Specification	AXIOM35LN	Rev.: 4	Date: 2014-04-18

Oscillator type: Low Phase Noise Miniature OCXO with Sine Wave Output

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

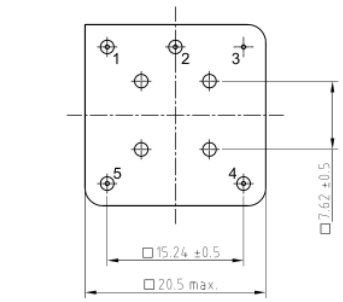
Table 3 "Availability" **X = available, O = available on request, - not available**

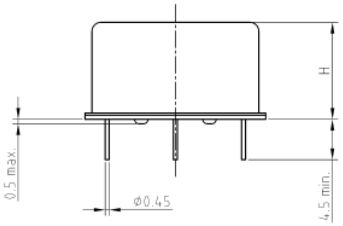
Ordering Code

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

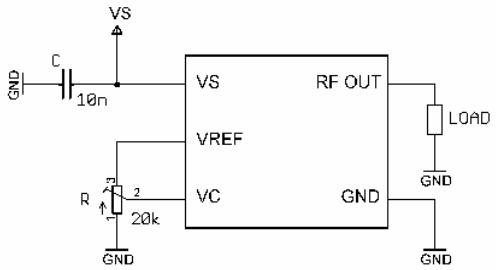
Enclosure drawing





Pin connections

Pin #	Symbol	Function
1	V_S	Supply Voltage
2	RF OUT	RF Output
3	GND	Ground
4	V_C	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	✖ Yes	☐ No	
RoHS- Compliant	✖ Yes	☐ 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_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
3	D1	01.10.2012	Editorial changes	BN	BN
4	D0	18.04.2014	Various parameters updated, environmental conditions updated, editorial changes	HH	HH