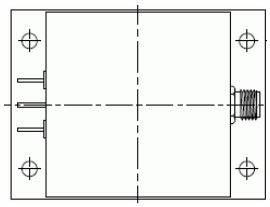
Data sheet

AXLE1000 — UHF Temperature Compensated Crystal Oscillator (TCXO)

FEATURES

- Various options for frequency stability over temperature range
- (UHF) Frequency range : 300MHz to 1200MHz
- Standard frequencies: 1000MHz / 1200MHz
- Oscillator with SMA connector output
- Sine Wave output +10dBm (R 50Ω)
- Electronic Frequency Control (EFC)

54 x 40 x 19 mm max. h=2.0mm



Parameter	min.	typ.	max.	Unit	Condition
Frequency range	300		1300	MHz	
Nominal frequencies	1000.000 / 1200.000			MHz	
Frequency stability					
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 ($\Delta f/\Delta V_c$)	Positive				
EFC input impedance	100			kΩ	
RF output					
Signal waveform	Sine wave				R_L = 50Ω
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	Contact FCD-Tech				
Start-up time		10	20	ms	
Supply voltage V_S	11.4	12	12.6	V	Note 3
Current consumption (steady state @ +25°C)			80	mA	@ +25°C
Operable temperature range	-40		+90	°C	
Storage temperature range	-55		+105	°C	
Enclosure (see drawing) (LxWxH)	54 x 40 x 19			mm	h = 2.0 mm
Weight			60	gram	
Packing	Palette				

Notes:

1. Terminology and test conditions are according to IEC standard 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

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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	
Option 2	Temp (°C)
0	0
1	-10
2	-20
3	-30
4	-40

Upper Temperature	
Option 2	Temp (°C)
A	+50
B	+60
C	+70
D	+75
E	+80
F	+85

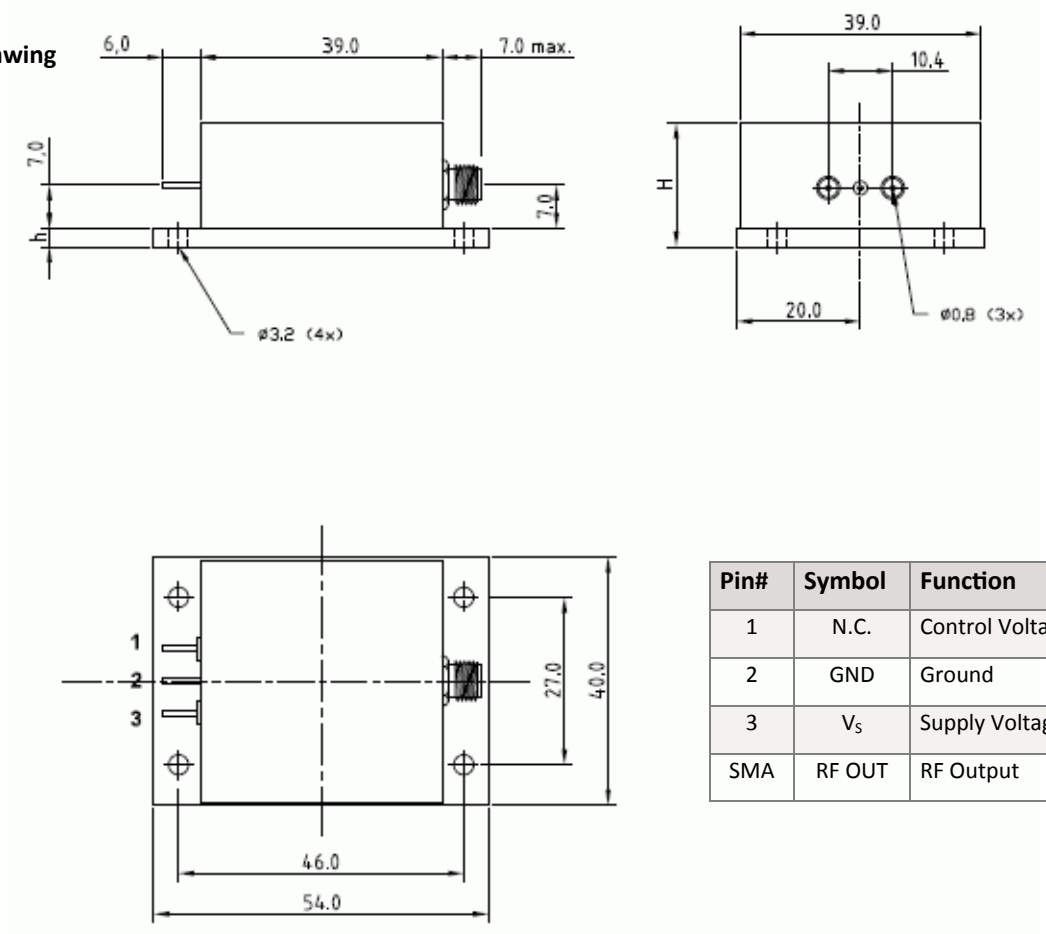
Table 2

Ordering Code:

Model (Specification)	Option 1 (Stability)	Option 2 (Temp. range)	Revision	Frequency [MHz]
AXLE1000	Table 1	Table 2	Rev.1	1000.000

Example: AXLE1000-20-2C-Rev.1-1000.000MHz

Enclosure drawing



Pin#	Symbol	Function
1	N.C.	Control Voltage (EFC)
2	GND	Ground
3	V_S	Supply Voltage
SMA	RF OUT	RF Output

Rev. 1 dated 20-06-2014

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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, 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

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