# AMT-A0416 33.5 GHz to 35.5 GHz
## Matched Low Noise Amplifier

Data Sheet

# Features

- 33.5 GHz to 35.5 GHz Frequency Range
- Gain 27 dB Typical , Gain window 23 to 29 dB
- Gain Flatness ± 1 dB typ ± 2 dB max
- 2.9 dB Typical Noise Figure
- VSWR 1.8:1 typical
- OIP3 +20 dBm minimum
- Internally Regulated
- Operates from Single +12V Supply
- Unconditionally Stable
- Compact Housing

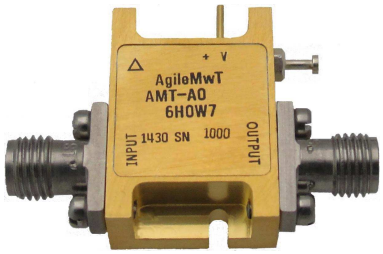


Photo for Illustration only

# Description

The AMT-A0416 is a Broadband amplifier with flat gain, low NF in a compact size and gain matched to golden unit. The performance is achieved through the use of AMTI's proprietary matching technology and latest in GaAs technology. The amplifier I/Os are Internally matched to 50 Ohms and DC Blocked. The AMT-A0416 is ideal for use as gain stage with low noise for test equipment, Communication systems or where ultra broadband amplification and power are required without adding significant noise in a Hi-Rel communications system for Commercial or Military applications

# Applications

- Test Equipment
- Receiver
- Lab Applications
- Wideband Gain Block

### MAXIMUM RATINGS[1]

| Parameter | Symbol | Units | MIN | MAX |
|---|---|---|---|---|
| Operating Temperature – Case | $T_{MO}$ | ° C | -20 | +85 |
| Storage Temperature - Case | $T_{MS}$ | ° C | -40 | +125 |
| RF Input power (CW) | Pin | dBm | | +15 |
| Die $T_{Junction}$ | $T_J$ | ° C | | +150 |
| Positive Supply Voltage | $V_{+SS}$ | V | | +15 |

**Appropriate Heat sink must be used**

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.

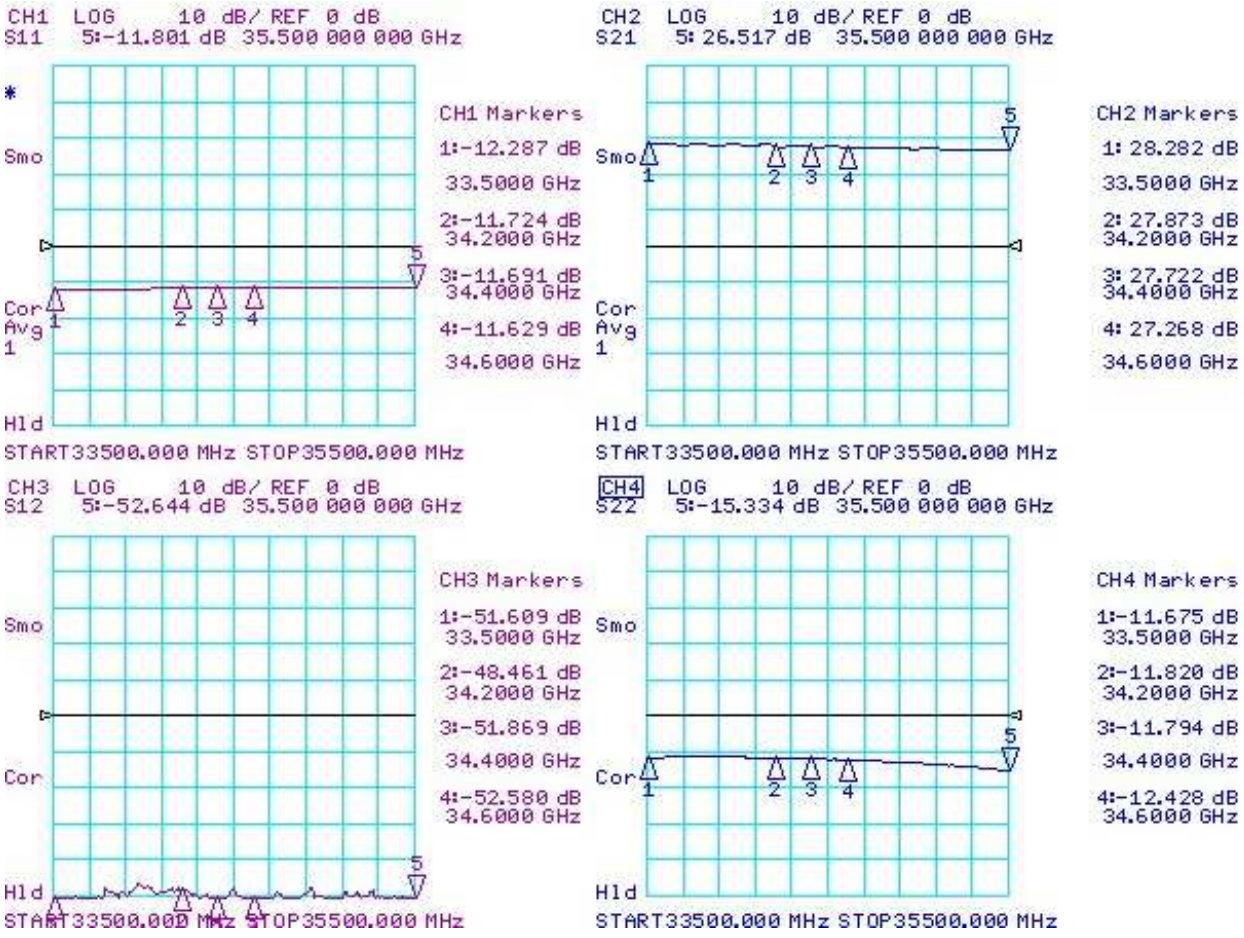
## ELECTRICAL SPECIFICATIONS @ 23ºC

| Parameter | Conditions | Units | MIN | Typical | MAX |
|---|---|---|---|---|---|
| Frequency Range | | GHz | 33.5 | | 35.5 |
| Gain | Small Signal | dB | 24 | 27 | 29 |
| Gain Flatness | | dB | | ±1 | ±2 |
| Gain Matching | From Golden unit in the set Freq Range 34.2-34.6GHz | dB | -1 | | +1 |
| Noise Figure | | dB | | 2.9 | 4 |
| Output Power (P1dB) | @ 34.4 GHz | dBm | +12 | +15 | |
| OIP3 | OPI3 @ 134.4 GHz Two tone F1-F2= 10MHz | dB | +20 | | |
| RF Input Impedance | Reference to 50 ohms VSWR | | | 1.8:1 | 2.2:1 |
| RF Output Impedance | Reference to 50 ohms VSWR | | | 1.8:1 | 2.2:1 |
| Supply Voltage Positive:<br><br>Supply Current Positive: | Small signal | V<br><br>mA | | + 12<br><br>100 | <br><br>200 |

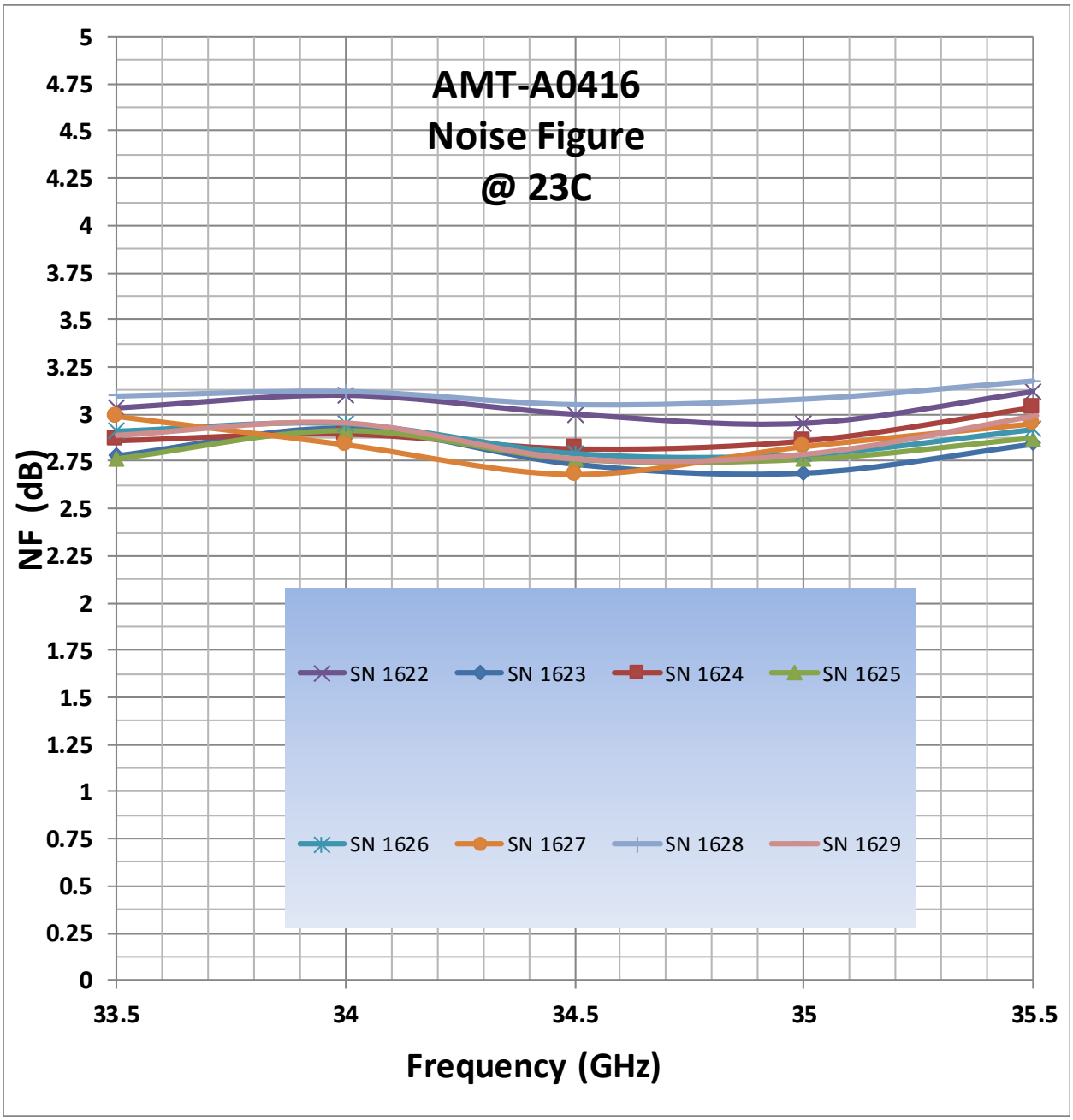
Notes:
1/ Unconditional Stability

Customized configurations of the above specifications are available

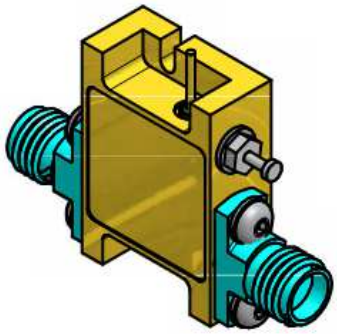
# Typical S-Parameters @ 25°C

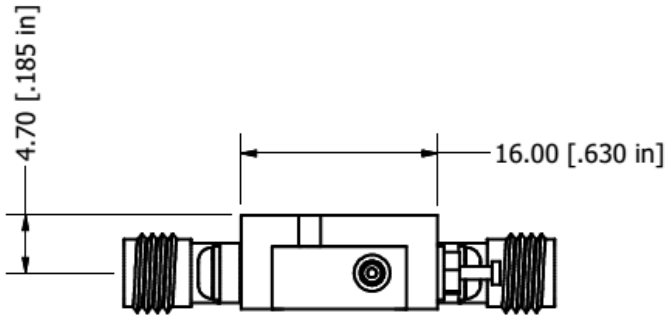


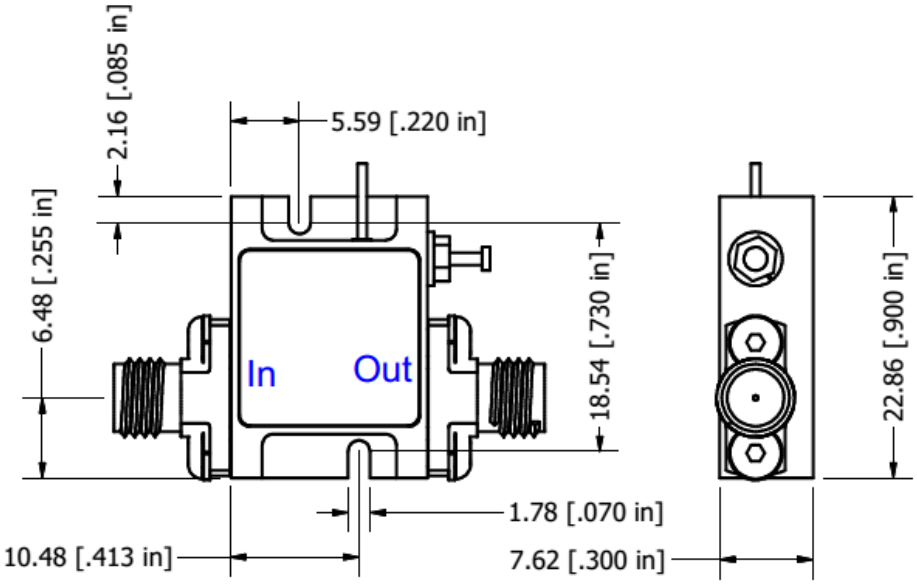
## Typical Noise Figure @ 23°C



## Package Outline M084: 2.92 mm Female Connectors (inches)






**Field replaceable SMA Connectors**
**Note: The unit must be attached to proper heat sink**

| Model Number | Description | Hermeticity | Package |
|---|---|---|---|
| AMT-A0416 | 2.92 mm Female | Non-Hermetic | Outline: M084 |

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:

**ISO 9001:2015 CERTIFIED**

**701 Cascade Pointe Lane**
**Cary, NC 27513**
**Phone: (984) 228-8001** **info@agilemwt.com** **www.agilemwt.com**

Agile Microwave Technology Inc