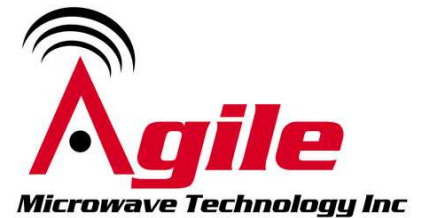


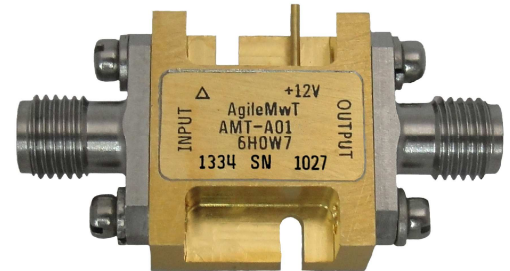
# AMT-A0162 14 GHz to 18 GHz Medium Power Amplifier

## Data Sheet



## Features

- 14 GHz to 18 GHz Frequency Range
- Typical P1dB > +20 dBm
- Typical Gain 26 dB
- Gain Flatness <  $\pm 0.6$  dB Typical
- Typical Noise Figure < 4.5 dB
- Internally Regulated
- Operates from a Single +10 to +12V Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology



## Description

The AMT-A0162 is a Broadband Medium Power amplifier with P1dB of greater than +20 dBm 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-A0162 is ideal for use as gain block of receiver system, or where amplification is required with broadband power in a Hi-Rel communications system for Commercial or Military applications

## Applications

- Radar
- Communication systems
- Microwave Radio systems
- Test Equipment

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

| Parameter                    | Symbol           | Units | MIN | MAX  |
|------------------------------|------------------|-------|-----|------|
| Operating Temperature – Case | T <sub>MO</sub>  | ° C   | -0  | +75  |
| Storage Temperature - Case   | T <sub>MS</sub>  | ° C   | -40 | +125 |
| RF Input power (CW)          | P <sub>in</sub>  | dBm   |     | +20  |
| Die T <sub>Junction</sub>    | T <sub>J</sub>   | ° C   |     | +150 |
| Positive Supply Voltage      | V <sub>+SS</sub> | V     |     | +15  |

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   | 14  |            | 18    |
| Gain                     | Small Signal                                  | dB    | 24  | 26         |       |
| Gain Flatness            |   | dB    |     | ±0.6       | ±1    |
| Gain vs Temp Stability   | At given Frequency from 0C to +75C            | dBpp  |     |            | 3.5   |
| Output Power (P1dB)      | 1 dB compression point @ 16 GHz               | dBm   | +19 | +20        |       |
| OIP3                     | OIP3 measured@16 GHz<br>Two tone F1-F2= 10MHz | dB    |     | 29         |       |
| Noise Figure             |   | dB    |     | 4.5        | 6.5   |
| RF Input Impedance       | Reference to 50 ohms<br>VSWR                  |       |     | 1.7:1      | 2.0:1 |
| RF Output Impedance      | Reference to 50 ohms                          |       |     | 1:6:1      | 2.1:1 |
| Supply Voltage Positive: |   | V     |     | +10 to +12 |       |
| Supply Current Positive: | Small signal current                          | mA    |     | 220        | 240   |

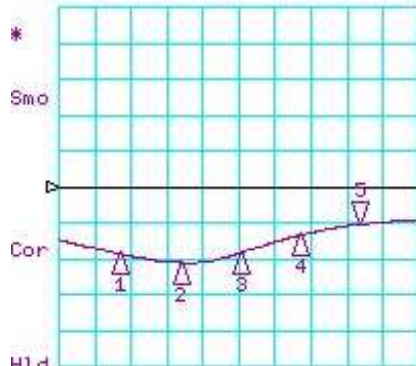
Notes:

1/ Unconditional Stability:

Customized configurations of the above specifications are available

# Typical S-Parameters @ 23°C

CH1 LOG 10 dB/ REF 0 dB  
S11 5:-10.384 dB 18.000 000 000 GHz

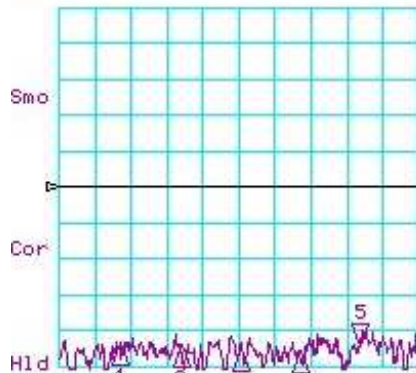


CH1 Markers

- 1:-18.549 dB  
14.0000 GHz
- 2:-20.981 dB  
15.0000 GHz
- 3:-18.326 dB  
16.0000 GHz
- 4:-13.502 dB  
17.0000 GHz

H1d  
START13000.000 MHz STOP19000.000 MHz

CH3 LOG 10 dB/ REF -10 dB  
S12 5:-54.470 dB 18.000 000 000 GHz

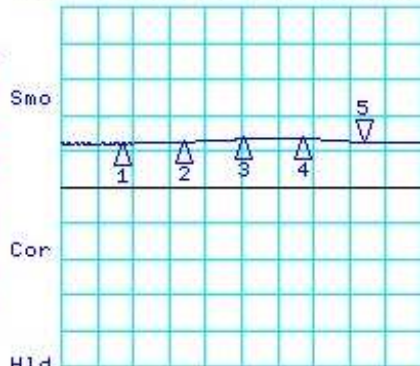


CH3 Markers

- 1:-53.686 dB  
14.0000 GHz
- 2:-54.465 dB  
15.0000 GHz
- 3:-55.660 dB  
16.0000 GHz
- 4:-55.991 dB  
17.0000 GHz

H1d  
START13000.000 MHz STOP19000.000 MHz

CH2 LOG 5 dB/ REF 20 dB  
S21 5: 26.302 dB 18.000 000 000 GHz

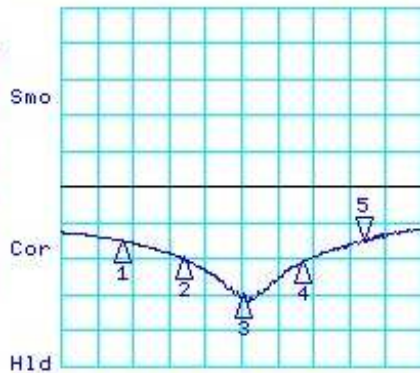


CH2 Markers

- 1: 26.024 dB  
14.0000 GHz
- 2: 26.274 dB  
15.0000 GHz
- 3: 26.647 dB  
16.0000 GHz
- 4: 26.736 dB  
17.0000 GHz

H1d  
START13000.000 MHz STOP19000.000 MHz

CH4 LOG 10 dB/ REF 0 dB  
S22 5:-14.802 dB 18.000 000 000 GHz

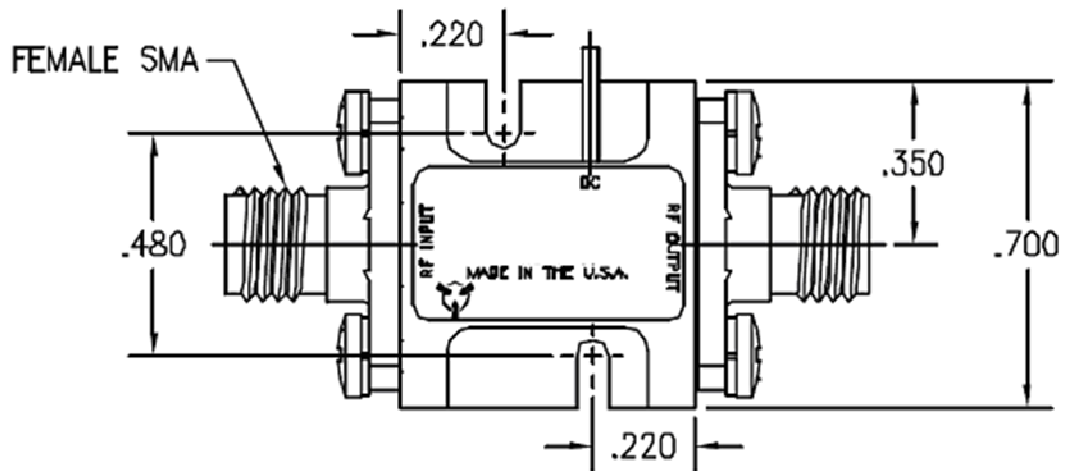
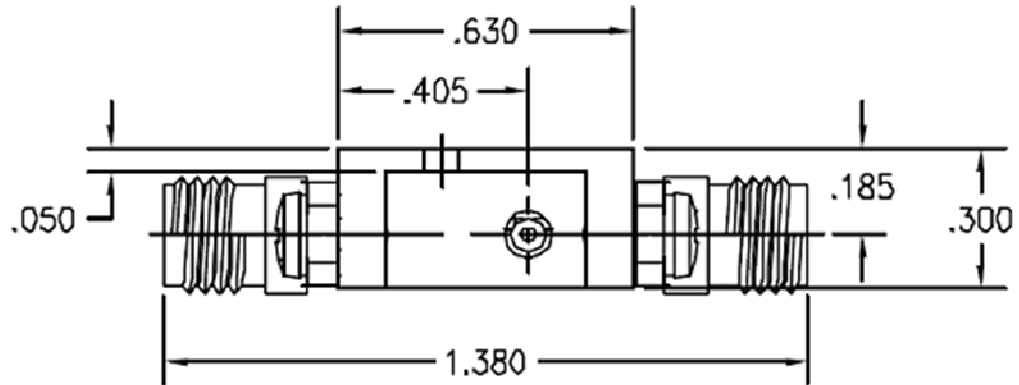


CH4 Markers

- 1:-15.022 dB  
14.0000 GHz
- 2:-20.103 dB  
15.0000 GHz
- 3:-30.806 dB  
16.0000 GHz
- 4:-21.153 dB  
17.0000 GHz

H1d  
START13000.000 MHz STOP19000.000 MHz

**Package Outline: M004 SMA Connectorized (inches)**



| <b>Model Number</b> | <b>Description</b> | <b>Hermeticity</b> | <b>Package</b> |
|---------------------|--------------------|--------------------|----------------|
| AMT-A0162           | SMA Female         | Non-Hermetic       | Outline: M004  |

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.

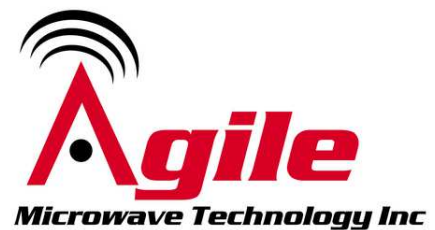
## Contact Information:

**101 Bloomingdale Road  
Hicksville, NY 11801**

**Phone: (516) 931-1760**

**Fax: (212) 374-1153**

**[info@agilemwt.com](mailto:info@agilemwt.com)**



**[www.agilemwt.com](http://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 product and no patent licenses are implied. AMTI reserves all rights.