

<b>Specification</b>	<b>AXRB1031</b>	Rev.: 3	Date: 2019-11-11
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**Oscillator type: Miniature Rubidium Oscillator in 50 x 50 mm Package**

**Features:**

- Miniature Rubidium Oscillator
- Compact 50 x 50 mm Package (OCXO compatible)
- Low cost allows OCXO substitution
- Low power consumption <6 W Steady-state
- RS-232 Communication
- Applications: UMTS, LTE, 5G, CDMA, WiMAX etc.
- Equivalent to ELECSPN XHTF1031R



**Ordering Code**

<b>Model</b>	<b>Revision</b>	<b>Frequency [MHz]</b>
AXRB1031	Rev.3	10.000

Example: AXRB1031\_Rev.3 – 10.000 MHz

Parameter	min.	typ.	max.	Unit	Condition
<b>Nominal output frequency</b>	10.000			MHz	
<b>Frequency stability</b>					
Initial tolerance at delivery @ +25°C			±0.05	ppb	
vs. operating temperature range			±0.60	ppb	steady state
Long term (aging) per day			±0.005	ppb	
Long term (aging) per month			±0.05	ppb	
Retrace @ +25°C			±0.02	ppb	1 h after 24 hrs OFF
<b>Frequency adjustment range</b>					
Electronic Frequency Control (EFC)	±1	±2		ppb	
EFC voltage $V_c$	0		5	V	
EFC slope ( $\Delta f / \Delta V_c$ )	Positive				
EFC input impedance	10			k $\Omega$	
<b>RF output</b>					
Signal waveform	Sine wave				
Load $R_L$	50			$\Omega$	±5%
Output level	+7			dBm	
Harmonics			-30	dBc	
Phase noise		-95 -125 -135		dBc/Hz dBc/Hz dBc/Hz	@ 10 Hz @ 100 Hz @ 1 kHz
Short-term stability (ADEV)			$5 \cdot 10^{-11}$ $2 \cdot 10^{-11}$ $5 \cdot 10^{-12}$		@ $\tau = 1$ sec @ $\tau = 10$ sec @ $\tau = 100$ sec
Warm-up time @ +25°C			7	min	Time to lock
<b>Lock Detect</b>		0	1.5	V	Locked
	3.5	5		V	Not locked
<b>Supply voltage <math>V_s</math></b> (Note 2)	11.4	12.0	15.0	V	
<b>Power consumption</b> (steady state)			6	W	@ $V_s=12V$
<b>Power consumption</b> (warm-up)			20	W	@ $V_s=12V$
<b>Operating temperature range</b>	-30		+65	°C	
<b>Enclosure (see drawing) (WxDxH)</b>	50.8x50.8x25			mm	
<b>Drawing number</b>	AXZ10.01123.02				
<b>Weight</b>			150	g	
<b>MTBF</b>	100,000			hrs	

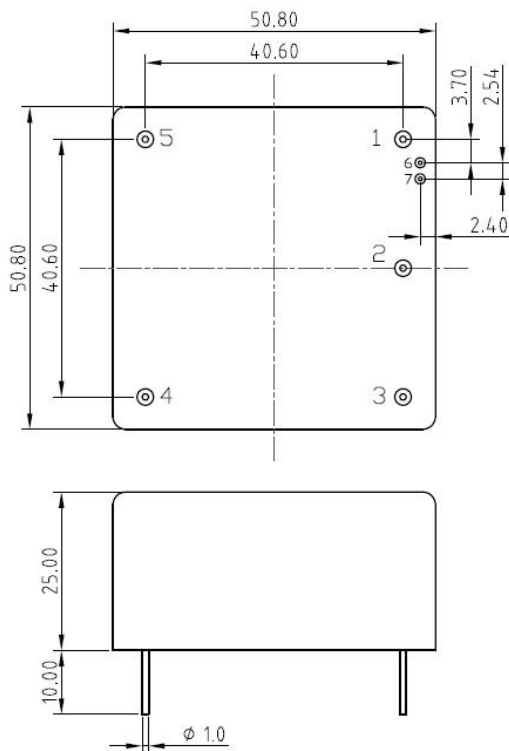
**Notes:**

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. For model with 5V supply voltage see our AXRB1031H

**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	7	V	$V_c$ to GND
Storage Temperature	-55	+85	°C	

## Enclosure drawing



### Pin connections:

Pin #	Symbol	Function
1	V <sub>c</sub>	Control Voltage (EFC)
2	LD	Lock Detect
3	RF OUT	10 MHz Output
4	GND	Ground
5	V <sub>s</sub>	Supply Voltage
6	TX	Serial Transmit RS-232
7	RX	Serial Receive RS-232

## 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		

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	30.10.2018	First issue	HH	ME
2	D0	27.11.2018	ADEV, temperature range and drawing changed	HH	HH
2	D1	24.04.2019	Editorial changes	JH	HH
3	D0	26.09.2019	Short-term stability & retrace updated, temperature range changed, editorial changes	HH	HH
3	D1	11.11.2019	Power consumption (warm-up) corrected	HH	HH