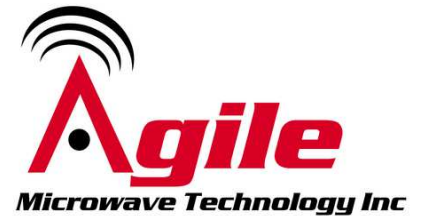


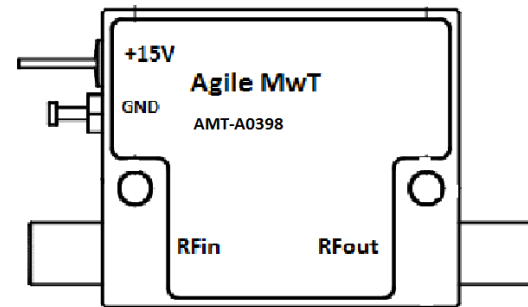
# AMT-A0398 0.4 GHz to 10 GHz 10 dB Positive Slope, P1dB 24 dBm Amplifier

Data Sheet



## Features

- 0.4 GHz to 10 GHz Frequency Range
- Gain 20 dB at 0.4 GHz, 30 dB at 10 GHz typical
- Gain Flatness <math>\pm 1.5\text{ dB}</math> typ  $\pm 2.5\text{ dB}</math> max$
- Typical Noise Figure <math>< 4\text{ dB}</math> , 7 dB max
- +24 dBm P1dB Typical
- Internally Regulated
- High EMI performance  
DC to RF leakage  $-90\text{ dBc}</math> typ  $-70\text{ dBc}</math> max$$
- Operates from a Single +15V Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology



## Description

The AMT-A0398 is a Broadband Low Noise amplifier with positive gain slope and low EMI leakage 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-A0398 is ideal for use in communication system, or where gain compensation is required without adding excessive noise in a Hi-Rel communications

## Applications

### Gain Compensation

- Communication systems
- Test Equipment
- Point to Point Radios

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

**Do NOT apply DC to RF Input**

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	$T_{MO}$	$^{\circ}\text{C}$	-40	+85
Storage Temperature - Case	$T_{MS}$	$^{\circ}\text{C}$	-54	+95
RF Input power (CW)	$P_{in}$	dBm		+12
Die $T_{Junction}$	$T_J$	$^{\circ}\text{C}$		+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 @ 400 MHz	Small Signal	dB	20	21	24
Gain @ 10 GHz	Small Signal	dB	30	33	34
Gain Flatness		dB		±1.5	±2.7
Input Power	CW, without damage	dBm	+12		
Output Power (P1dB)	1 dB compression point @ 6 GHz	dBm	20	24	
Noise Figure		dB		4	7
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		180	250

Notes:  
1/  
Un-

conditional Stability

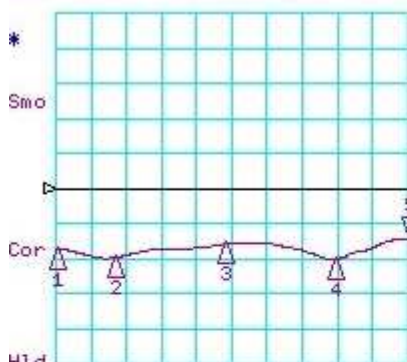
High EMI shielding

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

Customized configurations of the above specifications are available

# Typical S-Parameters @ 25C

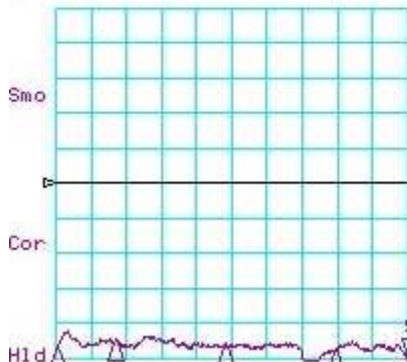
CH1 LOG 10 dB/ REF 0 dB  
S11 5:-14.369 dB 10.000 000 000 GHz



CH1 Markers  
1:-17.278 dB  
400.000 MHz  
2:-19.727 dB  
2.00000 GHz  
3:-15.865 dB  
5.00000 GHz  
4:-20.274 dB  
8.00000 GHz

START 400.000 MHz STOP10000.000 MHz

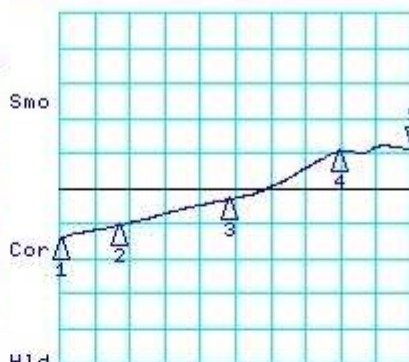
CH3 LOG 10 dB/ REF -10 dB  
S12 5:-60.687 dB 10.000 000 000 GHz



CH3 Markers  
1:-57.141 dB  
400.000 MHz  
2:-55.080 dB  
2.00000 GHz  
3:-56.032 dB  
5.00000 GHz  
4:-57.862 dB  
8.00000 GHz

START 400.000 MHz STOP10000.000 MHz

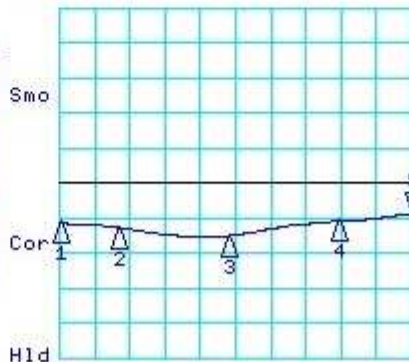
CH2 LOG 5 dB/ REF 20 dB  
S21 5: 33.693 dB 10.000 000 000 GHz



CH2 Markers  
1: 20.744 dB  
400.000 MHz  
2: 22.732 dB  
2.00000 GHz  
3: 26.416 dB  
5.00000 GHz  
4: 33.232 dB  
8.00000 GHz

START 400.000 MHz STOP10000.000 MHz

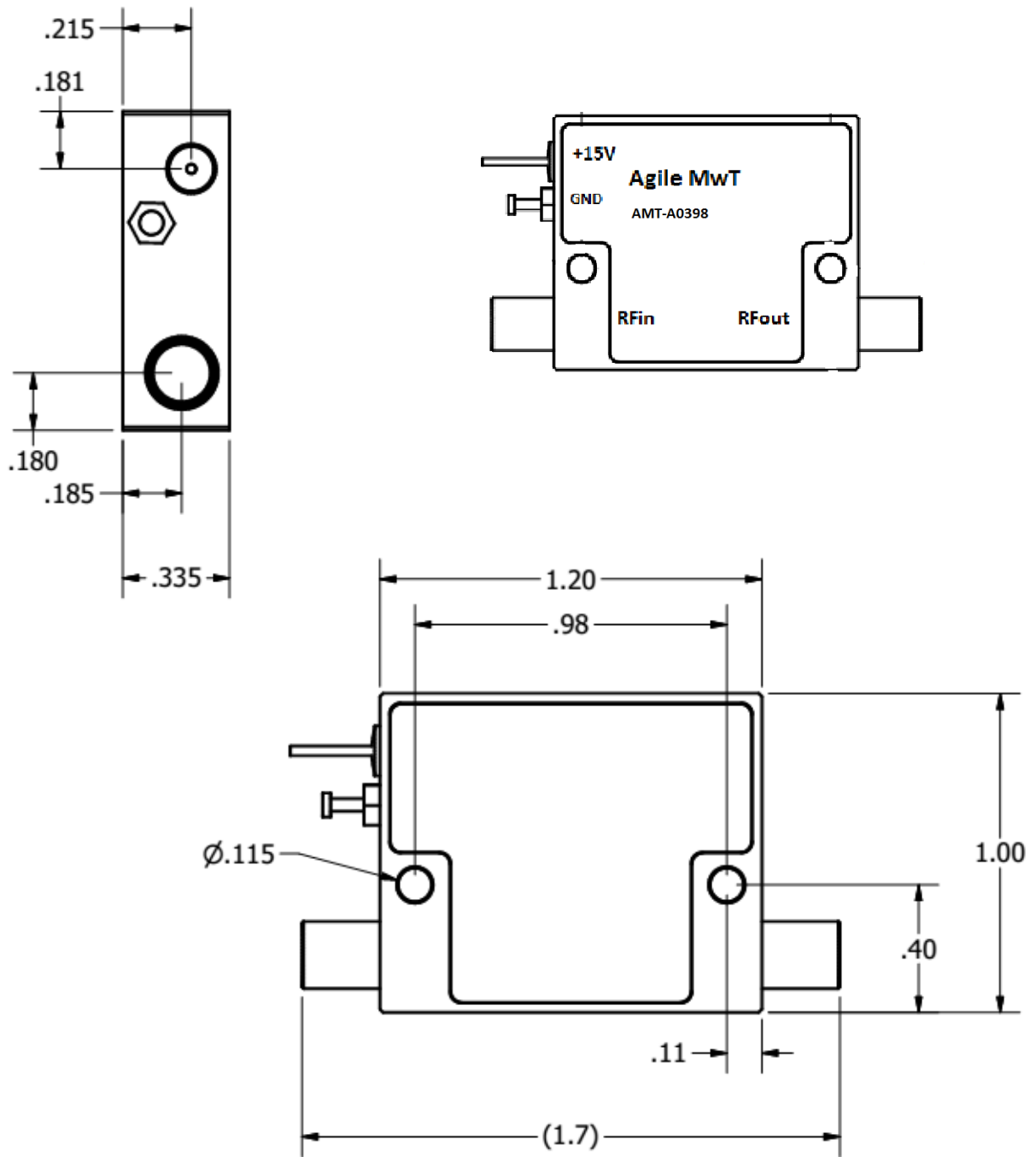
CH4 LOG 10 dB/ REF 0 dB  
S22 5:-8.7800 dB 10.000 000 000 GHz



CH4 Markers  
1:-11.469 dB  
400.000 MHz  
2:-12.700 dB  
2.00000 GHz  
3:-15.049 dB  
5.00000 GHz  
4:-10.932 dB  
8.00000 GHz

START 400.000 MHz STOP10000.000 MHz

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



Model Number	Description	Hermeticity	Package
AMT-A0398	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.

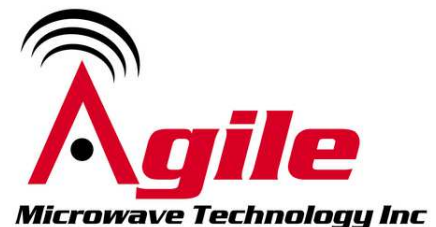
- Add additional functionality: Input limiter, Temperature compensation, Amplitude/Phase matching, Amplitude/Phase Tracking, Automatic Gain control, Gain sloping, Bypass path, Specific supply voltage, Regulation, Power detector, Health status, and others
- Integrated: Filters, Switches, Limiter, Digital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