Specification	AXIOM37H-14	Rev.: 1	Date: 2015-04-22

Oscillator type: High Stability VHF Very Low Power OCXO in DIL14 package

Parameter	min.	typ.	max.	Unit	Condition
Frequency range	30		300	MHz	Frequency multiplication
Standard frequencies		100.000		MHz	
Frequency stability					
Initial tolerance @ +25°C		±100		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 ±5 %
Long term (aging) per day, after 30 days operation (Note 2)			±2 ±5	ppb ppb	< 150 MHz ≥ 150 MHz
Long term (aging) 1st year, after 30 days operation (Note 2)			±150 ±500	ppb ppb	< 150 MHz ≥ 150 MHz
Frequency adjustment range					
Electronic Frequency Control (EFC)	±0.5			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	±5%
Output level		+7	+11	dBm	
Harmonics			-25	dBc	
Sub-harmonics			-40	dBc	
Spurious			-80	dBc	
Warm-up time @ +25°C (Note 3)		60		sec	$\Delta f_{final}/f_0$ < ±0.1 ppm
Phase noise @ 100.000 MHz			-100 -125 -145 -155 -160	dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz	@ 10 Hz @ 100 Hz @ 1 kHz @ 10 kHz @ 100 kHz
G-Sensitivity			±1	ppb/g	
Short term stability (Allan deviation)		$2 \cdot 10^{-11}$			τ = 1 s
Reference voltage VREF output		2.8 4.2		V V	Option 1 = "33" Option 1 = "50"
Supply voltage V_S	3.15 4.75	3.3 5.0	3.45 5.25	V V	Option 1 = "33" Option 1 = "50"
Power consumption (steady state)		0.15	0.20	W	@ +25°C
Power consumption (warm-up)		0.70	1.00	W	
Enclosure (see drawing) (LxWxH)		20.6x15.2x10.0 max.		mm	(Note 4)
Weight			15	g	
Packing		Palette			

Notes:

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Lower aging rates on request
3. Frequency referred to f_{final} at 10 minutes after switch-on
4. Package height of 9 mm and SMD version available 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	5	V	V_C to GND
Storage Temperature	-60	+90	°C	

Frequency stability vs. temperature

Option 2	Stability [ppb]
05	±5
10	±10
20	±20
50	±50
100	±100

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 **Standard: "1B" = -10°C to +60°C**

Note: Not all combinations of stability and temperature range may be available. Please consult factory.

Ordering Code

Model	Option 1 [Supply Voltage]	Option 2 [Stability]	Option 3 [Temperature range]	Revision	Frequency [MHz]
AXIOM37H-14	33 or 50	Table 1	Table 2	Rev.1	100.000

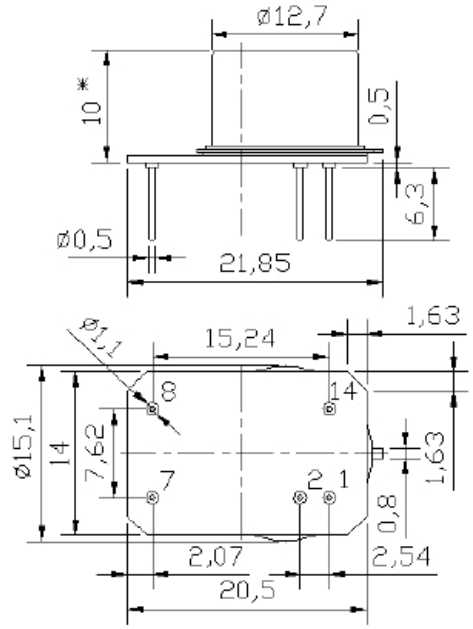
Example: AXIOM37H-14-50-05-1B_Rev.1 – 100.000 MHz

Handling and Testing

Parameter	Procedure	Source
Handling and Testing	Application Note AXAN-011	
Processing	Application Note AXAN-012	

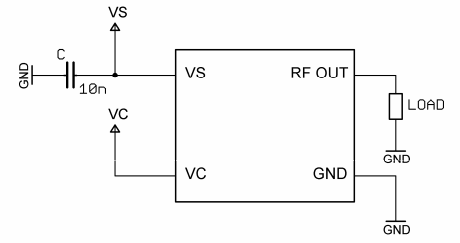
Parameter	Procedure		Condition
Electrostatic discharge (ESD)			
THD devices	IEC60749-26	HBM	2000 V
SMD devices	IEC60749-27	MM	200 V
Washable	✖ Yes ☐ No		
RoHS- Compliant	✖ Yes ☐ No		

Enclosure drawing



Pin connections:

Pin #	Symbol	Function
1	V_C	Control Voltage (EFC)
2	VREF	Reference voltage
7	GND	Ground
8	RF OUT	RF Output
14	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	22.04.2015	First issue	HH	HH