

Specification	AXIOM114	Rev.: 1	Date: 2018-11-06
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**Oscillator type: Miniature High Stability SMD OCXO in 9x14 mm Package
Hermetically-sealed and Stratum 3E compliant**

Parameter	min.	typ.	max.	Unit	Condition
Frequency range	10		40	MHz	
Frequency stability					
Overall stability (Note 2)			±600	ppb	
Initial tolerance			±200	ppb	15 mins warm-up @ +25°C
Initial tolerance after reflow (Note 3)			±400	ppb	15 mins warm-up @ +25°C
vs. operating temperature range			±5	ppb	ref. to +25°C
vs. supply voltage variation (pushing)			±1	ppb	V _s ±5%
vs. load change (pulling)			±1	ppb	Load ±10%
Retrace			±50	ppb	24 hrs ON/24hrs OFF/1hr ON
Holdover drift (24 hrs) @ +25°C±1°C			±2	ppb	after 30 days operation
Long term (aging) per day			±1	ppb	after 30 days operation
Long term (aging) 1 st year			±100	ppb	after 30 days operation
Long term (aging) 10 years			±400	ppb	after 30 days operation
Frequency adjustment range					
Electronic Frequency Control (EFC)	N.A.				
RF output					
Signal waveform	LVCMOS				
Load	15			pF	±10%
Symmetry (duty cycle)	45		55	%	@ V _s /2
Rise & decay time			5	ns	@ 10% ~ 90% V _s
Spurious			-70	dBc	
Phase noise			-75 -105 -130 -140 -145	dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz	@ 1 Hz @ 10 Hz @ 100 Hz @ 1 kHz @ 10 kHz
Warm-up time @ +25°C			5	min	Δf _{final} /f ₀ < ±0.1 ppm
Start-up time			100	ms	
Short-term stability (Allan deviation)			5·10 ⁻¹¹		τ = 1 s / still air
Supply voltage V_s	3.15	3.3	3.45	V	
Current consumption (steady state)			300	mA	@ +25°C
Current consumption (warm-up)			750	mA	
Operating temperature range	-40		+85	°C	
Enclosure (see drawing) (LxWxH)	15.4x10.6x8.2 max.			mm	
Weight			5	g	
Moisture Sensitivity Level	MSL1				
Packing	Tape & Reel				IEC 60286-3

Notes:

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Overall stability includes initial tolerance, temperature stability, pushing, pulling and 10 years aging
3. Measured 48 hours after reflow

Absolute Maximum Ratings

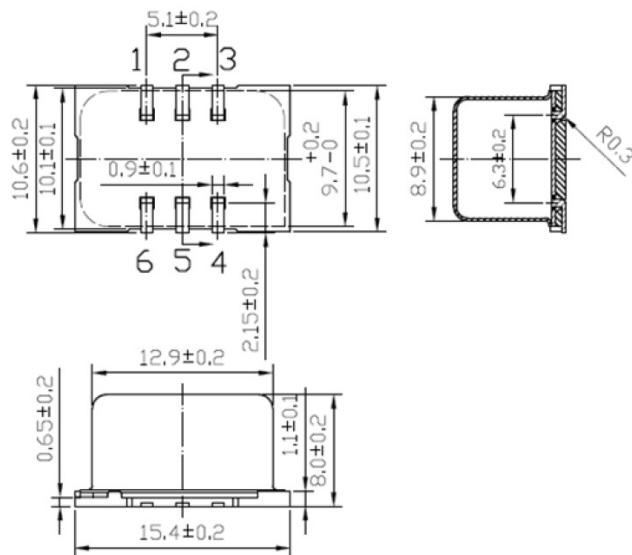
Parameter	min.	max.	Unit	Condition
Supply Voltage V_s	-0.5	$V_s + 10\%$	V	V_s to GND
Storage Temperature	-40	+105	°C	

Ordering Code

Model	Revision	Frequency [MHz]
AXIOM114	Rev.1	10.000

Example: AXIOM114_Rev.1 – 10.000 MHz

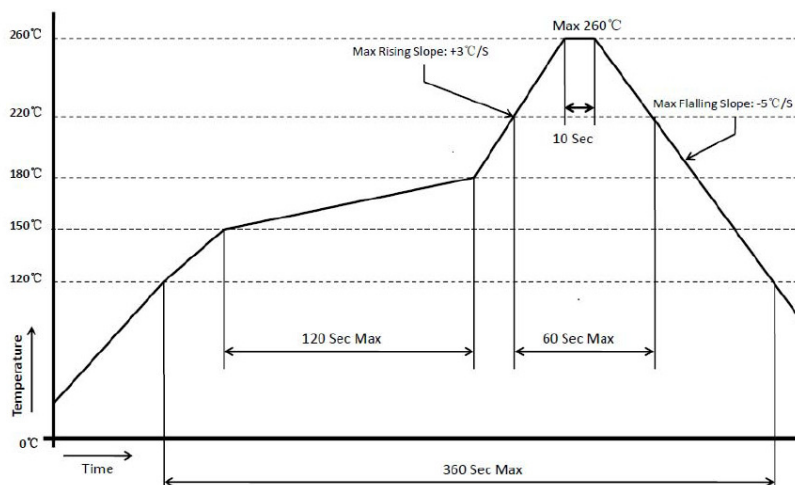
Enclosure drawing



Pin connections

Pin #	Symbol	Function
1	N.C.	No Connection
2	N.C.	No Connection
3	GND	Ground
4	RF OUT	RF Output
5	N.C.	No Connection
6	V_s	Supply Voltage

Recommended Reflow Profile



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		

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, 3x 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

Other environmental conditions 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	07.11.2018	First issue	HH	HH