

MNA Series

400-1600MHz Low Noise Amplifier

Features

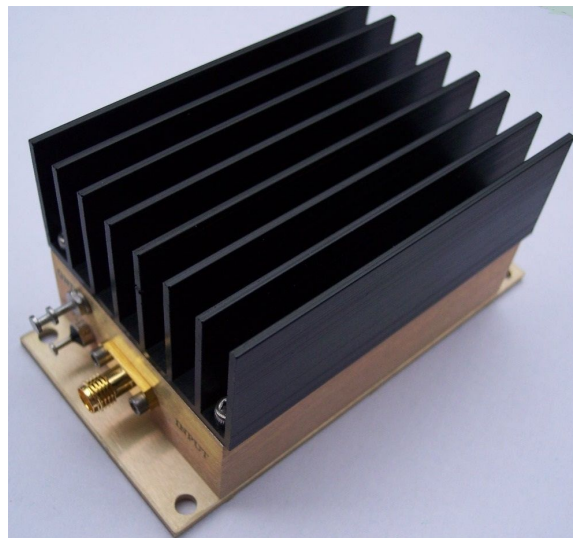
- Frequency Range: 400-1600MHz
- Gain: 35dB
- P_{1dB}: +30dBm (1Watt)
- IP3: +46dBm
- Noise Figure: 0.8dB
- DC Power: +12V to +18V
- DC Reverse Protected
- Internally Voltage Regulated
- SMA Connector

Performance measured @ 1000MHz

Description

MNA-1000 is a High Dynamic Range Low Noise Amplifier operating from single 12V to +18V DC power supply with frequency from 400MHz to 1600MHz.

Picture



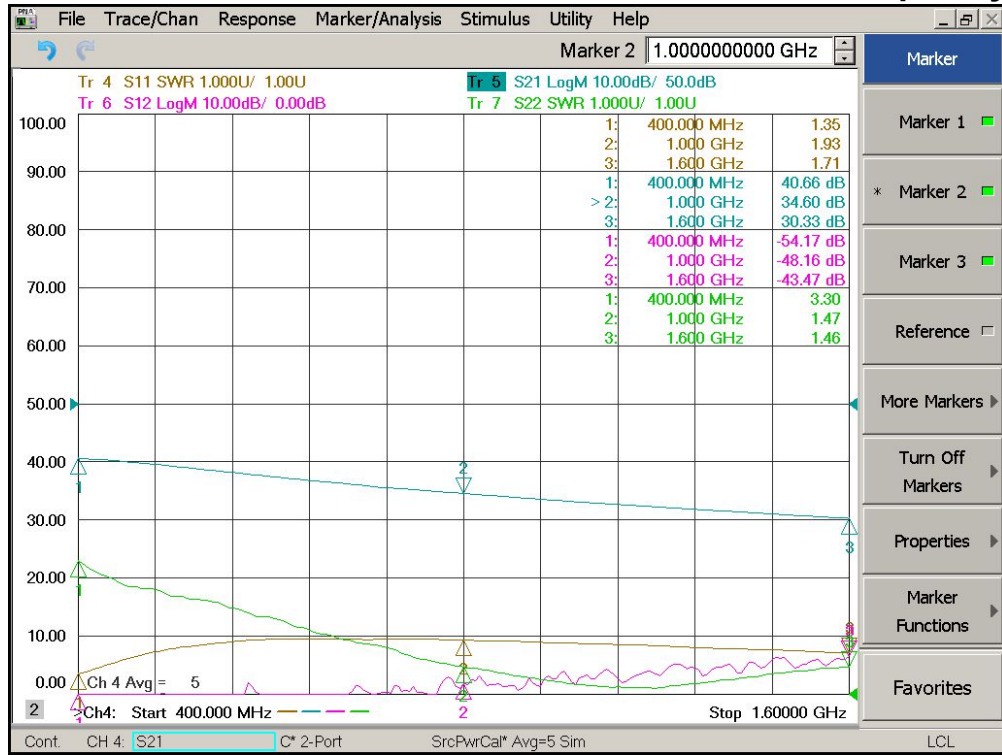
Electrical Specifications @ +25°C, Z_{IN} = Z_{OUT} = 50Ω, DC Supply = +15V

| Parameter | Unit | Minimum | Typical | Maximum |
|-----------------------------------|---|---------|---------|---------|
| Frequency Range | MHz | 400 | | 1600 |
| Small Signal Gain S ₂₁ | f = 400MHz | dB | 38 | 40 |
| | f = 1000MHz | dB | 33 | 35 |
| | f = 1600MHz | dB | 28 | 30 |
| Gain Flatness | dB | | ± 5.0 | ± 6.0 |
| Output Power P _{1dB} | f = 1000MHz | dBm | +29 | +30 |
| Output IP3 | f = 1000MHz | dBm | +43 | +46 |
| Reverse Isolation S ₁₂ | f = 1000MHz | dB | -40 | -47 |
| Noise Figure | f = 1000MHz | dB | 0.8 | 1.0 |
| VSWR | Input VSWR S ₁₁ f = 1000MHz | | 2.0:1 | 2.5:1 |
| | Output VSWR S ₂₂ f = 1000MHz | | 1.5:1 | 2.0:1 |
| DC Power Supply | V | 12 | 15 | 18 |
| DC Current | mA | | 500 | 550 |

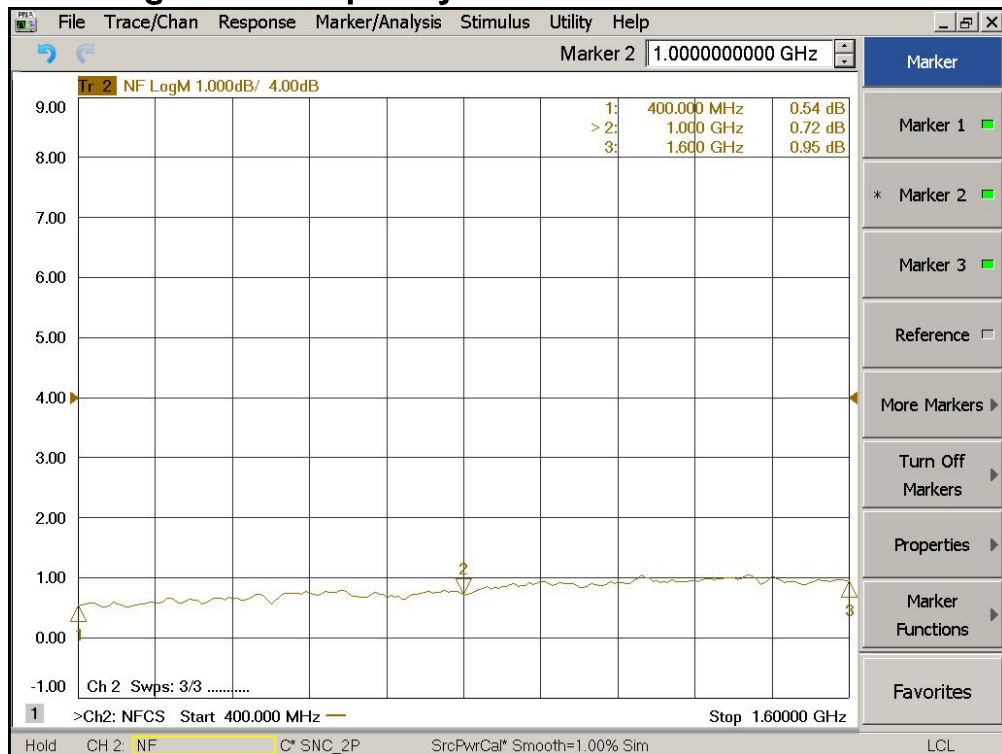
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Gain S21, Isolation S12, Return Loss S11, S22 vs Frequency



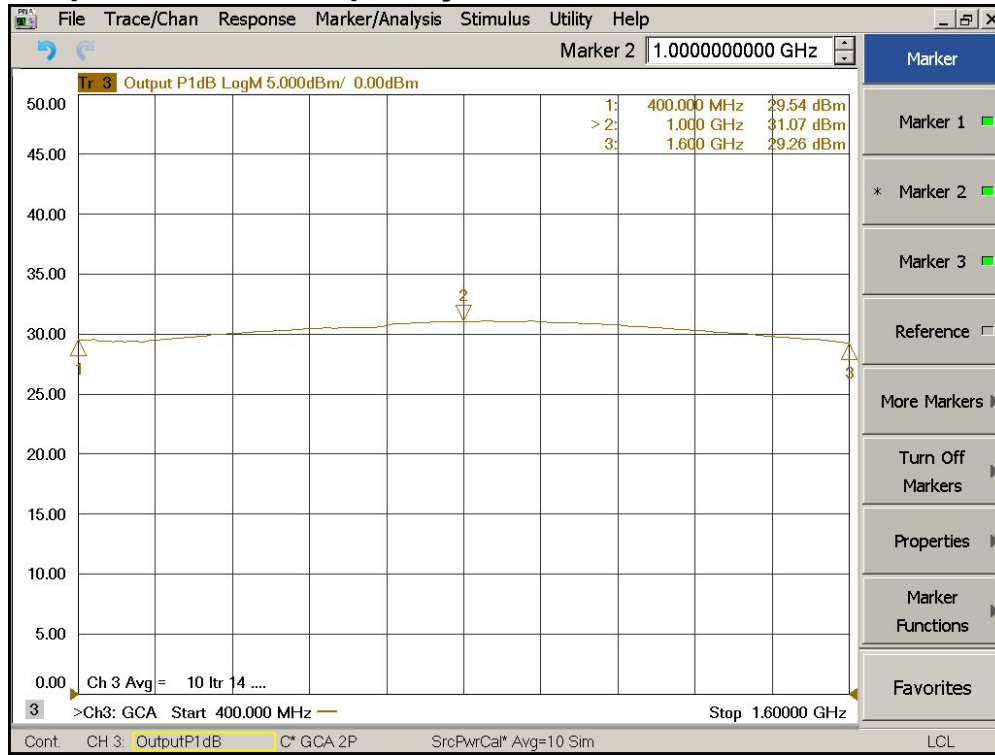
Noise Figure vs Frequency



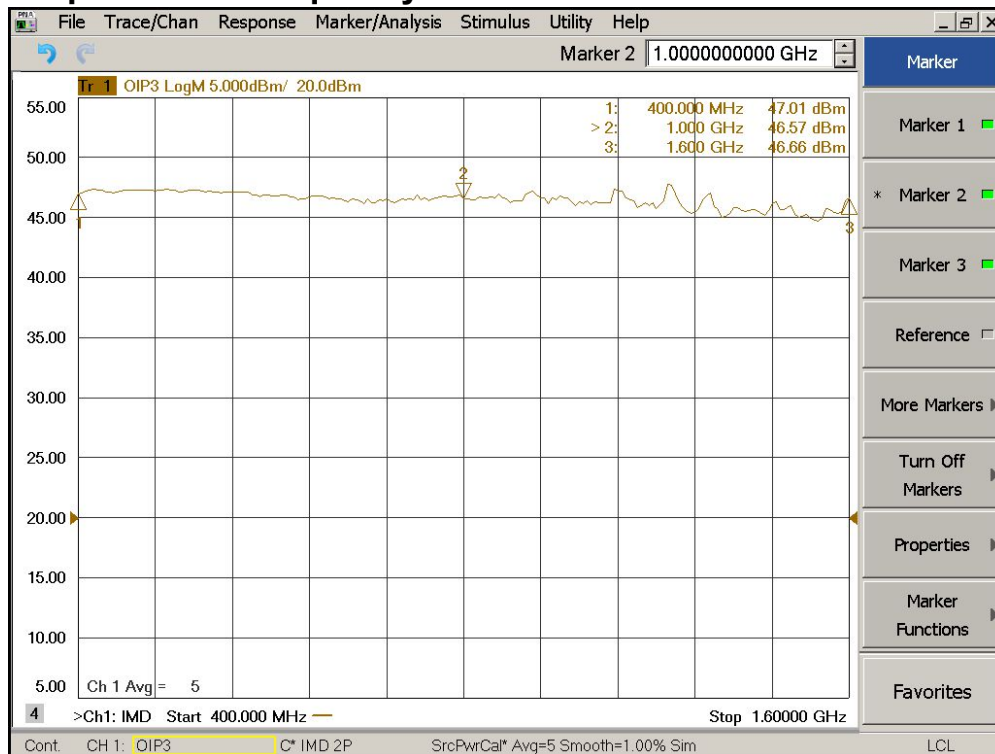
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Output P1dB vs Frequency



Output IP3 vs Frequency



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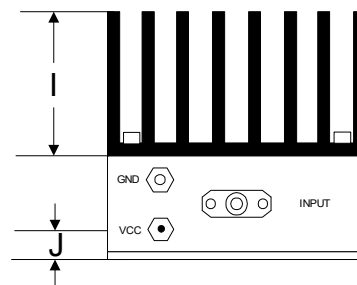
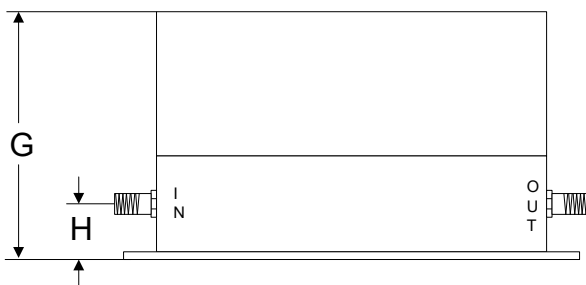
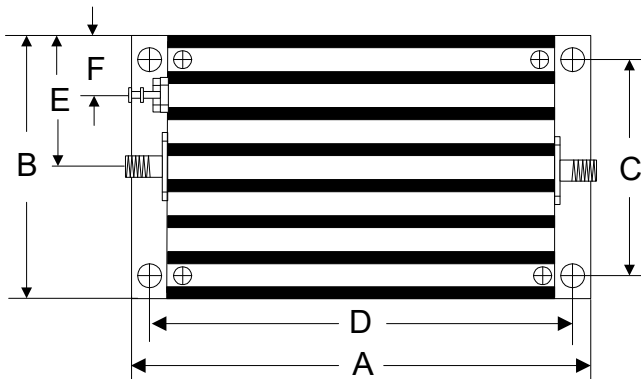
Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|-----------------------|-------------------|
| RF Input Power | +22dBm |
| DC Supply Voltage | +30V |
| Operating Temperature | -40 °C to +85 °C |
| Storage Temperature | -55 °C to +125 °C |

ESD Sensitive Material



Outline



| | A | B | C | D | E | F | G | H | I | J |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Inch | 3.750 | 2.000 | 1.750 | 3.400 | 1.000 | 0.400 | 1.813 | 0.375 | 1.000 | 0.238 |
| mm | 92.25 | 50.80 | 44.45 | 86.36 | 25.40 | 10.16 | 46.05 | 9.53 | 25.40 | 6.03 |