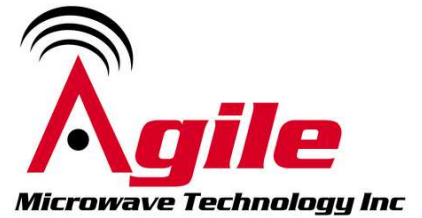


AMT-A0297-I 0.4 GHz to 3 GHz Ultra Low Noise Amplifier

Data Sheet



Features

- 0.4 GHz to 3 GHz Frequency Range
- Noise Figure 1 dB max @ 25C
- Typical Gain 25 dB
- Gain Flatness ± 1.2 dB
- P1dB +12 dBm Typical
- Internally Regulated
- Operates from a Single +8V Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology



Description

The AMT-A0297-I is a Ultra Low Noise amplifier with very low noise figure over the full frequency range. The performance is achieved through the use of AMTI's proprietary technology. The amplifier I/Os are Internally matched to 50 Ohms. The AMT-A0297-I is ideal for use as Front End of receiver system, or where amplification is required without adding excessive noise in a Hi-Rel communications system for Commercial or Military applications.

Applications

- Receiver front end,
- Radar
- Communication systems
- Microwave Radio systems
- Test Equipment

MAXIMUM RATINGS¹

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	T_{MO}	° C	-20	+75
Storage Temperature - Case	T_{MS}	° C	-40	+85
RF Input power (CW)	P_{in}	dBm		+15
Die $T_{Junction}$	T_J	° C		+150
Positive Supply Voltage	V_{+SS}	V		+12

Do NOT apply DC to RF Input

ESD: Class-1

1. Stresses above those listed under "Absolute Maximum Rating" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ELECTRICAL SPECIFICATIONS @ 23°C

Parameter	Conditions	Units	MIN	Typical	MAX
Frequency Range		GHz	0.4		3
Gain	Small Signal @ 25C 0C max Gain 28 dB	dB	20	26	28
Gain Flatness		dB		±1.2	± 2.5
Output Power (P1dB)	1 dB compression point @ 2GHz	dBm	10	12.5	
OIP3	OIP3 @ 2 GHz Two tone F1-F2= 10MHz	dB		20	
Noise Figure		dB		0.8	1.0
RF Input Impedance	Reference to 50 ohms VSWR			1.8:1	2.3:1
RF Output Impedance	Reference to 50 ohms			1:8:1	2.2:1
Supply Voltage Positive:		V		+8	
Supply Current Positive:		mA		85	120

Notes:

1/ Unconditional Stability

2/ Supplied data:

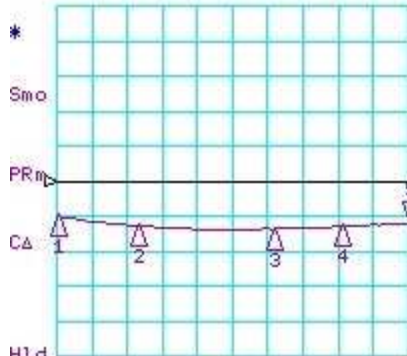
@ 25C Gain Plot, VSWR, NF, P1dB @ 0.4, 1.5 and 3 GHz

@ 0C and +50C Gain Plots

Customized configurations of the above specifications are available

Typical Electrical Performance @ 23C

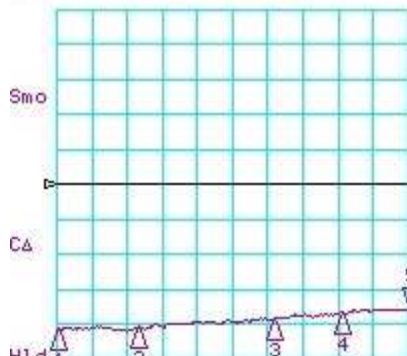
CH1 LOG 10 dB/ REF 0 dB
S11 5:-12.200 dB 3 000.000 000 MHz



CH1 Markers
1:-10.043 dB
400.000 MHz
2:-12.675 dB
1.00000 GHz
3:-13.671 dB
2.00000 GHz
4:-12.885 dB
2.50000 GHz

H1d
START 400.000 MHz STOP 3000.000 MHz

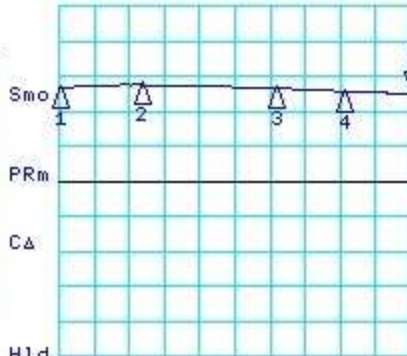
CH3 LOG 10 dB/ REF 0 dB
S12 5:-36.116 dB 3 000.000 000 MHz



CH3 Markers
1:-41.325 dB
400.000 MHz
2:-40.800 dB
1.00000 GHz
3:-38.510 dB
2.00000 GHz
4:-36.785 dB
2.50000 GHz

H1d
START 400.000 MHz STOP 3000.000 MHz

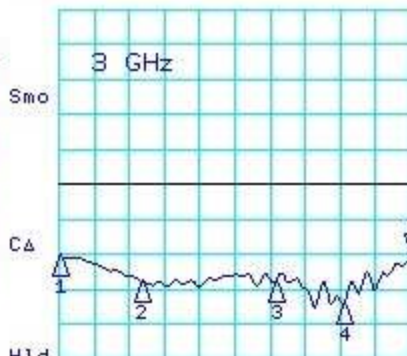
CH2 LOG 10 dB/ REF 0 dB
S21 5: 24.941 dB 3 000.000 000 MHz



CH2 Markers
1: 26.505 dB
400.000 MHz
2: 27.600 dB
1.00000 GHz
3: 26.535 dB
2.00000 GHz
4: 25.726 dB
2.50000 GHz

H1d
START 400.000 MHz STOP 3000.000 MHz

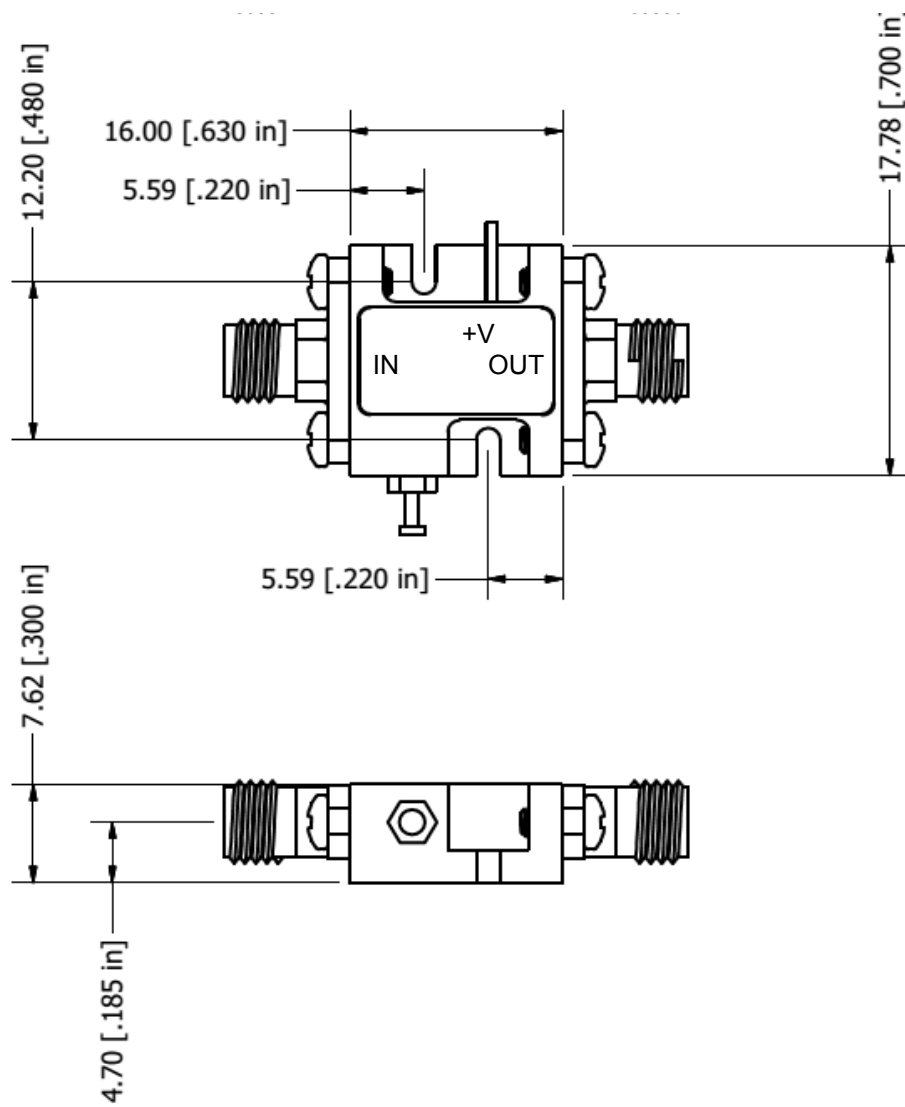
CH4 LOG 10 dB/ REF 0 dB
S22 5:-20.453 dB 3 000.000 000 MHz



CH4 Markers
1:-20.473 dB
400.000 MHz
2:-27.723 dB
1.00000 GHz
3:-27.598 dB
2.00000 GHz
4:-34.329 dB
2.50000 GHz

H1d
START 400.000 MHz STOP 3000.000 MHz

Package Outline: M088 SMA Connectorized (inches)



Housing: Aluminum Gold over Nickel plated
Removable SMA and Ground Slug

Model Number	Description	Hermeticity	Package
AMT-A0279	SMA Female	Non-Hermetic	Outline: M088

Contact us for custom configurations and special requirements.

Our highly experienced team of engineers can quickly identify and implement innovative solutions using latest technology to improve performance and reduce cost.

- Add additional functionality: Input limiter, Temperature compensation, Amplitude/Phase matching, Amplitude/Phase Tracking, Automatic Gain control, Gain sloping, Bypass path, Specific supply voltage, Regulation, Power detector, Health status, and others
- Integrated: Filters, Switches, Limiter, Digital attenuator, Phase shifter, Microcontroller, Multiple amplifiers, Switch matrix, Comb generators and others
- Mechanical: Custom packages - Surface Mount, Connectorized, Waveguide, Carrier, Drop-in, Hermetic and others

Agile Microwave Technology Inc is the logical choice for all your commercial or military RF/Microwave components/module requirements.

Contact Information:

**701 Cascade Pointe Lane
Cary, NC 27513**

**ISO 9001:2015
Certified Company**



Phone: (984) 228-8001

info@agilemwt.com

www.agilemwt.com

AMTI reserves the right to change at any time without notice the design, specifications, function/form or availability of its products described herein. The buyer/customer has the responsibility to validate the performance for their applications. No liability is assumed as result of use of this datasheet or product and no patent licenses are implied. AMTI reserves all rights.