

Specification	AXIOM130HP	Rev.: 2	Date: 2015-06-23
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Oscillator type: High-performance OCXO with very high frequency stability
equivalent to Oscilloquartz Models OCXO 8662/8663

Parameter	min.	typ.	max.	Unit	Condition
Frequency range	5		40	MHz	
Standard frequencies	5.000 / 8.192 / 10.000 / 16.384			MHz	
Frequency stability					
Initial tolerance @ +25°C			±100	ppb	V _C @ VREF/2
vs. operating temperature range	Option 2 & 3 See tables 1 & 2				steady state
vs. supply voltage variation (pushing)			±0.3	ppb	V _S ±5 %
vs. load change (pulling)			±0.05	ppb	R _L ±10 %
Long term (aging) per day (Note 2)			±0.2	ppb	after 30 days operation
Long term (aging) per month (Note 2)			±5	ppb	after 30 days operation
Long term (aging) per year (Note 2)			±30	ppb	after 30 days operation
Frequency adjustment range					
Electronic Frequency Control (EFC)	±0.3			ppm	
EFC voltage V _C	0	VREF/2	VREF	V	
EFC slope (Δf / ΔV _C)	Positive				
EFC nonlinearity			±5	%	
EFC input impedance	100			kΩ	
RF output (Note 3)					
Signal waveform	Sine wave				
Load R _L	50			Ω	±10%
Output level	+4			dBm	
Harmonics			-30	dBc	
Spurious			-70	dBc	f _{nom} ±1 MHz
Warm-up time @ +25°C			3	min	Δf _{final} /f ₀ < ±0.1 ppm
Phase noise @ 10.000 MHz		-95 -125 -145 -155 -160	-80 -110 -135 -145 -145	dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz	@ 1 Hz @ 10 Hz @ 100 Hz @ 1 kHz @ ≥10 kHz
Short term stability (Allan deviation)			2·10 ⁻¹¹		τ = 0.2~10 s
Reference voltage VREF output (Note 4)		10.0		V	
Supply voltage V_S (Note 5)	11.4 22.8	12.0 24.0	12.6 25.2	V V	Option 1 = "12" Option 1 = "24"
Current consumption (steady state) @ +25°C			200 100	mA mA	Option 1 = "12" Option 1 = "24"
Current consumption (warm-up)			500 300	mA mA	Option 1 = "12" Option 1 = "24"
Enclosure (see drawing) (LxWxH)	52.0x42.0x25.0 max.			mm	
Weight			100	g	
Packing	Palette				

Notes:

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Lower aging on request
3. HCMOS output on request
4. Other reference voltage on request
5. 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	15	V	V_C to GND
Storage Temperature	-40	+125	°C	

Frequency stability vs. temperature

Option 2	Stability [ppb]
001	± 0.1
003	± 0.3
005	± 0.5
02	± 2

Table 1

Lower Temperature		Upper Temperature	
Option 3	T [°C]	Option 3	T [°C]
0	0	A	+50
1	-10	B	+60
2	-20	C	+70

Table 2

Standard: "1B" = -10°C to +60°C

Ordering Code

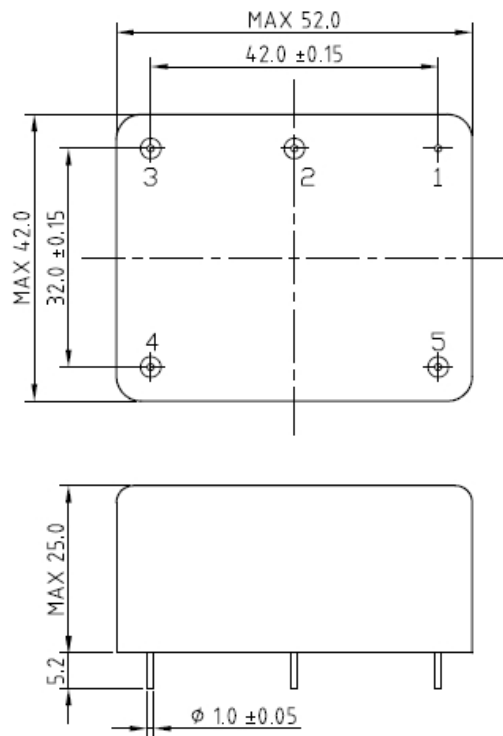
Model	Option 1 [Supply Voltage]	Option 2 [Stability]	Option 3 [Temperature range]	Revision	Frequency [MHz]
AXIOM130HP	12 or 24	Table 1	Table 2	Rev.2	10.000

Example: AXIOM130HP-12-02-2C_Rev.2 – 10.000 MHz

Handling and Testing

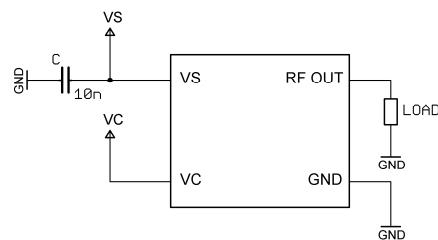
Parameter	Procedure		Source
Handling and Testing	Application Note AXAN-011		www.axtal.com
Processing	Application Note AXAN-012		www.axtal.com
Parameter	Procedure		Condition
Electrostatic discharge (ESD)			
THD devices	IEC60749-26	HBM	2000 V
SMD devices	IEC60749-27	MM	200 V
Washable	✘ Yes ☐ No		
RoHS- Compliant	✘ Yes ☐ No		

Enclosure drawing



Pin connections:

Pin #	Symbol	Function
1	GND	Ground
2	V _C	Control Voltage (EFC)
3	VREF	Reference voltage
4	V _S	Supply Voltage
5	RF OUT	RF Output



* See Application Note AXAN-011

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

Revision History

Rev.	Drawing	Date [dd.mm.yyyy]	Remarks	Author	Checked
1	D0	15.01.2015	First issue	HH	BN
2	D0	23.06.2015	Standard frequency 16.384 MHz corrected, temp. stability option 2 updated, editorial changes	HH	HH