

Specification	AXIOM15LN	Rev.: 1	Date: 2016-10-31
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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) 1 st 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	@ 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)		$5 \cdot 10^{-12}$			$\tau = 1$ 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) (Note 5)	25.6x22.2x14 max.			mm	IEC 60679-3 CO 28
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
5. Lower height H on request

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"

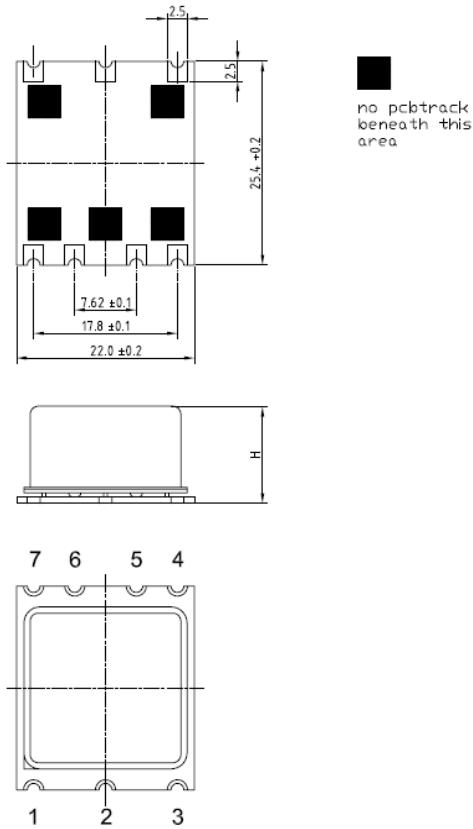
X = available, O = available on request, - not available

Ordering Code

Model	Option 1 [Supply Voltage]	Option 2 [Stability]	Option 3 [Temperature range]	Revision	Frequency [MHz]
AXIOM15LN	12, 50	Table 1	Table 2	Rev.1	10.000

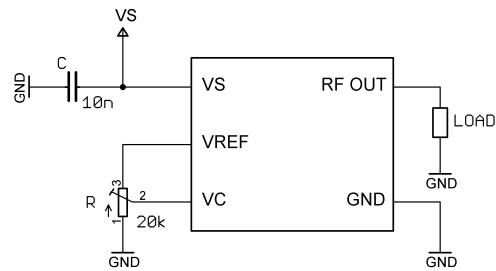
Example: AXIOM15LN-12-10-1B_Rev.1 – 10.000 MHz

Enclosure drawing



Pin connections

Pin #	Symbol	Function
1	V _C	Control Voltage (EFC)
2	VREF	Reference Voltage
3	V _S	Supply Voltage
4	RF OUT	RF Output
5	N.C.	No Connection
6	N.C.	No Connection
7	GND	Ground



* 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 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
1	D0	31.10.2016	First issue	HH	HH