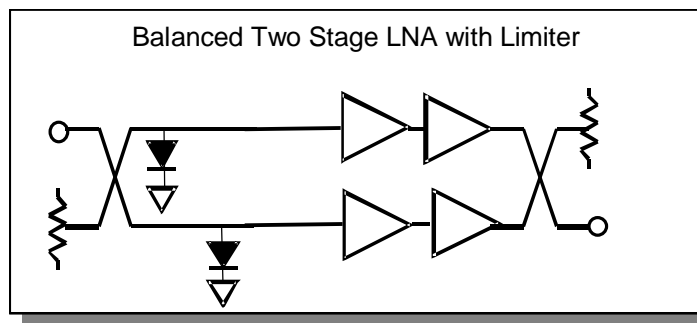


FEATURES

- 8.5 to 12 GHz Operation
- 10W CW Power Handling Capability
- 50Ω Input Impedance
- Excellent Return Loss
- Self-Aligned MSAG[®] MESFET Process



DESCRIPTION

The MA01502D is a balanced, two-stage low noise amplifier and limiter die fabricated using M/A-COM's mature GaAs Self-Aligned MSAG[®] MESFET Process. This product is fully matched to 50 ohms on both the input and the output.

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

| Rating | Symbol | Value | Unit |
|-------------------------|------------------|-------------|------|
| DC Drain Supply Voltage | V _{DD} | 8 | Vdc |
| DC Gate Supply Voltage | V _{GG} | -6 | Vdc |
| RF Input Power | P _{IN} | 15 | W |
| Junction Temperature | T _J | 150 | °C |
| Storage Temperature | T _{STG} | -40 to +150 | °C |

ELECTRICAL CHARACTERISTICS V_{DD}=5.0 V, V_{GG}=-5.0 V, T=25 °C, Input and Output Connected to 50 Ω System.

| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|------------------|-----|-----|------|------|
| Frequency Range | f | 8.5 | — | 12.0 | GHz |
| Gain | G | 13 | 14 | 18 | dB |
| 1dB Compression Point | P _{1db} | | +20 | | dBm |
| Gain Flatness (Peak-to-Peak over any 250 MHz band) | — | — | 0.4 | 1 | dB |
| Noise Figure | NF | — | 2.7 | 3.5 | dB |
| Input Third Order Intercept Point | TOI | | 13 | | dBm |
| Input and Output Return Loss | RL | 13 | 20 | — | dB |
| Drain Bias voltage | V _{DD} | — | 5 | — | VDC |
| Gate Bias Voltage | V _{GG} | | -5 | | VDC |
| Drain Supply Current (No RF) | I _{DD} | — | — | 160 | mA |
| Drain Supply Current (Max @ Pin = 10 Watts) | I _{DD} | — | — | 200 | mA |
| Gate Supply Current | I _{GG} | — | — | 30 | mA |
| Power Handling Capability (CW up to 30 minutes continuous exposure) | P _{RF} | 10 | — | — | W |



Specifications subject to change without notice.

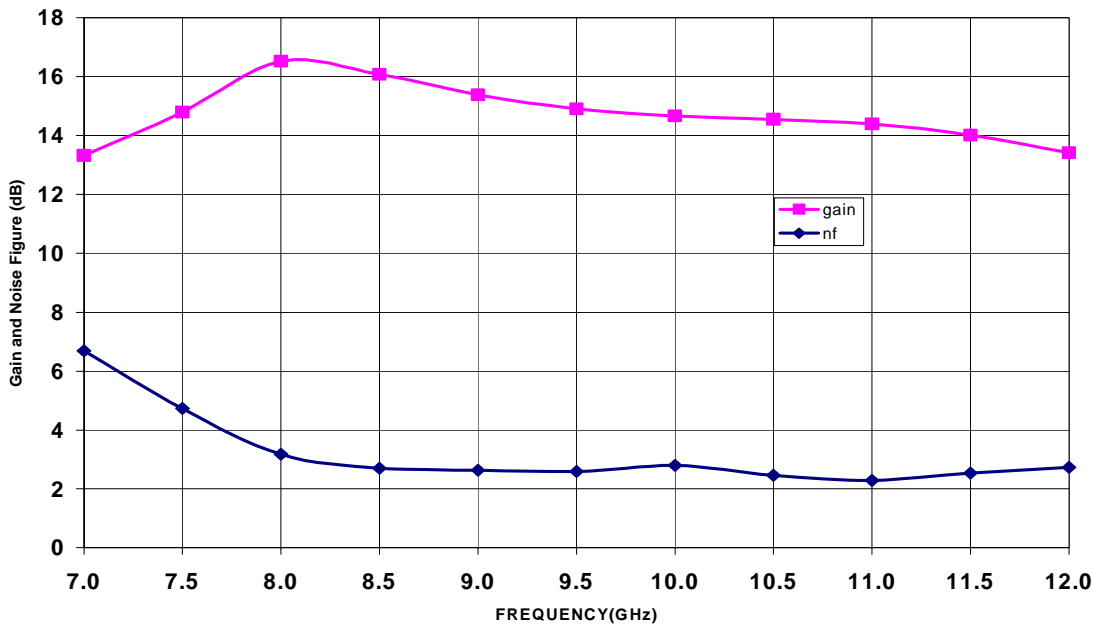
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■ **Europe:** Tel. +44 (1344) 869 595, Fax +44 (1344) 300 020

Visit www.macom.com for additional data sheets and product information

Typical Measured Gain and Noise Figure of the Two-stage Limiter/LNA



Specifications subject to change without notice.

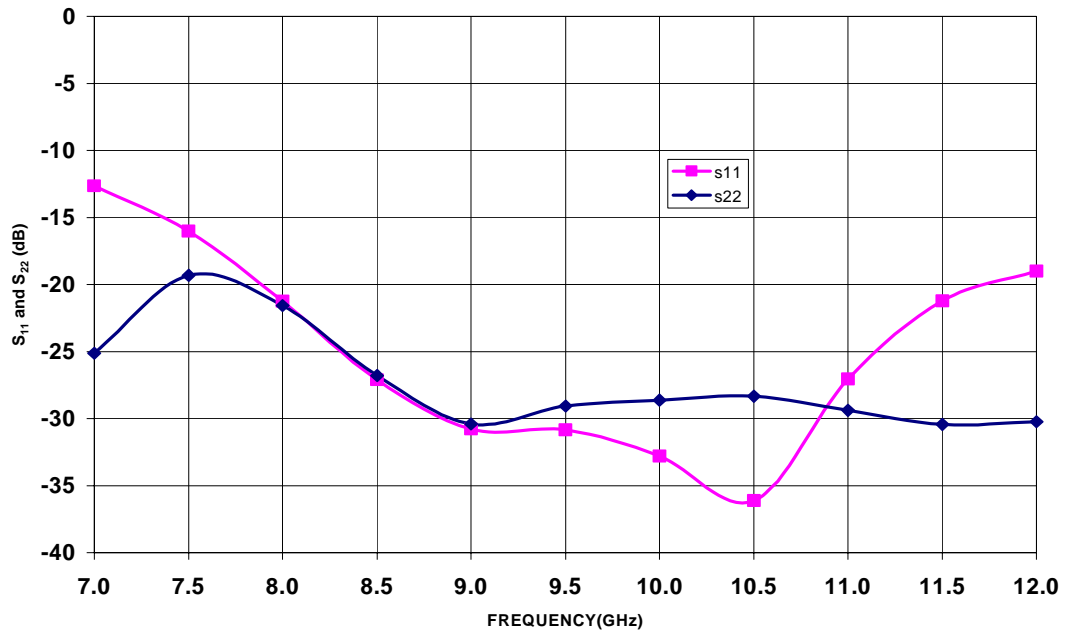
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Typical Measured S_{11} and S_{22} of the Two-stage Limiter/LNA

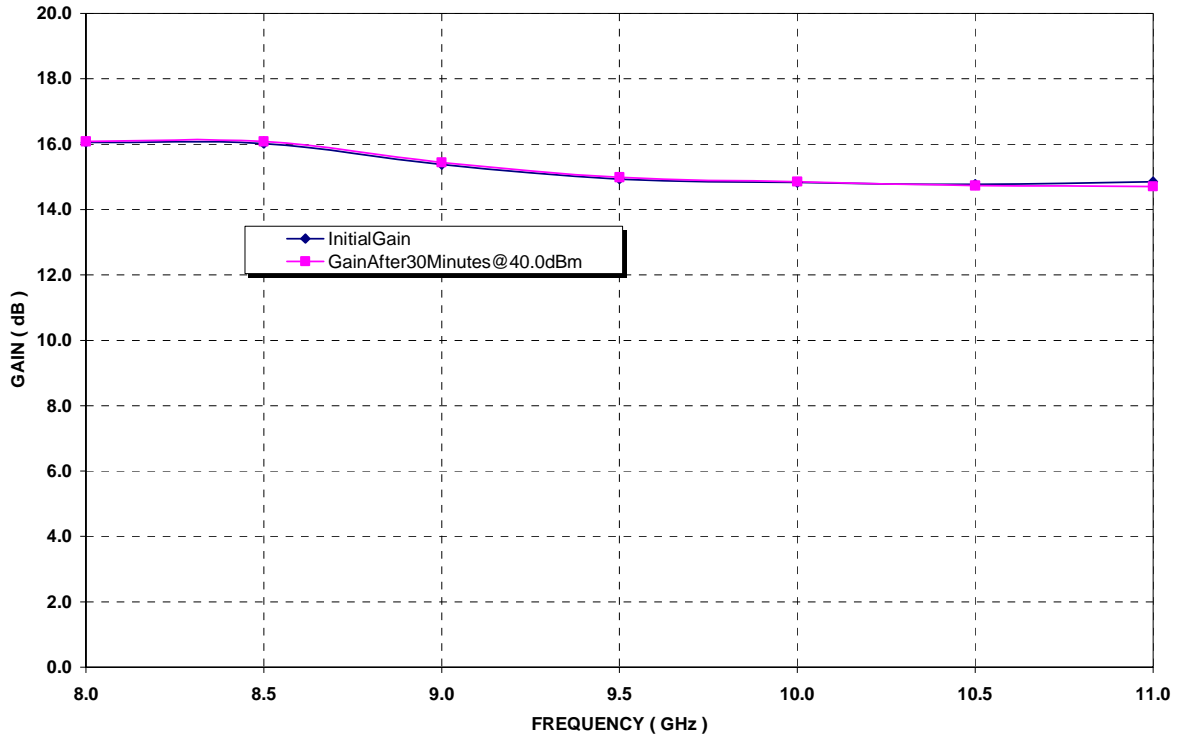


Specifications subject to change without notice.

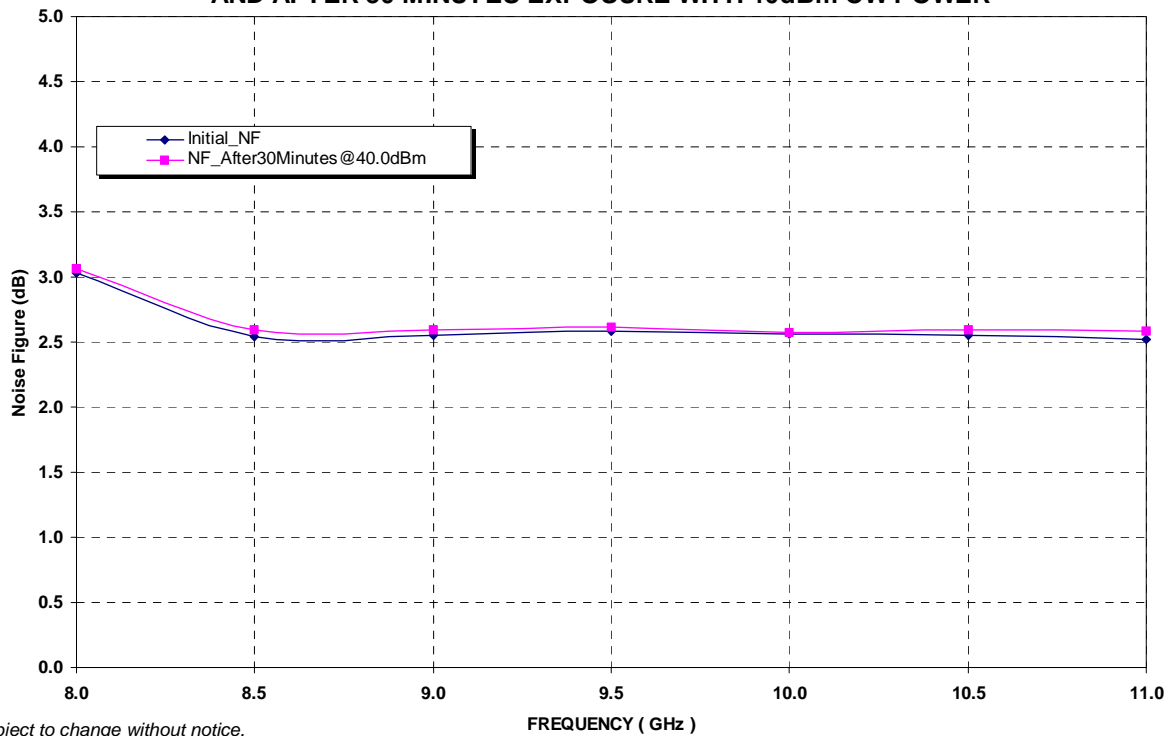
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TYPICAL MEASURED GAIN OF THE LIMITER/LNA TESTED BEFORE AND AFTER 30 MINUTES EXPOSURE WITH 40dBm CW POWER



TYPICAL MEASURED NOISE FIGURE OF THE LIMITER/LNA TESTED BEFORE AND AFTER 30 MINUTES EXPOSURE WITH 40dBm CW POWER



Specifications subject to change without notice.

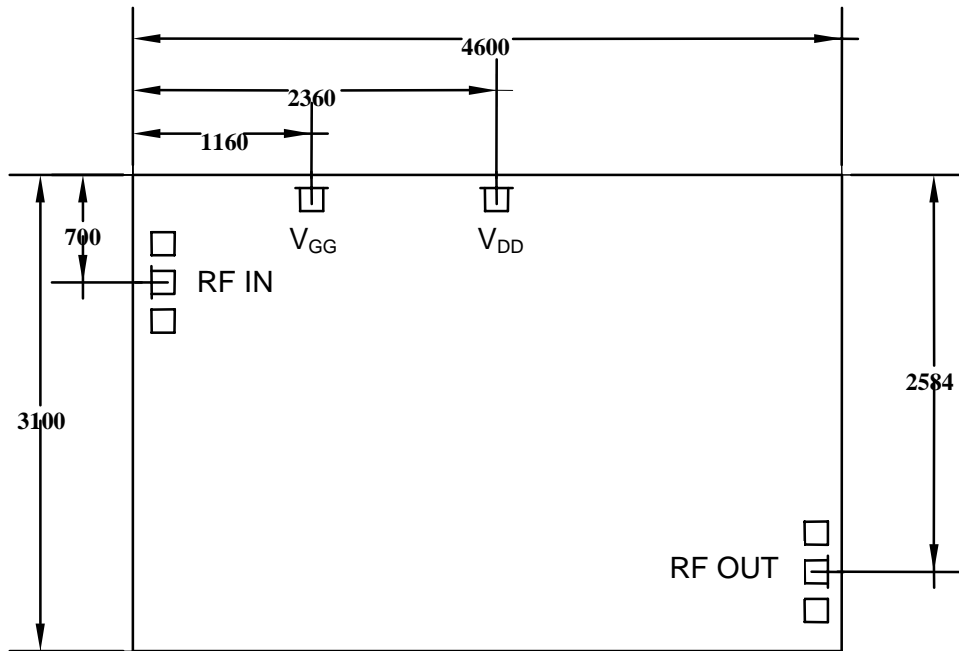
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MECHANICAL INFORMATION



NOTES:

Dimensions in microns
Pad size 150 μm x 150 μm

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