

<b>Specification</b>	<b>AXIOM275</b>	Rev.: 1	Date: 2023-01-17
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### Oscillator type: Ultra-Low Phase Noise OCXO in Vibration-isolated Package

Parameter	min.	typ.	max.	Unit	Condition
<b>Frequency range</b>	80		120	MHz	
<b>Standard frequencies</b>	100.000			MHz	
<b>Frequency stability</b>					
Initial tolerance @ +25°C			±500	ppb	@ V <sub>c</sub> = 4V
vs. operating temperature range			±100	ppb	steady state (Note 2)
vs. supply voltage variation (pushing)			±20	ppb	V <sub>s</sub> ±5%
vs. load change (pulling)			±20	ppb	R <sub>L</sub> ±5%
Long term (aging) per day			±2	ppb	after 30 days operation
Long term (aging) per year			±200	ppb	after 30 days operation
<b>Frequency adjustment range</b>					
Electronic Frequency Control (EFC)	±0.5	±1.0		ppm	
EFC voltage V <sub>c</sub>	0	4	8	V	
EFC slope (Δf / ΔV <sub>c</sub> )	Positive				
EFC input impedance	100			kΩ	
<b>RF output</b>					
Signal waveform	Sine wave				
Load R <sub>L</sub>	50			Ω	±5%
Output level	+7	+10	+13	dBm	
Harmonics			-30	dBc	
Spurious at rest			-80	dBc	
Phase noise at rest @ 100 MHz		-95	-90	dBc/Hz	@ 10 Hz
		-130	-125	dBc/Hz	@ 100 Hz
		-160	-155	dBc/Hz	@ 1 kHz
		-168	-165	dBc/Hz	@ 10 kHz
		-175	-170	dBc/Hz	@ ≥100 kHz
Phase noise @ 100 MHz under random vibration with 0.01 g <sup>2</sup> /Hz, 10 ~ 2000 Hz (Note 3)		-60	-55	dBc/Hz	@ 10 Hz
		-85	-75	dBc/Hz	@ 100 Hz
		-145	-135	dBc/Hz	@ 1 kHz
		-168	-160	dBc/Hz	@ 10 kHz
		-175	-165	dBc/Hz	@ ≥100 kHz
Warm-up time @ +25°C			5	min	Δf <sub>final</sub> /f <sub>0</sub> < ±100 ppb
<b>Supply voltage V<sub>s</sub></b>	11.4	12.0	12.6	V	(Note 4)
<b>Current consumption (steady state)</b>			100	mA	@ +25°C
<b>Current consumption (warm-up)</b>			300	mA	
<b>Operating temperature range</b>	-40		+70	°C	(Note 2)
<b>Enclosure (see drawing) (LxWxH)</b>	25.4x25.4x15.0 max.			mm	
	AXZ10.01126.01				
<b>Weight</b>			50	g	

**Notes:**

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Other stability and temperature range on request
3. For other vibration profiles please consult factory
4. Other supply voltage on request

**Absolute Maximum Ratings**

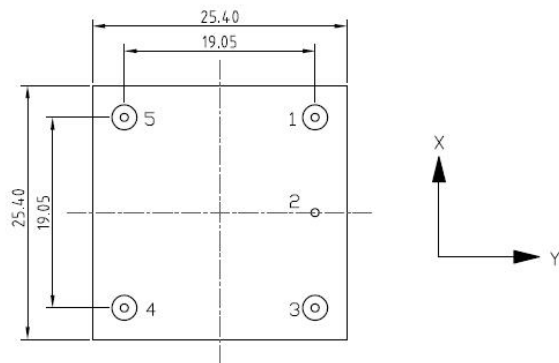
Parameter	min.	max.	Unit	Condition
Supply Voltage $V_s$	-0.5	$V_s + 10\%$	V	$V_s$ to GND
Control Voltage $V_c$	-0.5	10	V	$V_c$ to GND
Storage Temperature	-55	+85	°C	

**Ordering Code**

Model	Revision	Frequency [MHz]
AXIOM275	Rev.2	100.000

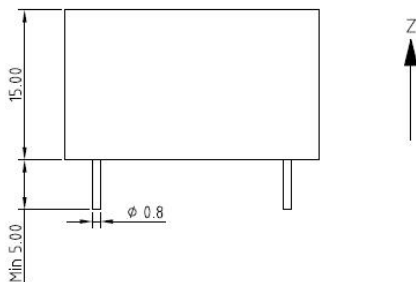
Example: AXIOM275\_Rev.2 – 100.000 MHz

**Enclosure drawing**



**Pin connections**

Pin #	Symbol	Function
1	RF OUT	RF Output
2	GND	Ground
3	$V_c$	Control Voltage (EFC)
4	N.C.	No Connection
5	$V_s$	Supply Voltage



### 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
Moisture Sensitivity Level	J-STD-020	MSL 1	
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 <sub>1</sub> Method 2 Test Td <sub>2</sub> 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

#### Notes:

1. Guaranteed values, which the oscillator will withstand without damage or performance degradation. Not tested in series.
2. Other environmental conditions or screening requirements 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	26.10.2018	First issue	ME	HH
1	D0	17.01.2023	Tuning range updated, editorial changes	HH	HH