

Datasheet

AXIOM5151

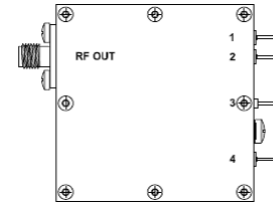
OCXO with Ultra-Low PHASE NOISE Floor of -180 dBc/Hz

Rev. 3
Date: 2014-05-08

FEATURES

- Connectorized Package, size 51 x 51 x 19 mm.
- Ultra-Low Phase Noise up to -180 dBc/Hz
- Sine wave Output level
- Standard frequencies : 100.000 / 120.000 MHz

51 x 51 x 19 mm. max.



Parameter	min.	typ.	max.	Unit	Condition
Frequency range	80		125	MHz	
Standard frequencies	100.000 / 120.000			MHz	
Frequency stability					
Initial tolerance @ 25°C			± 300	ppb	@V _C = 5.0 V
vs. operating temperature range			± 200	ppb	steady state (Note 2)
vs. supply voltage variation (pushing)		± 20		ppb	V _S ± 5%
Long term (aging) per day			± 2	ppb	after 30 days operation
long term (aging) 1 st year			± 200	ppb	after 30 days operation
Frequency adjustment range					
Electronic Frequency Control (EFC)	± 1	± 2		ppm	
EFC voltage V _C	0	5.0	10.0	V	
EFC slope (Δf / ΔV _C)	positive				
EFC input impedance	100			kΩ	
RF output					
Signal waveform	Sine wave				R _L = 50 Ω
Output level	+ 14	+ 16		dBm	@V _C = 5.0 V
Harmonics			-40	dBc	
Spurious			-110	dBc	
Phase noise	See table 1				
Noise floor			-180	dBc/Hz	@ ≥ 100 kHz
Warm-up time @ 25°C			5	min	Δf _{final} /f ₀ < ±0.2 ppm
G-Sensitivity			1.0	ppb/g	per axis
Supply voltage V _S	11.4	12	12.6	V	Note 3
Current consumption (steady state)			275	mA	@ +25°C
Current consumption (warm-up)			475	mA	
Operating temperature range	-10		+60	°C	Note 2
Weight			85	g	
Packing	Palette				
Enclosure (see drawing) (LxWxH)	51x51x19 max.			mm	See drawing

Notes:

1. Terminology and test conditions are according to IEC standard IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Other stability and temperature range on request
3. Other supply voltage 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	

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Phase Noise - Option 1:

Offset	100 MHz					120 MHz					Unit
	A	B	C	D	E	A	B	C	D	E	
10 Hz	-90	-95	-97	-100	-105	-85	-90	-95	-97	-100	dBc/Hz
100 Hz	-125	-130	-132	-135	-137	-118	-122	-125	-127	-130	dBc/Hz
1 kHz	-155	-158	-160	-162	-164	-148	-150	-153	-155	-157	dBc/Hz
10 kHz	-175	-176	-176	-176	-178	-160	-165	-168	-171	-175	dBc/Hz
≥100 kHz	-180	-180	-180	-180	-180	-180	-180	-180	-180	-180	dBc/Hz

Table 1

Ordering Code:

Model (Specification)	Option 1 (Phase Noise)	Revision	Frequency [MHz]
AXIOM5151	Table 1	Rev.3	100.000

Example: AXIOM5151-C_Rev.3 - 100.000MHz

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	2-20	5.6.3	208H		3.6.52	Test Ta Method 1
Resistance to soldering heat	2-58		210F		3.6.48	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, 11 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

Handling and Testing:

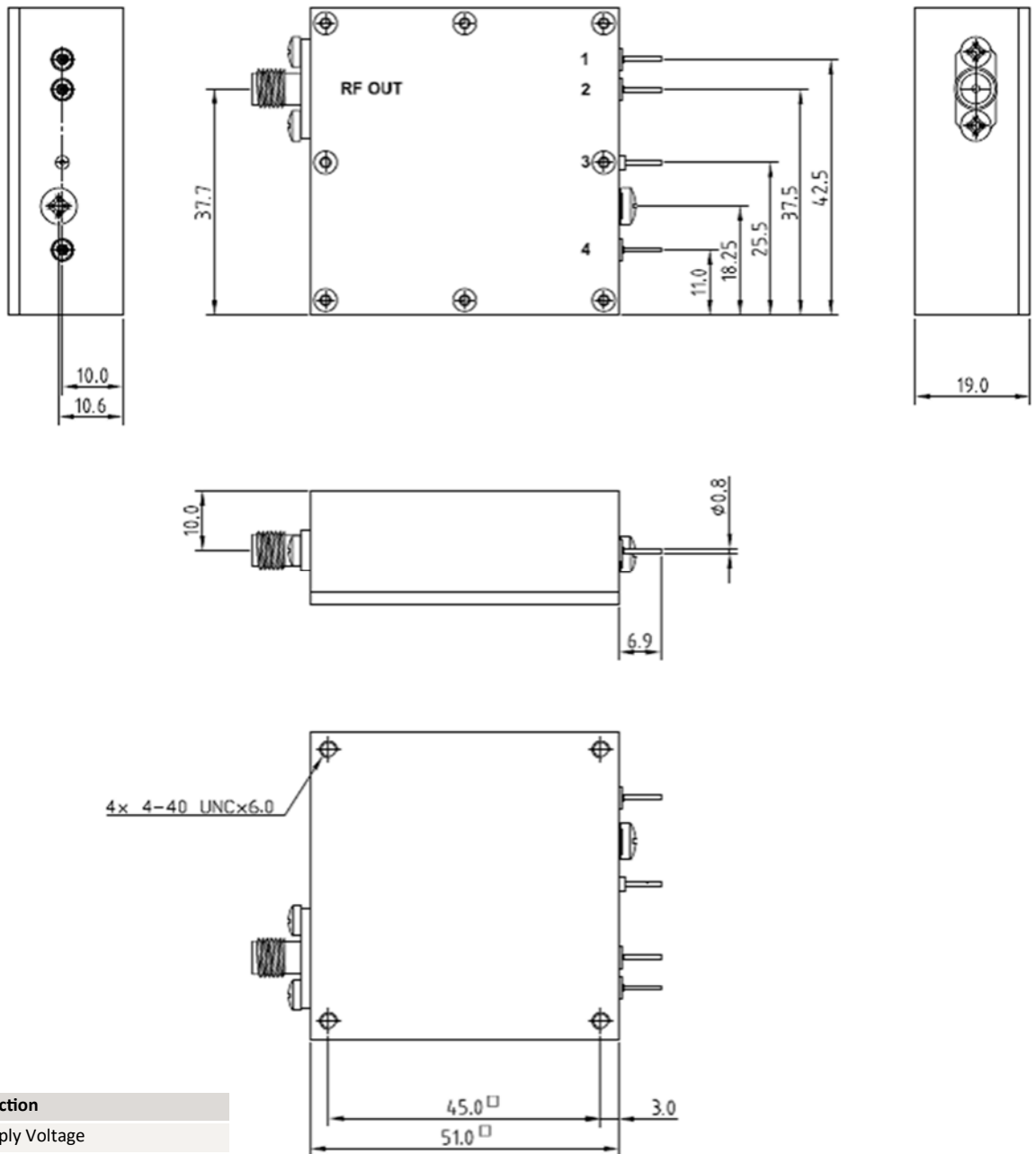
Parameter	Procedure		Condition
Electrostatic discharge (ESD)			
THD devices	IEC60749-26	HBM	2000V
SMD devices	IEC607749-27	MM	200V
Washable	Yes		
RoHS-Compliant	Yes		

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Enclosure drawing :



Pin connections:

Pin #	Symbol	Function
1	V_s	Supply Voltage
2	N.C.	No Connection
3	GND	Ground
4	V_c	Control Voltage (EFC)
SMA	RF OUT	RF Output

Rev. 3 date 2014-05-08