

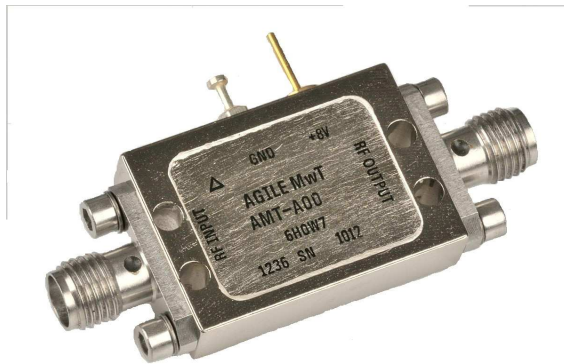
AMT-A0029 1000 MHz to 6000 MHz Broadband Low Noise Amplifier

Data Sheet



Features

- 1000 MHz to 6000 MHz Frequency Range
- Typical Noise Figure < 1.2 dB
- Gain 28 dB Typical
- Gain Flatness < ± 0.7 dB
- Internally matched
- Internal DC Regulator
- Operates from a Single +8V Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology
- Excellent Value



Description

The AMT-A0029 is a Broadband 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 and are DC blocked. The AMT-A0029 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,
- Communication systems
- Microwave Radio systems
- Test Equipment

MAXIMUM RATINGS¹

| Parameter | Symbol | Units | MIN | MAX |
|------------------------------|-----------|-------------|-----|------|
| Operating Temperature – Case | T_{MO} | $^{\circ}C$ | -40 | +85 |
| Storage Temperature - Case | T_{MS} | $^{\circ}C$ | -40 | +125 |
| RF Input power (CW) | Pin | dBm | | +8 |
| Die $T_{Junction}$ | T_J | $^{\circ}C$ | | +150 |
| Positive Supply Voltage | V_{+SS} | V | | +15 |

¹Stresses 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 | | MHz | 1000 | | 6000 |
| Gain | Small Signal | dB | 25 | 29 | |
| Gain Flatness | | dB | | ±0.7 | ±1.5 |
| Output Power (P1dB) | 1 dB compression point @2 GHz | dBm | +7 | +10 | |
| OIP3 | OPI3 measured @ 3 GHz Two tone F1-F2= 10MHz | dB | 17 | 19 | |
| Noise Figure | | dB | | 1.2 | 1.5 |
| RF Input Impedance | Reference to 50 ohms VSWR | | | 1.6:1 | 2.2:1 |
| RF Output Impedance | Reference to 50 ohms | | | 1:5:1 | 1.8:1 |
| Stability Factor K | Unconditionally Stable | | >1 | | |
| Stability Factor B1 | Unconditionally Stable | | >0 | | |
| Supply Voltage Positive: | | V | | +8V to +12V | |
| Supply Current Positive: | | mA | | 57 | 75 |

Notes:

1/ Unconditional Stability: ($K > 1$) and ($B1 > 0$)

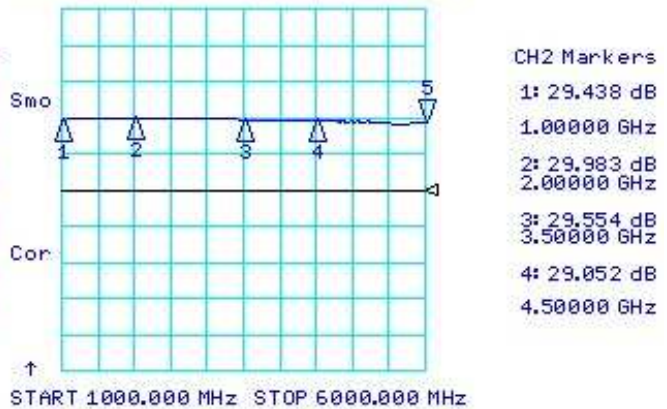
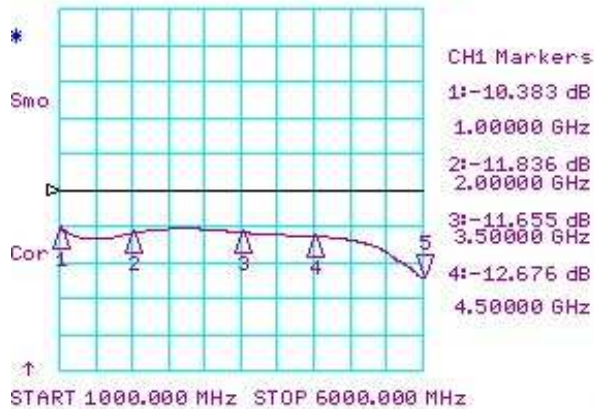
Customized configurations of the above specifications are available

Typical S-Parameters @ 23°C

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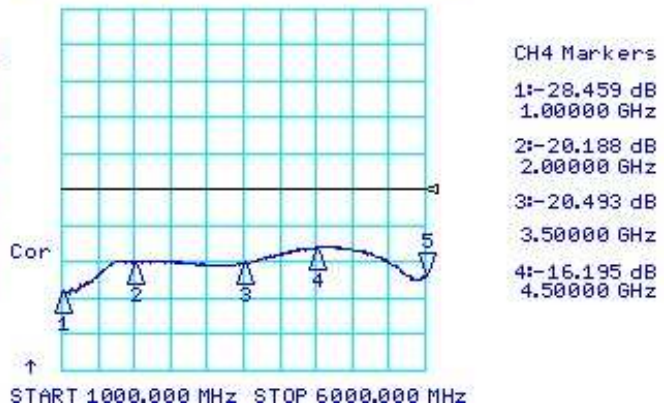
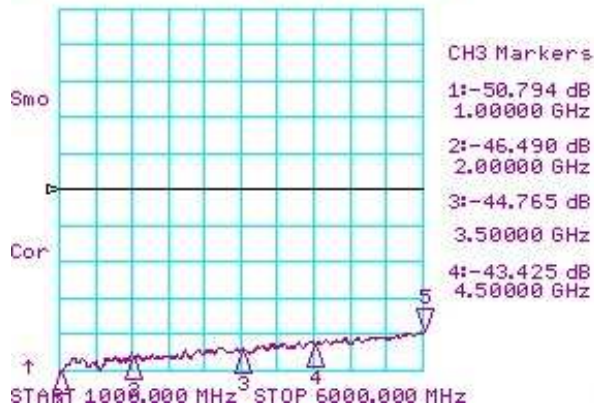
CH1 LOG 10 dB/ REF 0 dB
S11 5: -24.338 dB 6.000 000 000 GHz

CH2 LOG 10 dB/ REF 10 dB
S21 5: 28.791 dB 6.000 000 000 GHz



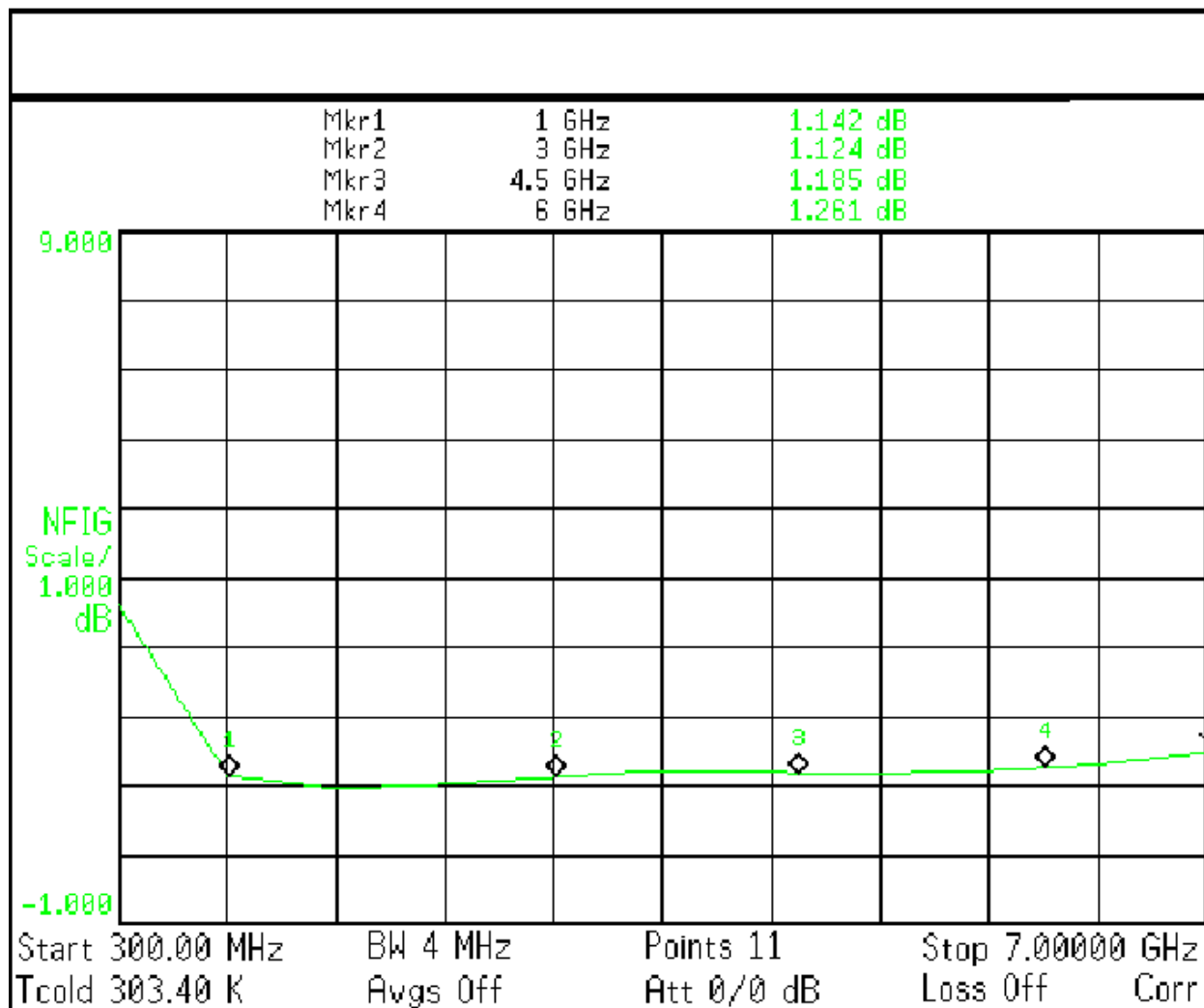
CH3 LOG 10 dB/ REF 0 dB
S12 5: -39.441 dB 6.000 000 000 GHz

CH4 LOG 10 dB/ REF 0 dB
S22 5: -23.578 dB 6.000 000 000 GHz

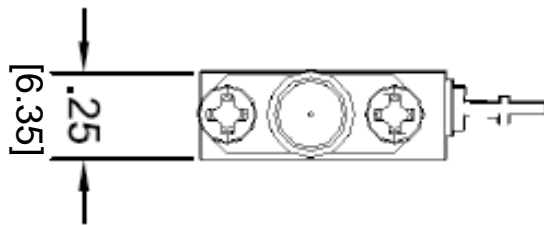
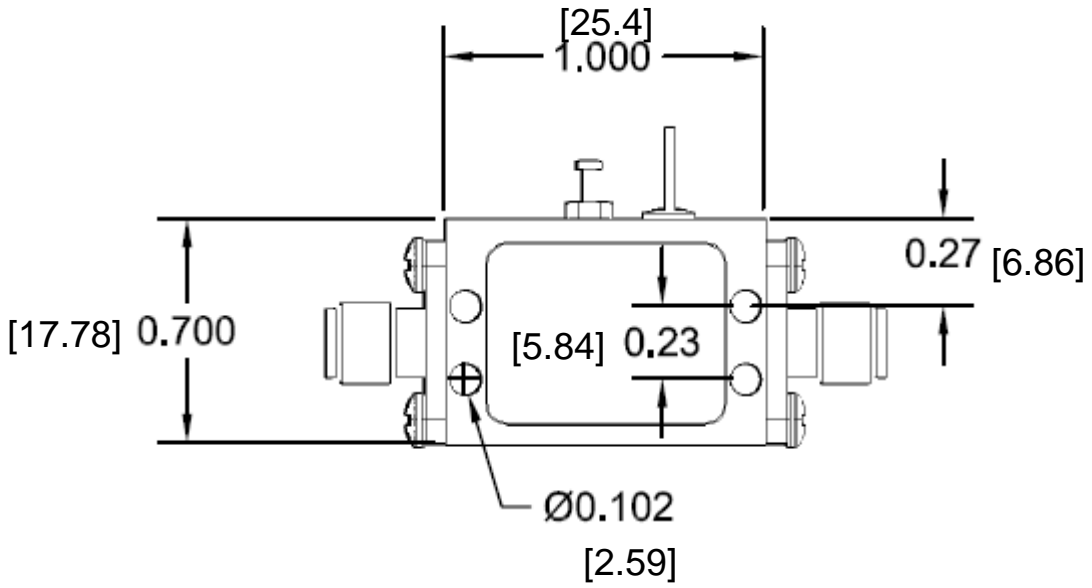


Typical Noise Figure @ 23°C

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Package Outline: SMA Connectorized inches [mm]



| Model Number | Description | Hermeticity | Package |
|---------------------|--------------------|--------------------|----------------|
| AMT-A0029 | SMA Female | Non-Hermetic | Outline: M007 |

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 www.agilemwt.com

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