

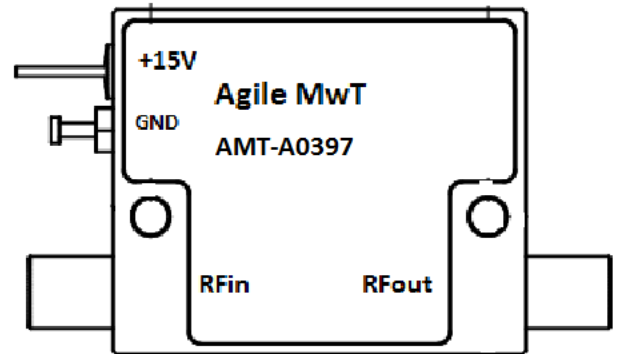
# AMT-A0397 0.4 GHz to 10 GHz Low Noise, P1dB 1W & Low EMI Leakage Amplifier



## Data Sheet

### Features

- 0.4 GHz to 10 GHz Frequency Range
- Gain 37dB typ
- Gain Flatness <math>\pm 1.5\text{ dB typ } \pm 2.7\text{ dB max}</math>
- Typical Noise Figure <math>< 3.2\text{ dB } 5\text{ dB max}</math>
- +31 dBm P1dB Typical
- Internally Regulated
- High EMI performance  
DC to RF leakage -90 dBc typ -70 dBc max
- Operates from a Single +15V Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology



### Description

The AMT-A0397 is a Broadband Low Noise amplifier with high power and low EMI leakage over the full frequency range. The performance is achieved through the use of AM-TI's proprietary technology. The amplifier I/Os are Internally matched to 50 Ohms . The AMT-A0397 is ideal for use in communication system, or where amplification is required without adding excessive noise in a Hi-Rel communications

### Applications

- Communication systems
- Microwave Radio systems
- Test Equipment
- Point to Point Radios
- Radar

### MAXIMUM RATINGS<sup>1</sup>

**Do NOT apply DC to RF Input**

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	$T_{MO}$	° C	-40	+85
Storage Temperature - Case	$T_{MS}$	° C	-54	+95
RF Input power (CW)	$P_{in}$	dBm		+12
Die $T_{Junction}$	$T_J$	° C		+150
Positive Supply Voltage	$V_{+SS}$	V		+16

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		10
Gain	Small Signal	dB	35	37	
Gain Flatness		dB		±1.5	±2.7
Input Power	CW, without damage	dBm	+12		
Output Power (P1dB)	1 dB compression point @ 4 GHz	dBm	29	31	
Noise Figure	Above 500 MHz	dB		3.2	5
RF Input Impedance	Reference to 50 ohms VSWR			1.8:1	2.4:1
RF Output Impedance	Reference to 50 ohms			1:8:1	2.3:1
EMI Leakage	DC supply pin to RFout	dBc	-70		
Supply Voltage Positive:		V		+15	
Supply Current Positive:		mA		550	600

Notes:

1/ Unconditional Stability

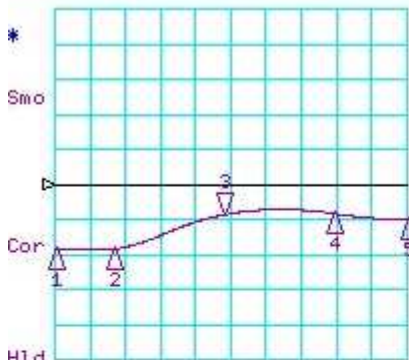
High EMI shielding

Measured NF has standard (Agilent/HP equipment) uncertainty of 0.15 dB

Customized configurations of the above specifications are available

# Typical S-Parameters @ 25C

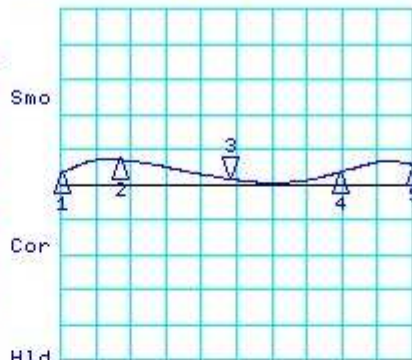
CH1 LOG 10 dB/ REF 0 dB  
S11 3:-8.6620 dB 4.999 040 000 GHz



CH1 Markers  
1:-18.344 dB  
400.000 MHz  
2:-18.461 dB  
2.00000 GHz  
4:-8.2550 dB  
8.00000 GHz  
5:-10.089 dB  
10.0000 GHz

H1d  
START 400.000 MHz STOP10000.000 MHz

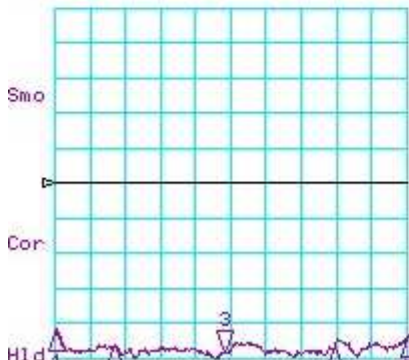
CH2 LOG 10 dB/ REF 34 dB  
S21 3: 35.571 dB 4.999 040 000 GHz



CH2 Markers  
1: 37.488 dB  
400.000 MHz  
2: 41.065 dB  
2.00000 GHz  
4: 37.507 dB  
8.00000 GHz  
5: 39.761 dB  
10.0000 GHz

H1d  
START 400.000 MHz STOP10000.000 MHz

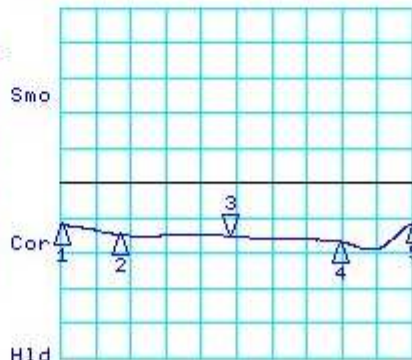
CH3 LOG 10 dB/ REF -10 dB  
S12 3:-58.358 dB 4.999 040 000 GHz



CH3 Markers  
1:-52.130 dB  
400.000 MHz  
2:-56.799 dB  
2.00000 GHz  
4:-57.262 dB  
8.00000 GHz  
5:-54.005 dB  
10.0000 GHz

H1d  
START 400.000 MHz STOP10000.000 MHz

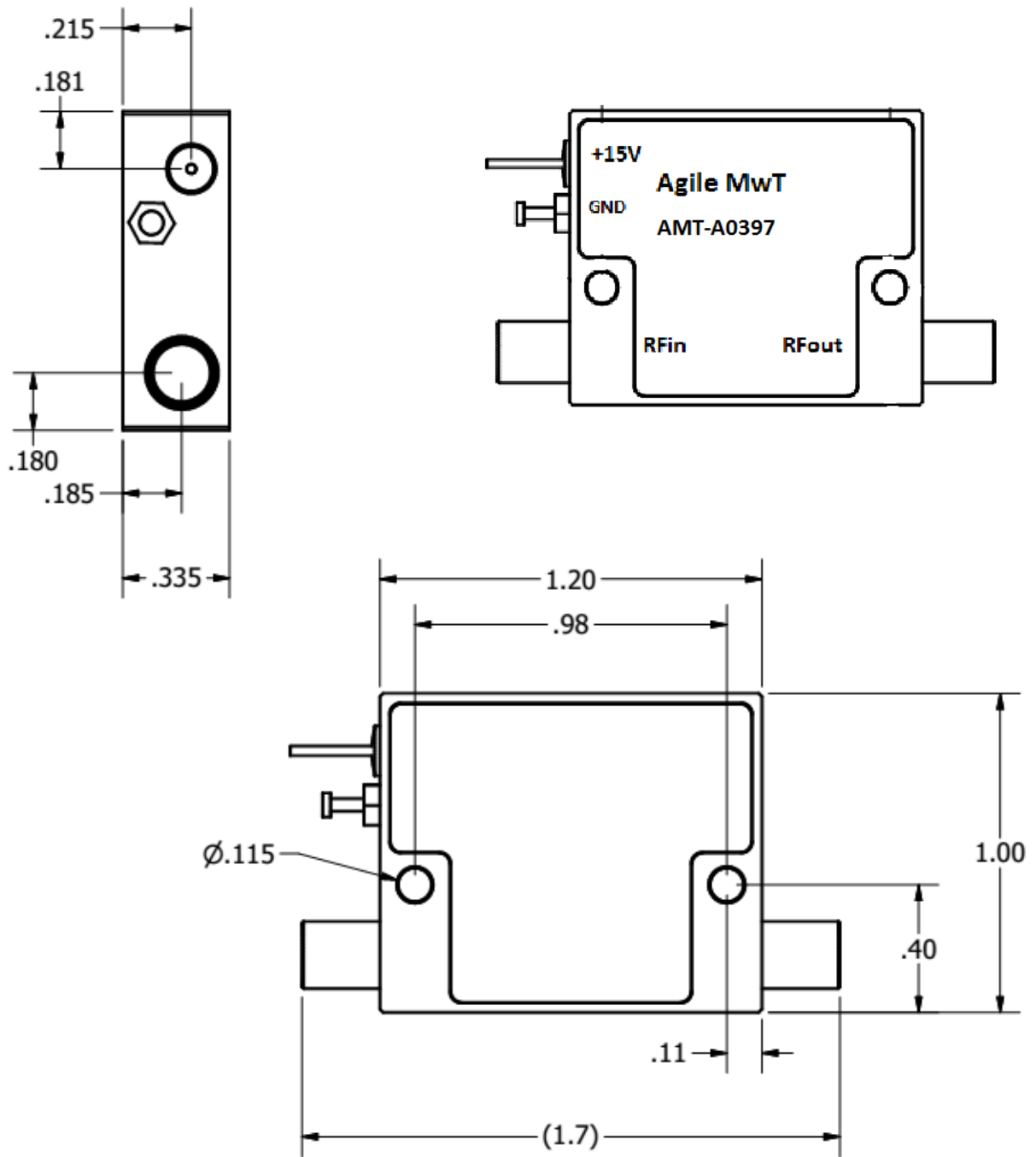
CH4 LOG 10 dB/ REF 0 dB  
S22 3:-15.160 dB 4.999 040 000 GHz



CH4 Markers  
1:-11.942 dB  
400.000 MHz  
2:-14.724 dB  
2.00000 GHz  
4:-16.643 dB  
8.00000 GHz  
5:-11.451 dB  
10.0000 GHz

H1d  
START 400.000 MHz STOP10000.000 MHz

**Package Outline: SMA-F Connectorized (Inches)**



<b>Model Number</b>	<b>Description</b>	<b>Hermeticity</b>	<b>Package</b>
AMT-A0397	SMA Female Non-removable	Non-Hermetic	Outline: M131

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.

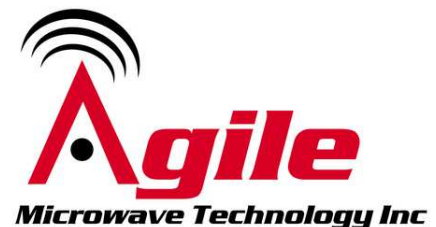
- Add additional functionality: Input limiter, Temperature compensation, Amplitude/Phase matching, Amplitude/Phase Tracking, Automatic Gain control, Gain sloping, Bypass path, Specific supply voltage, Regulation, Power detector, Health status, and others
- Integrated: Filters, Switches, Limiter, Digital 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.

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Certified Company**



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