

<b>Specification</b>	<b>AXE10LN</b>	Rev.: 3	Date: 2022-03-30
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**Oscillator type: Low Phase Noise SMD SPXO with HCMOS Output  
in 14x9 mm package (CO27)**

Parameter	min.	typ.	max.	Unit	Condition
<b>Frequency range</b>	10		165	MHz	
<b>Frequency stability</b>					
Initial tolerance			±5	ppm	
vs. operating temperature range	±5 to ±20 See tables 1 & 2			ppm	Option 2 & 3
vs. supply voltage variation			±0.5	ppm	V <sub>s</sub> ±5%
vs. load change			±0.5	ppm	Load ±5%
Long term (aging) 1 <sup>st</sup> year			±1	ppm	@ +40°C
<b>Frequency adjustment range</b>					
Electronic Frequency Control (EFC)		N.A.		ppm	on request
<b>RF output</b>					
Signal waveform	HCMOS				
Load	15			pF	
Rise & decay time			5	ns	
Symmetry (duty cycle)	40		60	%	@ V <sub>s</sub> /2
Start-up time			4	ms	
Phase noise @ 100 MHz (Note 2)		-90 -120 -150 -155 -160		dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz	@ 10 Hz @ 100 Hz @ 1 kHz @ 10 kHz @ ≥100 kHz
<b>Supply voltage V<sub>s</sub></b>	3.15 4.75	3.3 5.0	3.45 5.25	V V	Option 1 = „33“ Option 1 = „50“
<b>Current consumption (steady state)</b>			30	mA	
<b>Enclosure (see drawing)</b>	14.4x9.5x6.0 max.			mm	IEC 61837 CO 27
<b>Weight</b>			2	g	
<b>Packing</b>	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 <sub>s</sub>	-0.5	V <sub>s</sub> + 10%	V	V <sub>s</sub> 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

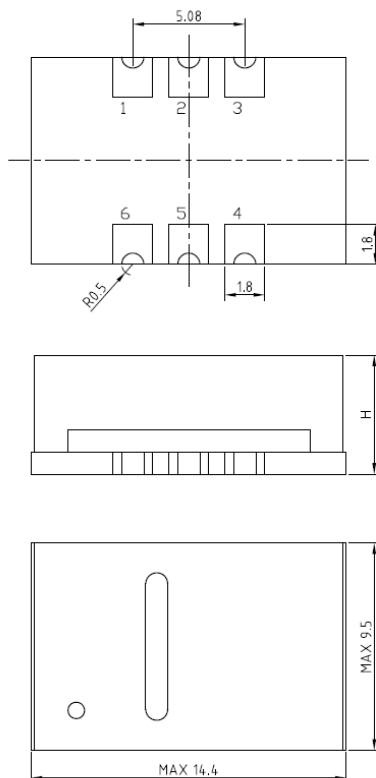
Table 2

## Ordering Code

Model	Option 1 [Supply Voltage]	Option 2 [Stability]	Option 3 [Temperature range]	Revision	Frequency [MHz]
AXE10LN	"33" or "50"	Table 1	Table 2	Rev.3	100.000

Example: AXE10LN-50-25-2C\_Rev.3 – 100.000 MHz

## Enclosure drawing



## Pin connections

Pin #	Symbol	Function
1	N.C.	No Connection
2*	N.C.	No Connection
3	GND	Ground
4	RF OUT	RF Output
5*	N.C.	No Connection
6	V <sub>s</sub>	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 <sub>1</sub> Method 2 Test Td <sub>2</sub> 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
1	D0	01.10.2012	First issue	BN	BN
2	D0	04.04.2014	Stability parameters updated, 100 MHz phase noise added, environmental conditions updated, editorial changes	HH	HH
3	D0	30.03.2022	Various updates, new package drawing, temperature stability options added, editorial changes	HH	HH