

Datasheet

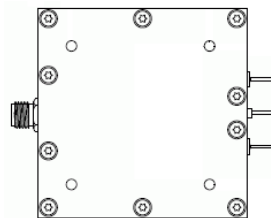
AXIOM200

LOW-PHASE NOISE OCXO in Vibration-isolated package

FEATURES

- SMA Connectorized Package, size 50 x 50 x 24 mm
- Low Phase Noise OCXO in Vibration-Isolated Package
- Sine Wave Output +7 dBm (R 50Ω)
- Frequency range : 60 to 125 MHz

50 x 50 x 24 mm max.



Parameter	min.	typ.	max.	Unit	Condition
Frequency range	60.000		125.000	MHz	
Frequency stability					
Initial tolerance at delivery @+25°C			± 300	ppb	@ V _C = 5V
vs. in operating temperature range		± 100	± 200	ppb	Steady state, note 3
operating temperature range	-40		+85	°C	Note 3
vs. supply voltage variation			± 10	ppb	V _S ± 5%
Long term (aging) per day			± 2	ppb/day	after 30 days operation
Long term (aging) per year			± 100	ppb/year	after 30 days operation
Frequency adjustment range					
Electronic Frequency Control (EFC)	± 1			ppm	
EFC voltage V _C	0	5	10	V	
EFC slope (Df / DV _C)		positive			
EFC input impedance	100			kΩ	
RF output					
Signal waveform	Sine wave				R _L = 50 Ω
Output level	+ 7			dBm	
Harmonics		-40	-30	dBc	
Spurious at rest			-90	dBc	
Phase noise at rest	See table 1 below				
Phase noise under random vibration (see vibration profile chart)	See table 2 below				
Warm-up time @ 25°C (Note 2)			5	min	Df _{final} /f ₀ < ±0.2 ppm
Supply voltage V_S	11.4	12	12.6	V	Note 4
Current consumption (steady state)			300	mA	@ +25°C
Current consumption (warm-up)			500	mA	@ +25°C
Operable temperature range	-45		+90	°C	
Storage temperature range	-55		+105	°C	
Enclosure (see drawing) (LxWxH)	50x50x24 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 frequencies on request. Standard frequencies 100 , 125 MHz
3. Other stability and temperature range on request
4. Other supply voltage on request

Ordering Code (Part number):

Model (Specification)	Phase Noise Option	Vibration sensitivity	Revision	Frequency [MHz]
AXIOM200	A	140	Rev.1	100.000

Datasheet

AXIOM200

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Phase Noise options:

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	-165	-168	-170	-172	-174	-160	-165	-168	-168	-172	dBc/Hz
≥100 kHz	-175	-175	-175	-175	-175	-175	-175	-175	-175	-175	dBc/Hz

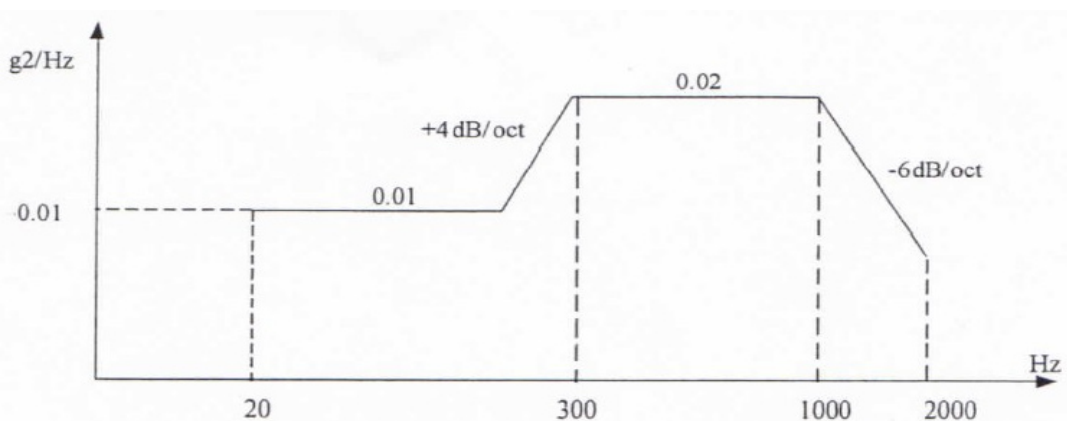
Table 1

Vibration sensitivity option:

Option	100 MHz	Unit
	Phase Noise @ 1 KHz *	
140	-140	dBc/Hz
145	-145	dBc/Hz
150	-150	dBc/Hz
155	-155	dBc/Hz

Table 2 — * PSD = 0.02 g²/Hz according to RTCA/DO160E Curve C

Vibration profile



Functional test: 1 hour each direction

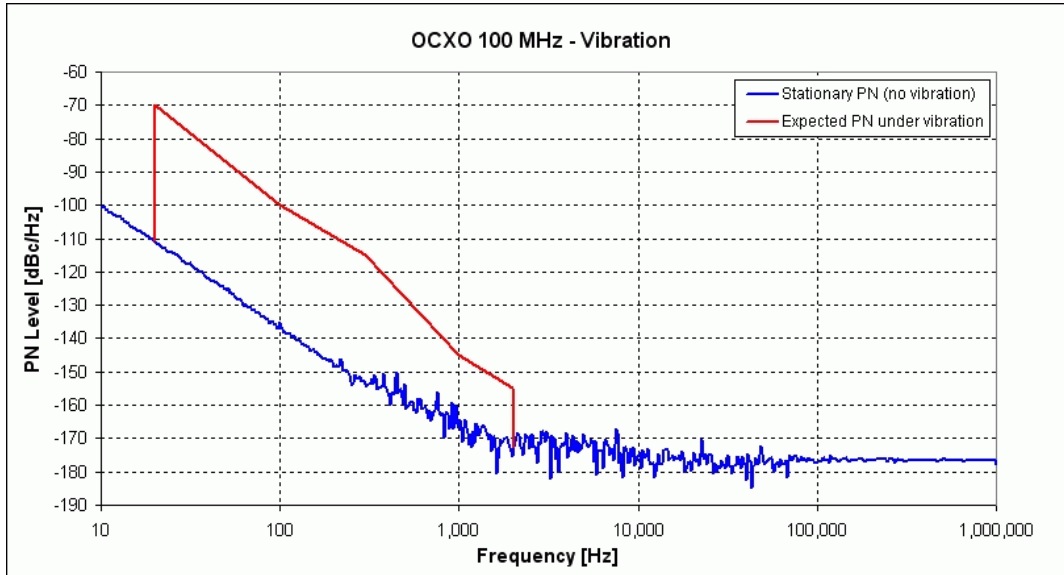
Endurance test: 3 hours each direction @ 2 times the PSD level of the functional test

Datasheet

AXIOM200

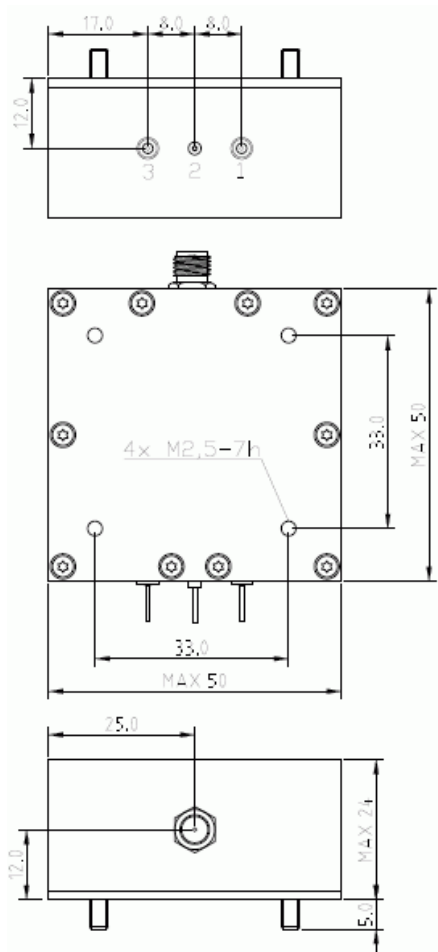
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Phase noise response



Red curve = Vibration sensitivity option "155"

Enclosure drawing



Pin connections

Pin #	Symbol	Function
1	V _s	Supply Voltage
2	GND	Ground
3	V _c	Control Voltage (EFC)
SMA	RF OUT	RF Output

Datasheet

AXIOM200

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Environmental conditions

Test	IEC 60068 Part ...	IEC 60679-1 clause ...	Test conditions
Sealing tests (if applicable)	2-17	4.6.2	Gross leak: Test Qc
Solderability	2-20	4.6.3	Test Ta (235 ± 5)°C Method 1
Resistance to soldering heat	2-58		Test Tb Method 1A, 5s
Shock*	2-27	4.6.8	Test Ea, 3 x per 6 axes 50G, 11 ms half-sine pulse
Endurance tests			
- ageing		4.7.1	30 days @ 85°C, OCXO @25°C
- extended aging		4.7.2	1000h, 2000h, 8000h @85°C

* Endurance test

Revision History

Rev.	Date
1.0	04-03-2013