

AN-X0AUXXXYY-X Series

Rev. C

HF SMD XO

Ultra-Low Phase Noise with Low G Sensitivity

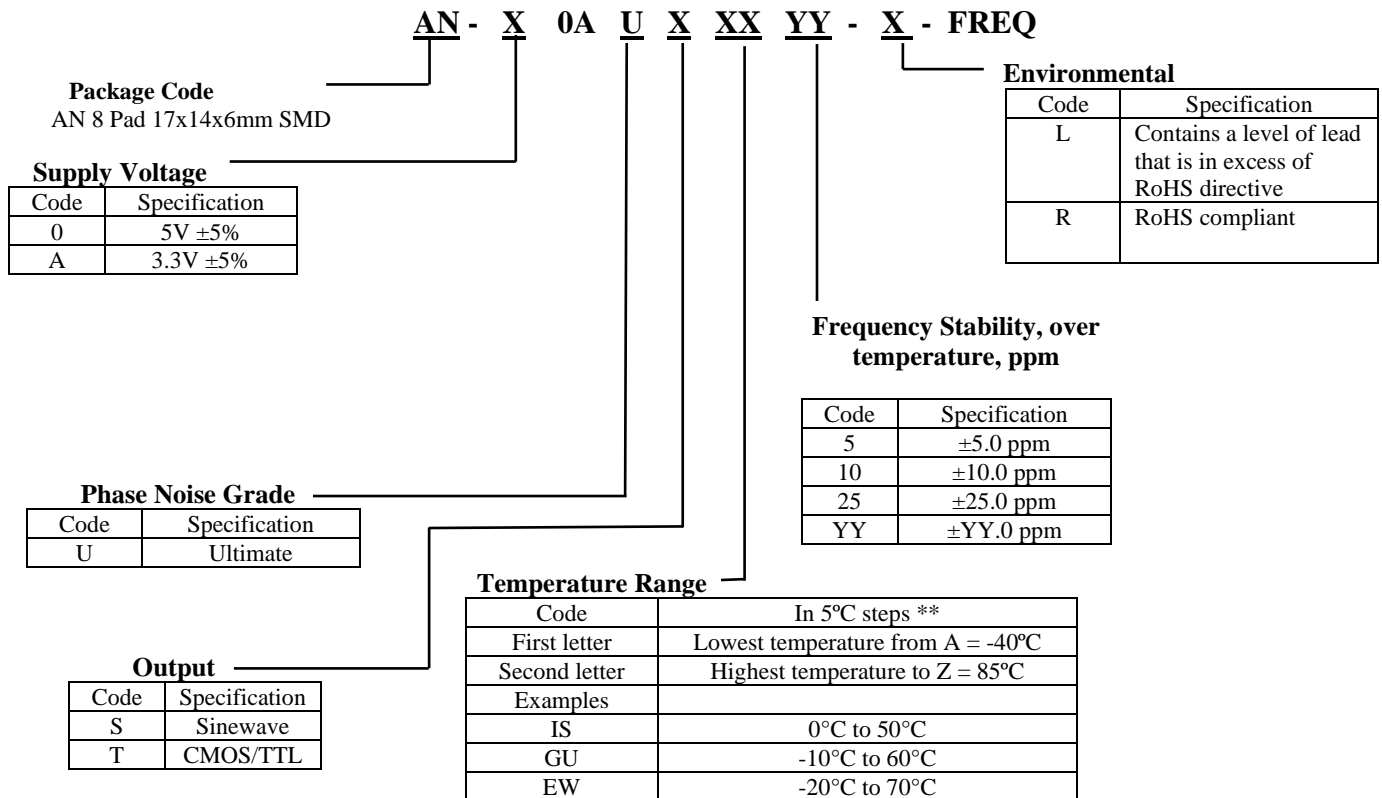
Description: The AN-X0AUXXXYY-X Series of SMD Crystal Oscillators (XO), provides ultra low phase noise and jitter with Sine-wave or CMOS output in a small surface mount FR4 based package.

Features

- Small, Low Profile SMD Package
- Ultra-Low Phase Noise
- Low G sensitivity
- No Multiplication – no sub-harmonics
- COTS/Dual use



Creating a Part Number



AN-X0AUXXXYY-X Series

Rev. C

****Temperature Code Table**

Letter	Temp °C	Letter	Temp °C	Letter	Temp °C	Letter	Temp °C	Letter	Temp °C	Letter	Temp °C
A	-40	F	-15	K	10	P	35	U	60	Z	85
B	-35	G	-10	L	15	Q	40	V	65		
C	-30	H	-5	M	20	R	45	W	70		
D	-25	I	0	N	25	S	50	X	75		
E	-20	J	5	O	30	T	55	Y	80		

Note 1) All parameters, unless otherwise specified, are at nominal conditions, i.e.: T=25°C, Nominal Vcc & Nominal Load
 2) Not all combinations of temperature stability and operating range are available

Specifications

Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
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Electrical								
Frequency Range	F	Sine-wave	10		128	MHz		
Input Voltage	Vcc		3.135 4.75	3.30 5.0	3.465 5.25	V	A 0	
Input Current	Icc	Sine			40 10	mA	@100MHz, 3.3V @10 MHz, 3.3 V	
Frequency Stability	ΔF/F	vs. Temperature vs. Vcc aging reflow		±10 ±0.1 ±1 ±3 ±4 ±2		ppm ppm/V ppm/year ppm ppm	See chart First Year 7 years 10 years	
G-sensitivity		Worst Direction		0.2 0.5		ppb/G	100 MHz 10 MHz	
Load		Sine	Internally AC-coupled 50 Ohm					
Output power (output code "S")	P	Sine-wave Into 50 Ohms	7 10	10 13		dBm	3.3V 5.0V	
Logic 1 (CMOS)	Voh		0.7Vcc			V	Output Code T	
Logic 0 (CMOS)	Vol				0.1V	V	Output Code T	
Duty Cycle			45/55		55/45	%	Output Code T	
Rise/Fall Time	Tr/Tf			2	3		Output Code T	
Spurious					-60	dBc		
Harmonics		Sine-wave		-30	-25	dBc	Output Code S	
SSB Phase Noise	£(Δf)	@10Hz		-100	-95	dBc/Hz	@100MHz, Grade U.	
		@100 Hz		-130	-125			
		@1 KHz		-155	-152			
		@10 KHz		-173	-171			
		@100 KHz		-174	-172			
		@1 Hz		-90			@10 MHz, Grade U	
		@10 Hz		-120				
		@100 Hz		-143				
		@1 KHz		-158				
		@10 KHz		-160				
		@100 KHz		-160				
ADEV		0.1 s to 1 s		1E-11			@10 MHz, Grade U	
Initial Calibration	ΔF/F	At 25°C, as shipped		±5		ppm		

AN-X0AUXXXYY-X Series

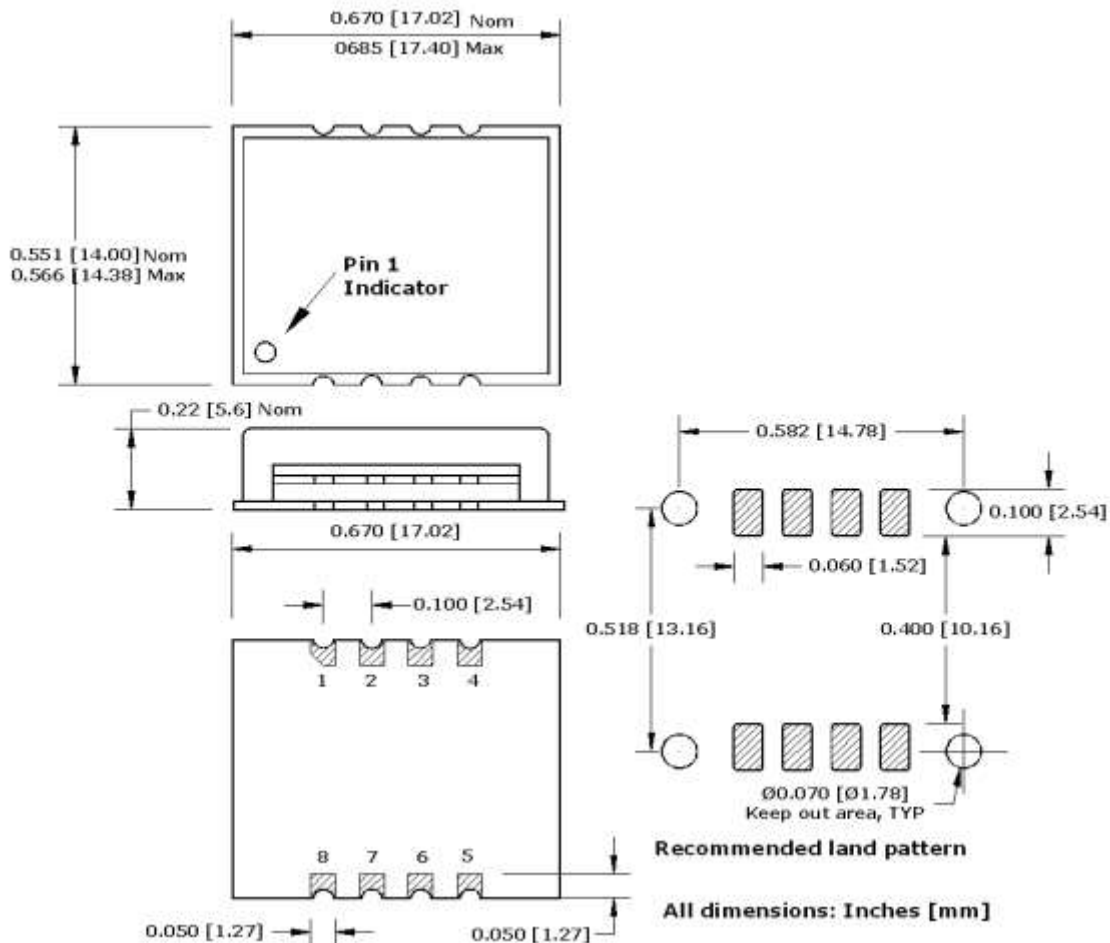
Rev. C

Absolute Maximum Ratings

Input Break Down Voltage	V _{cc}		-0.5		5.5	V	
Storage temper.	T _s		-55		105	°C	
Control Voltage	V _c		-1		4	V	

Environmental and Mechanical

Operating temp. range	-20°C to 70°C MAX, for wider range contact factory, see table to specify.
Mechanical Shock	Per MIL-STD-202, Method 213, Cond. E
Thermal Shock	Per MIL-STD-883, Method 1011, Cond. A
Vibration	Per MIL-STD-883, Method 2007, Cond. A
Soldering Conditions	See MAX reflow profile; The device may be reflowed once. Reflowing upside down is not allowed. NO CLEAN assembly is recommended.
Hermetic Seal	Leak rate less than 1x10 ⁻⁸ atm.cc/s of helium (crystal only)



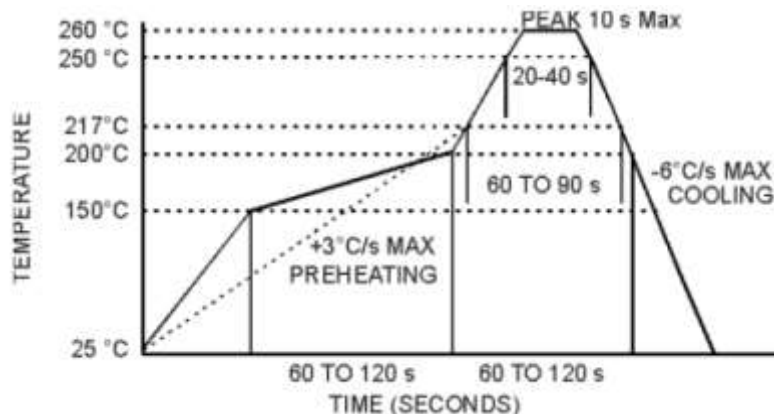
Electrical Connections

Pin out	Pin 1=V _{cc} ; Pin 2, Pin 3, Pin 4, Pin 8 = GND; Pin 5=Output; Pin 6, Pin 7 = Do Not Connect
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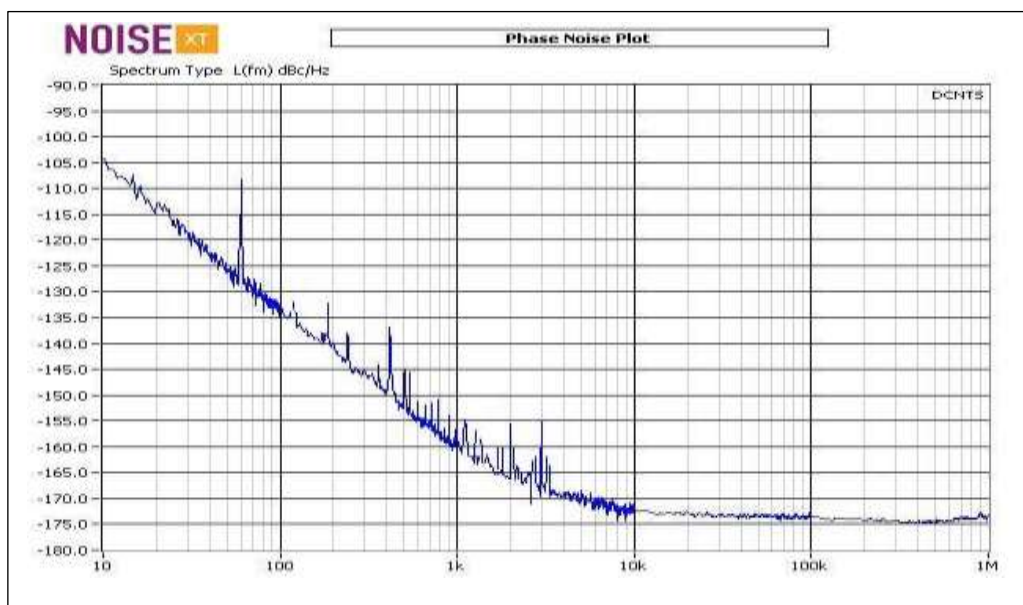
Rev: C

MAX solder reflow profile



**The device may be reflowed once. Reflowing upside down is not allowed. NO CLEAN assembly is recommended.

100 MHz example



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Rev: C

12 MHz example

