Connection	
Pin	Connection
1	V _{CO}
2	Enable
3	V _{EE}
4	Output
5	Output Complement
6	V _{CC}

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

MAX Reflow Profile

