Specification	AXGS20	Rev.: 2	Date: 2019-06-13

Oscillator type: Gated SAW Oscillator in hermetic DIL14/4 Package

Parameter	min.	typ.	max.	Unit	Condition
Frequency Range	950		1532	MHz	
Standard frequencies	970/1030/1090/1150/1532			MHz	
Frequency stability					
Overall tolerance (Note 2)			±350	ppm	
Long term (aging) per year			±5	ppm	
Gate function					
Low level input voltage V_{GL}		0	1.5	V	
High level input voltage V_{GH}	3.5	5.0	5.5	V	
Input resistance	10			kΩ	
Input capacitance		5	10	pF	
Turn-on time			40	ns	
Turn-off time			30	ns	
RF output					
Signal waveform		Sine wave			
Load R_L		50		Ω	
Output level Gate ON	+7	+10		dBm	@ V_{GATE} > +3.5 V
Output level Gate OFF (Note 4)		-40	-35	dBm	@ V_{GATE} < +1.5 V
Harmonics		-40	-30	dBc	
Supply voltage V_S (Note 5)	4.75	5.0	5.25	V	
Current consumption					
Gate ON		35	60	mA	@ V_{GATE} > +3.5 V
Gate OFF		10	20	mA	@ V_{GATE} < +1.5 V
Operating temperature range	-40		+85	°C	
Enclosure (see drawing) (LxWxH)	20.7x13.1x5.2 max.			mm	IEC 60679-3 CO 02
Weight			5	g	
Packing	Tape & Reel				IEC 60286-3

Notes:

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Overall tolerance includes initial tolerance, frequency stability vs. temperature range, pushing and pulling
3. Voltage transients above maximum ratings must not be present at supply and gate input
4. Ensure sufficient grounding and blocking.
5. Supply voltage of 3.3 V or 12 V on request.

Absolute Maximum Ratings

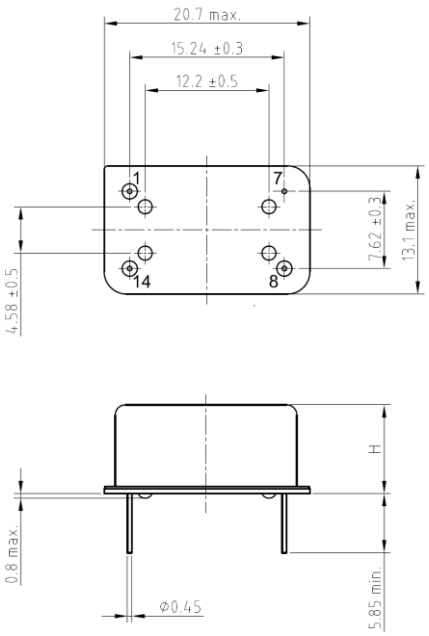
Parameter	min.	max.	Unit	Condition
Supply Voltage V_S (Note 3)	-0.5	V_S + 10%	V	V_S to GND
Gate Voltage V_{GATE} (Note 3)	-0.5	V_S	V	V_{GATE} to GND
Storage Temperature	-55	+105	°C	

Ordering Code

Model	Revision	Frequency [MHz]
AXGS20	Rev.2	1090.000

Example: AXGS20_Rev.2 – 1090.000 MHz

Enclosure drawing



Pin connections

Pin #	Symbol	Function
1	V_{GATE}	Gate Input
7	GND	Ground, case
8	RF OUT	RF Output
14	V_S	Supply Voltage

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	

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
1	D0	19.03.2016	First issue AXGS20	BN	BN
1	D1	18.01.2018	Maximum ratings updated with additional information	HH	HH
1	D2	22.03.2019	Correction of title	ME	HH
2	D0	13.06.2019	Fixed gating version – Various parameters updated	HH	HH