AXTAL ADVANCED XTAL PRODUCTS

Designed and Manufactured in Germany

Specification	AXGT175	Rev.: 2	Date: 2022-03-04

Oscillator type: Gated Temperature Compensated Crystal SMD Oscillator

Parameter	min.	typ.	max.	Unit	Condition
Frequency range	950		1532	MHz	
Standard frequencies		1030.000 / 1090.000		MHz	
Frequency stability					
Initial tolerance at delivery			±1	ppm	@ +25°C
vs. operating temperature range			±1	ppm	(Note 2)
Long term (aging) per year			±2	ppm	
Gate function (optional)		Option 1			
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			10	pF	
Turn-on time		35	40	ns	
Turn-off time		25	30	ns	
RF output		Option 2			
Signal waveform		Sine wave			
Load R_L		50		Ω	
Output level Gate ON	+10		+26	dBm	@ V_{GATE} > +3.5 V
Output level variation			±2	dB	
Output level Gate OFF		-60	-50	dBc	@ V_{GATE} < +1.5 V
Harmonics			-30	dBc	
Spurious			-80	dBc	
Phase noise @ 1030 MHz (Note 3)		-110 -130 -150		dBc/Hz dBc/Hz dBc/Hz	@ 10 kHz @ 100 kHz @ 1 MHz
Lock Detect Output LD (Note 4)	3.0			V	PLL locked
Supply voltage V_S	4.75	5.0	5.25	V	
Current consumption (Note 5)			200	mA	
Operating temperature range (Note 2)	-40		+55	°C	
Enclosure (see drawing) (LxWxH)		25.4x25.4x8.0 max.		mm	
Weight			10	g	
Packing		Palette			

Notes:

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Other stability and temperature range on request
3. Please consult factory for phase noise of other frequencies
4. Internal PLL with TCXO reference
5. Current consumption depends on output level

Absolute Maximum Ratings

Parameter	min.	max.	Unit	Condition
Supply Voltage V_S	-0.5	V_S + 10%	V	V_S to GND
Gate Voltage V_{GATE}	-0.5	V_S + 10%	V	V_{GATE} to GND
Storage Temperature	-55	+125	°C	

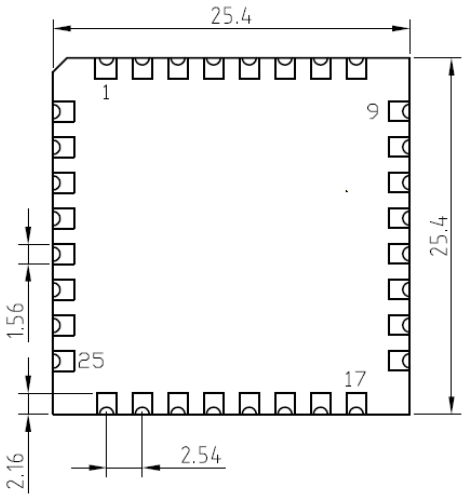
Ordering Code

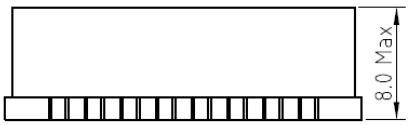
Model	Option 1 [Gate Function]	Option 2 [Output level in dBm]	Revision	Frequency [MHz]
AXGT175	G = With Gate function Blank = No Gate function	12 to 24	Rev.2	1030.000

Example: AXGT175G-24_Rev.2 – 1030.000 MHz

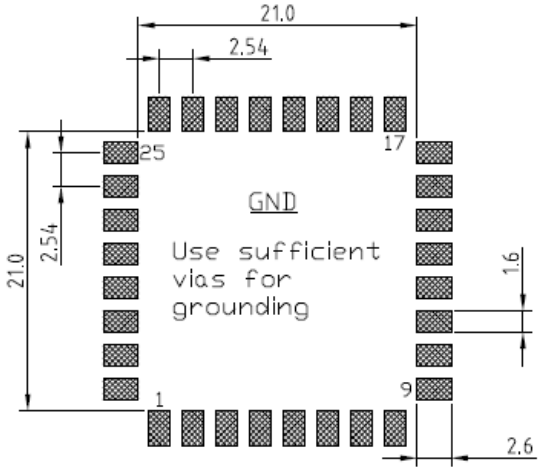
Enclosure drawing

- Bottom View -





Recommended Footprint



Note:

1. 50Ω Transmission line for Pin 19 – RF Output

Pin connections

Pin #	Symbol	Function
1	LD	Lock Detect
2	D.N.C.	Do Not Connect
19	RF OUT	RF Output
22	V_{GATE} or D.N.C	Gate Input or Do Not Connect
31,32	V_S	Supply Voltage
All others	GND	Ground, case

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

Revision History

Rev.	Drawing	Date [dd.mm.yyyy]	Remarks	Author	Checked
1	D0	03.09.2014	First issue	HH	HH
1	D1	07.04.2015	Pin connection for Pin 2 added	HH	ME
1	D2	27.05.2015	Dimensions of Pins in drawing added	ME	BN
2	D0	15.07.2015	typical PN values added	ME	HH
2	D1	05.09.2018	Pin connection for Pin 22 updated	ME	ME
2	D2	04.03.2022	Recommended Footprint added, editorial changes	ME	HH