Specification	AXIOM55LN	Rev.: 1	Date: 2015-01-19

Oscillator type: Low Phase Noise OCXO with Sine Wave Output equivalent to Oscilloquartz Model OCXO 8789

Parameter	min.	typ.	max.	Unit	Condition
Frequency range	5		20	MHz	(Note 2)
Standard frequencies		5.000 / 10.000		MHz	(Note 2)
Frequency stability					
Initial tolerance @ +25°C			±200	ppb	V_C @ VREF/2
vs. operating temperature range		Option 1 & 2 See tables 1 & 2			steady state
vs. supply voltage variation (pushing)			±0.2	ppb	V_S ±5 %
vs. load change (pulling)			±0.2	ppb	R_L ±10 %
Long term (aging) per day (Note 3)			±0.5	ppb	after 30 days operation
Long term (aging) per year (Note 3)			±70	ppb	after 30 days operation
Frequency adjustment range					
Electronic Frequency Control (EFC)	±0.8			ppm	
EFC voltage V_C	0	VREF/2	VREF	V	
EFC slope ($\Delta f / \Delta V_C$)		Positive			
EFC nonlinearity		±5	±10	%	
EFC input impedance	100			kΩ	
RF output					
Signal waveform		Sine wave			
Load R_L		50		Ω	±10%
Output level	+6	+8	+10	dBm	
Harmonics			-30	dBc	
Spurious			-75	dBc	f_{nom} ±1 MHz
Warm-up time @ +25°C		3	5	min	$\Delta f_{final}/f_0$ < ±0.1 ppm
Phase noise max.	5.000		10.000	MHz	
	-105		-100	dBc/Hz	@ 1 Hz
	-135		-130	dBc/Hz	@ 10 Hz
	-150		-150	dBc/Hz	@ 100 Hz
	-157		-157	dBc/Hz	@ 1 kHz
	-162		-162	dBc/Hz	@ 10 kHz
	-162		-162	dBc/Hz	@ 100 kHz
Short term stability (Allan deviation)		$1 \cdot 10^{-12}$			τ = 1 s
Reference voltage VREF output		10.0		V	
Supply voltage V_S	11.4	12.0	12.6	V	
Current consumption (steady state)			200	mA	@ +25°C
Current consumption (warm-up)			500	mA	
Enclosure (see drawing) (LxWxH)		51.0x51.0x19.0 max.		mm	
Weight			70	g	
Packing		Palette			

Notes:

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Please consult factory for other frequencies
3. Lower aging 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	-40	+125	°C	

Frequency stability vs. temperature

Option 1	Stability [ppb]
05	±5
10	±10
25	±25
50	±50

Table 1

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

Table 2 **Standard: "1B" = -10°C to +60°C**

Ordering Code

Model	Option 1 [Stability]	Option 2 [Temperature range]	Revision	Frequency [MHz]
AXIOM55LN	Table 1	Table 2	Rev.1	10.000

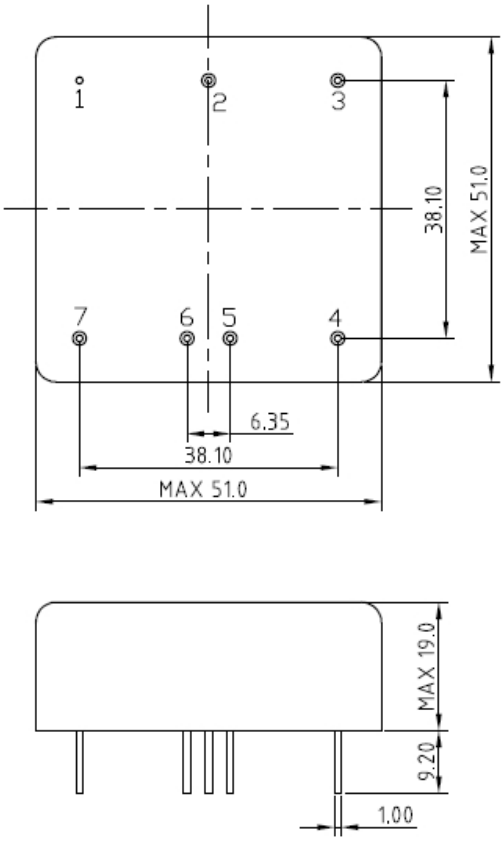
Example: AXIOM55LN-10-1B_Rev.1 – 10.000 MHz

Handling and Testing

Parameter	Procedure	Source
Handling and Testing	Application Note AXAN-011	www.axtal.com
Processing	Application Note AXAN-012	www.axtal.com

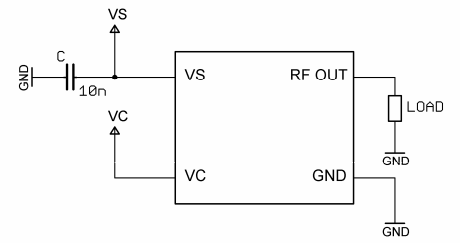
Parameter	Procedure		Condition
Electrostatic discharge (ESD)			
THD devices	IEC60749-26	HBM	2000 V
SMD devices	IEC60749-27	MM	200 V
Washable	✖ Yes ☐ No		
RoHS- Compliant	✖ Yes ☐ No		

Enclosure drawing



Pin connections:

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



* See Application Note AXAN-011

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

Revision History

Rev.	Drawing	Date [dd.mm.yyyy]	Remarks	Author	Checked
1	D0	14.01.2015	First issue	HH	BN
1	D1	19.01.2015	Phase noise columns changed	HH	HH