

Specification	AXLE1000	Rev.: 1	Date: 2014-06-20
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Oscillator type: UHF Temperature Compensated Crystal Oscillator (TCXO)

Parameter	min.	typ.	max.	Unit	Condition
Frequency range	300		1300	MHz	
Nominal frequencies	1000.000 / 1200.000			MHz	
Frequency stability				ppm	
Initial tolerance			±5	ppm	@ 25°C
vs. operating temperature range	±0.5 to ±5 See tables 1 & 2			ppm	Option 1 & 2
vs. supply voltage variation			±1	ppm	V _S ±5%
vs. load change			±1	ppm	R _L ±5%
Long term (aging) per year			±1	ppm	
Frequency adjustment range					
Electronic Frequency Control (EFC)	±5			ppm	
EFC voltage V _C	0.5	2.5	4.5	V	
EFC slope (Δf / ΔV _C)	Positive				
EFC input impedance	100			kΩ	
RF output					
Signal waveform	Sine wave				
Load	50			Ω	
Output level	+7	+10		dBm	
Harmonics		-45	-40	dBc	
Sub-harmonics (multiples of f _{OUT} /10)		-45	-40	dBc	(Note 2)
Spurious			-80	dBc	
Phase noise	Consult factory				
Supply voltage V_S	11.4	12.0	12.6	V	(Note 3)
Current consumption (steady state)			80	mA	@ +25°C
Operating temperature range	-20		+70	°C	
Enclosure (see drawing) (LxWxH)	54x40x19			mm	h = 2.0 mm
Weight			60	g	
Packing	Palette				

Notes:

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Depending on frequency multiplication factor may be lower or higher than 10
3. Other supply voltages 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	6	V	V _C to GND
Storage Temperature	-55	+125	°C	

Frequency stability vs. temperature

Option 1	Stability [ppm]
05	±0.5
10	±1.0
15	±1.5
20	±2.0
25	±2.5
30	±3.0
35	±3.5
50	±5.0

Table 1

Lower Temperature		Upper Temperature	
Option 2	T [°C]	Option 2	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

Ordering Code

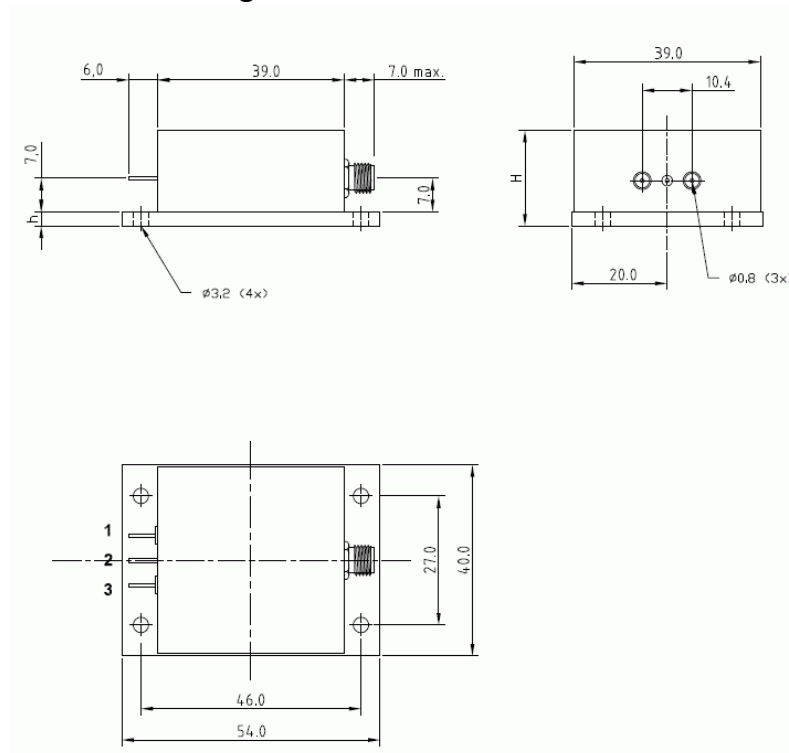
Model	Option 1 [Stability]	Option 2 [Temperature range]	Revision	Frequency [MHz]
AXLE1000	Table 1	Table 2	Rev.1	1000.000

Example: AXLE1000-20-2C_Rev.1 – 1000.000 MHz

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		

Enclosure drawing



Pin connections

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

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, 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	20.06.2014	First issue	HH	HH