

Specification	AXIOM70	Rev.: 4	Date: 2014-04-18
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Oscillator type: High Stability OCXO with HCMOS Output

Parameter	min.	typ.	max.	Unit	Condition
Frequency range	5		40	MHz	
Standard frequencies	10.000/12.800/20.000/40.000			MHz	
Frequency stability					
Initial tolerance @ +25°C			±300	ppb	V _C @ VREF/2
vs. operating temperature range	Option 2 & 3 See tables 1 & 2				steady state
vs. supply voltage variation (pushing)			±10	ppb	V _S ±5%
vs. load change (pulling)			±5	ppb	Load ±10%
Long term (aging) per day (after 30 days operation) (Note 2)			±10 ±2	ppb ppb	AT-Cut SC-Cut
Long term (aging) 1 st year (after 30 days operation) (Note 2)		±300 ±50	±500 ±200	ppb ppb	AT-Cut SC-Cut
Frequency adjustment range					
Electronic Frequency Control (EFC)	±2 ±0.8		±5	ppm ppm	AT-Cut SC-Cut
EFC voltage V _C	0	VREF/2	VREF	V	
EFC slope (Δf / ΔV _C)	Positive				
EFC input impedance	100			kΩ	
RF output					
Signal waveform	HCMOS				
Load	15			pF	±10%
Symmetry (duty cycle)	40		60	%	@ V _S /2
Rise & decay time			5	ns	@ 10% ~ 90% V _S
Warm-up time @ +25°C		3	5	min	Δf _{final} /f ₀ < ±0.1 ppm
Phase Noise	Consult factory				
Reference voltage VREF output (Note 3)		3.0 4.0		V V	Option 1 = "33" Option 1 = "50"
Supply voltage V_S	3.15 4.75	3.3 5.0	3.45 5.25	V V	Option 1 = "33" Option 1 = "50"
Current consumption (steady state) @ +25°C (Note 4)			350 250	mA mA	Option 1 = "33" Option 1 = "50"
Current consumption (warm-up) (Note 4)			900 600	mA mA	Option 1 = "33" Option 1 = "50"
Enclosure (see drawing) (LxWxH) (Note 5)	25.8x25.8x12.7 max.			mm	IEC 60679-3 CO 43
Weight			20	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. Other reference voltages on request
4. May be higher for wide operating temperature range
5. Lower height H available 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	-55	+125	°C	

Frequency stability vs. temperature

Option 2	Stability [ppb]
05	±5
10	±10
25	±25
50	±50
100	±100
200	±200

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
3	-30	D	+75
4	-40	E	+80
5	-55	F	+85

Table 2

Standard: "1B" = -10°C to +60°C

Temperature range [°C]	Frequency stability [Option 2]					
	05	10	25	50	100	200
0 ~ +50	SC	SC	SC	AT	AT	AT
-10 ~ +60	SC	SC	SC	AT	AT	AT
-20 ~ +70	SC	SC	SC	SC	AT	AT
-30 ~ +70	O	SC	SC	SC	SC	AT
-40 ~ +75	O	O	SC	SC	SC	SC
-40 ~ +85	O	O	SC	SC	SC	SC
-55 ~ +85	-	O	O	SC	SC	SC

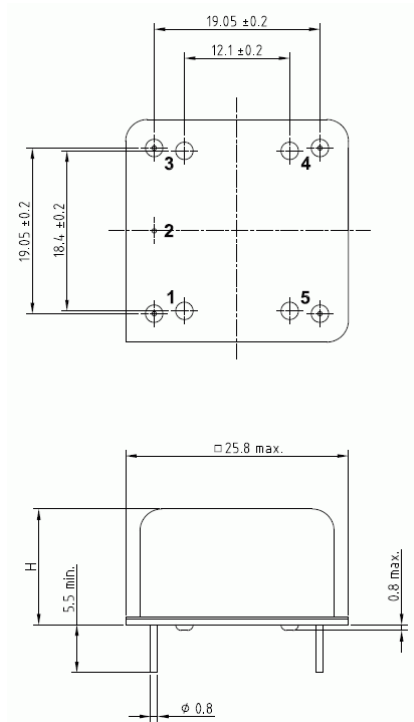
Table 3 "Availability" AT, SC = AT-Cut, SC-Cut available, O = available on request, - not available

Ordering Code

Model	Option 1 [Supply Voltage]	Option 2 [Stability]	Option 3 [Temperature range]	Revision	Frequency [MHz]
AXIOM70	33, 50	Table 1	Table 2	Rev.4	10.000

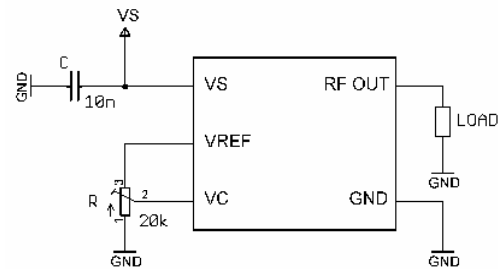
Example: AXIOM70-50-10-1B_Rev.4 – 10.000 MHz

Enclosure drawing



Pin connections

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



* See Application Note AXAN-011

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	<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 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
3	D0	14.10.2013	Major revision	CG	BN
4	D0	18.04.2014	Frequency range extended, various parameters updated, environmental conditions updated, editorial changes	HH	HH