

Specification	AXIS10LN	Rev.: 5	Date: 2022-04-14
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**Oscillator type: Low Phase Noise SMD VCXO with HCMOS Output
in 14x9 mm package (CO27)**

Parameter	min.	typ.	max.	Unit	Condition
Frequency range	10		165	MHz	
Frequency stability					
Initial tolerance			±5	ppm	
vs. operating temperature range	±5 to ±20 See tables 1 & 2			ppm	Option 2 & 3
vs. supply voltage variation			±1	ppm	V _s ±5%
vs. load change			±1	ppm	Load ±5%
Long term (aging) 1 st year			±1	ppm	@ +40°C
Frequency adjustment range					
Electronic Frequency Control (EFC)	±40 ±30 ±20			ppm ppm ppm	10 MHz ~ 100 MHz 100 MHz ~ 125 MHz 125 MHz ~ 165 MHz
EFC voltage V _c	0 0		3.3 5.0	V V	Option 1 = "33" Option 1 = "50"
EFC slope (Δf / ΔV _c)	Positive				
EFC non-linearity		±5	±10	%	
EFC input impedance	100			kΩ	
RF output					
Signal waveform	HCMOS				
Load	15			pF	
Rise & decay time			5	ns	
Symmetry (duty cycle)	40		60	%	@ V _s /2
Start-up time			4	ms	
Phase noise @ 100 MHz (Note 2)		-85 -115 -145 -160 -165		dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz	@ 10 Hz @ 100 Hz @ 1 kHz @ 10 kHz @ ≥100 kHz
Supply voltage V_s	3.15 4.75	3.3 5.0	3.45 5.25	V V	Option 1 = "33" Option 1 = "50"
Current consumption (Note 3)			30	mA	
Enclosure (see drawing)	14.4x9.5x6.0 max.			mm	IEC 61837 CO 27
Weight			2	g	
Packing	Tape & Reel				IEC 60286-3

Notes:

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Please consult factory for phase noise of other frequencies

Absolute Maximum Ratings

Parameter	min.	max.	Unit	Condition
Supply Voltage V _s	-0.5	V _s + 10%	V	V _s to GND
Control Voltage V _c	-0.5	15	V	V _c to GND
Storage Temperature	-55	+105	°C	

Frequency stability vs. temperature

Option 2	Stability [ppm]
5	±5
10	±10
15	±15
20	±20

Table 1

Lower Temperature		Upper Temperature	
Option 3	T [°C]	Option 3	T [°C]
0	0	A	+50
1	-10	B	+60
2	-20	C	+70
3	-30	D	+75
4	-40	E	+80
		F	+85

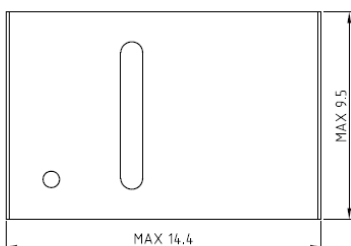
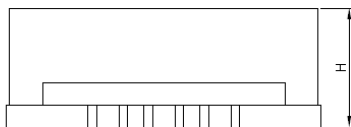
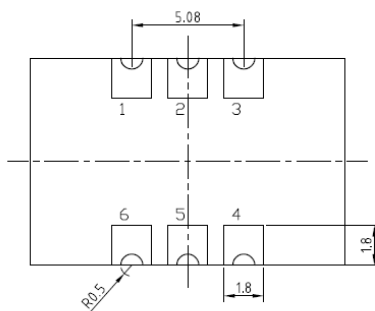
Table 2

Ordering Code

Model	Option 1 [Supply Voltage]	Option 2 [Stability]	Option 3 [Temperature range]	Revision	Frequency [MHz]
AXIS10LN	"33" or "50"	Table 1	Table 2	Rev.5	100.000

Example: AXIS10LN-50-25-2C_Rev.5 – 100.000 MHz

Enclosure drawing



Pin connections

Pin #	Symbol	Function
1	V _c	Control Voltage (EFC)
2*	N.C.	No Connection
3	GND	Ground
4	RF OUT	RF Output
5*	N.C.	No Connection
6	V _s	Supply Voltage

Pins #2 and #5 may not be present

Handling and Testing

Parameter	Procedure		Source
Handling and Testing	Application Note AXAN-011		www.axtal.com
Processing	Application Note AXAN-012		www.axtal.com
Parameter	Procedure		Condition
Electrostatic discharge (ESD)			
THD devices	IEC60749-26	HBM	2000 V
SMD devices	IEC60749-27	MM	200 V
Washable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
RoHS compliant	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

Environmental conditions

Test	IEC 60068 Part ...	IEC 60679-1 Clause	MIL-STD-202G Method	MIL-STD-810F Method	MIL-PRF-55310D Clause	Test conditions (IEC)
Sealing tests (if applicable)	2-17	5.6.2	112E		3.6.1.2	Gross leak: Test Qc, Fine leak: Test Qk
Solderability	2-20	5.6.3	208H		3.6.52	Test Ta Method 1
Resistance to soldering heat	2-58		210F		3.6.48	Test Td ₁ Method 2 Test Td ₂ Method 2
Shock	2-27	5.6.8	213B	516.4	3.6.40	Test Ea, 3 x per axes 100g, 6 ms half-sine pulse
Vibration, sinusoidal	2-6	5.6.7.1	201A 204D	516.4-4	3.6.38.1 3.6.38.2	Test Fc, 30 min per axes, 10 Hz - 55 Hz 0,75mm; 55 Hz - 2 kHz, 10g
Vibration, random	2-64	5.6.7.3	214A	514.5	3.6.38.3 3.6.38.4	Test Fdb
Endurance tests - ageing - extended aging		5.7.1 5.7.2	108A		4.8.35	30 days @ 85°C, OCXO @25°C 1000h, 2000h, 8000h @85°C

Other environmental conditions on request

Data sheet is for information purposes only and may be subject to modifications or may be discontinued without notice.

Revision History

Rev.	Drawing	Date [dd.mm.yyyy]	Remarks	Author	Checked
2	D1	01.10.2012	Editorial changes	BN	BN
3	D0	05.04.2014	Major specification update	HH	HH
4	D0	31.03.2020	Phase noise and current consumption updated, editorial changes	HH	RZ
5	D0	30.03.2022	Various updates, new package drawing, editorial changes	HH	HH
5	D1	14.04.2022	Pin connection table corrected	HH	HH