

<b>Specification</b>	<b>AXIOM35LN</b>	Rev.: 4	Date: 2014-04-18
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**Oscillator type: Low Phase Noise Miniature OCXO with Sine Wave Output**

Parameter	min.	typ.	max.	Unit	Condition
<b>Frequency range</b>	10		20	MHz	
<b>Standard frequencies</b>	10.000			MHz	
<b>Frequency stability</b>				ppm	
Initial tolerance @+25°C		±100	±200	ppb	V <sub>c</sub> @ VREF/2
vs. operating temperature range	Option 2 & 3 See tables 1 & 2				steady state
vs. supply voltage variation (pushing)			±5	ppb	V <sub>s</sub> ±5%
vs. load change (pulling)			±5	ppb	R <sub>L</sub> ±10%
Long term (aging) per day		±0.5	±1	ppb	after 30 days operation
Long term (aging) 1 <sup>st</sup> year			±50	ppb	after 30 days operation
<b>Frequency adjustment range</b>					
Electronic Frequency Control (EFC)	±0.5	±0.8		ppm	
EFC voltage V <sub>c</sub>	0	VREF/2	VREF	V	
EFC slope ( $\Delta f / \Delta V_c$ )	Positive				
EFC input impedance	100			kΩ	
<b>RF output</b>					
Signal waveform	Sine wave				
Load R <sub>L</sub>	50			Ω	±10%
Output level	+5	+8		dBm	
Harmonics			-25	dBc	
Phase noise @ 10 MHz (Note 2)		-100	-130 -145 -150 -150	dBc/Hz dBc/Hz dBc/Hz dBc/Hz	@ 1 Hz @ 10 Hz @ 100 Hz @ 1 kHz @ 10 kHz ~ 100 kHz
Warm-up time			3	min	$\Delta f_{\text{final}}/f_0 < \pm 0.1$ ppm
<b>Short term stability (Allan deviation)</b>		$5 \cdot 10^{-12}$			$\tau = 1$ s
<b>Reference voltage VREF output (Note 3)</b>		4.0 5.0		V V	Option 1 = "50" Option 1 = "12"
<b>Supply voltage V<sub>s</sub></b>	4.75 11.4	5.0 12	5.25 12.6	V V	Option 1 = "50" Option 1 = "12"
<b>Current consumption (steady state) @ +25°C (Note 4)</b>			200 100	mA mA	Option 1 = "50" Option 1 = "12"
<b>Current consumption (warm-up) (Note 4)</b>			600 300	mA mA	Option 1 = "50" Option 1 = "12"
<b>Enclosure (see drawing) (LxWxH)</b>	20.5x20.5x12 max.			mm	IEC 60679-3 CO 41
<b>Weight</b>			10	g	
<b>Packing</b>	Palette				

**Notes:**

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Better phase noise values on request
3. Other reference voltages on request
4. May be higher for wide operating temperature range

### 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	+125	°C	

### Frequency stability vs. temperature

Option 2	Stability [ppb]
05	±5
10	±10
25	±25
50	±50
100	±100
200	±200

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
5	-55	F	+85

Table 2

Standard: "1B" = -10°C to +60°C

Temperature range [°C]	Frequency stability [Option 2]					
	05	10	25	50	100	200
0 ~ +50	X	X	X	X	X	X
-10 ~ +60	X	X	X	X	X	X
-20 ~ +70	X	X	X	X	X	X
-30 ~ +70	O	X	X	X	X	X
-40 ~ +75	O	O	X	X	X	X
-40 ~ +85	-	O	X	X	X	X
-55 ~ +85	-	-	O	X	X	X

Table 3 "Availability"

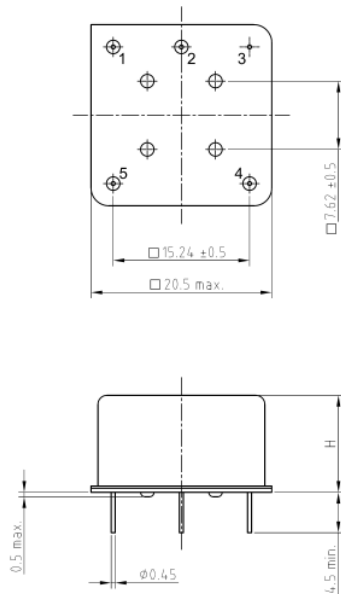
X = available, O = available on request, - not available

### Ordering Code

Model	Option 1 [Supply Voltage]	Option 2 [Stability]	Option 3 [Temperature range]	Revision	Frequency [MHz]
AXIOM35LN	12, 50	Table 1	Table 2	Rev.4	10.000

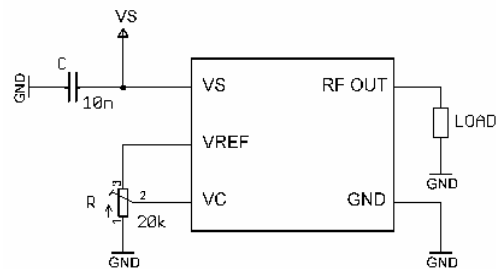
Example: AXIOM35LN-12-10-1B\_Rev.4 – 10.000 MHz

## Enclosure drawing



## Pin connections

Pin #	Symbol	Function
1	V <sub>S</sub>	Supply Voltage
2	RF OUT	RF Output
3	GND	Ground
4	V <sub>C</sub>	Control Voltage (EFC)
5	VREF	Reference Voltage



\* See Application Note AXAN-011

## 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 checked="" type="checkbox"/> Yes <input 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 Resistance to soldering heat	2-20 2-58	5.6.3	208H 210F		3.6.52 3.6.48	Test Ta Method 1 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
3	D1	01.10.2012	Editorial changes	BN	BN
4	D0	18.04.2014	Various parameters updated, environmental conditions updated, editorial changes	HH	HH