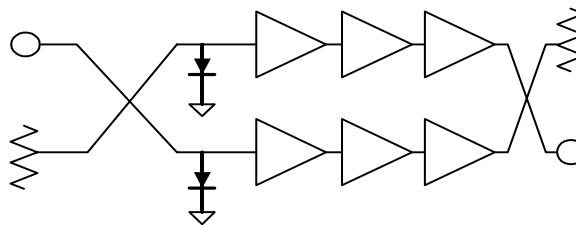


## FEATURES

- 8.5 to 12.0 GHz Operation
- 10W CW Power Handling Capability
- 50Ω Input Impedance
- Excellent Return Loss
- Self-Aligned MSAG<sup>®</sup> MESFET Process

**Balanced Three Stage LNA with Limiter**



## DESCRIPTION

The MA01503D is a balanced, three-stage low noise amplifier and limiter die fabricated using M/A-COM's mature GaAs Self-Aligned MSAG<sup>®</sup> MESFET Process. This product is fully matched to 50 ohms on both the input and the output.

## MAXIMUM RATINGS

(T<sub>A</sub> = 25 °C unless otherwise noted)

Rating	Symbol	Value	Unit
DC Drain Supply Voltage	V <sub>DD</sub>	8	Vdc
DC Gate Supply Voltage	V <sub>GG</sub>	-6	Vdc
RF Input Power	P <sub>IN</sub>	15	W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-40 to +150	°C

## ELECTRICAL CHARACTERISTICS

V<sub>DD</sub>=5.0 V, V<sub>GG</sub>=-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	17	19	23	dB
1dB Compression Point	P <sub>1db</sub>		+20		dBm
Gain Flatness (Peak-to-Peak over any 250 MHz band)	—	—	0.6	1.5	dB
Noise Figure	NF	—	2.7	3.5	dB
Input Third Order Intercept Point	TOI		8		dBm
Input and Output Return Loss	RL	13	20	—	dB
Drain Bias voltage	V <sub>DD</sub>	—	5	—	VDC
Gate Bias Voltage	V <sub>GG</sub>		-5		VDC
Drain Supply Current (No RF)	I <sub>DD</sub>	—	—	240	mA
Drain Supply Current (Max @ Pin = 10 Watts)	I <sub>DD</sub>	—	—	300	mA
Gate Supply Current	I <sub>GG</sub>	—	—	45	mA
Power Handling Capability (CW up to 30 minutes continuous exposure)	P <sub>RF</sub>	—	10	—	W



Specifications subject to change without notice.

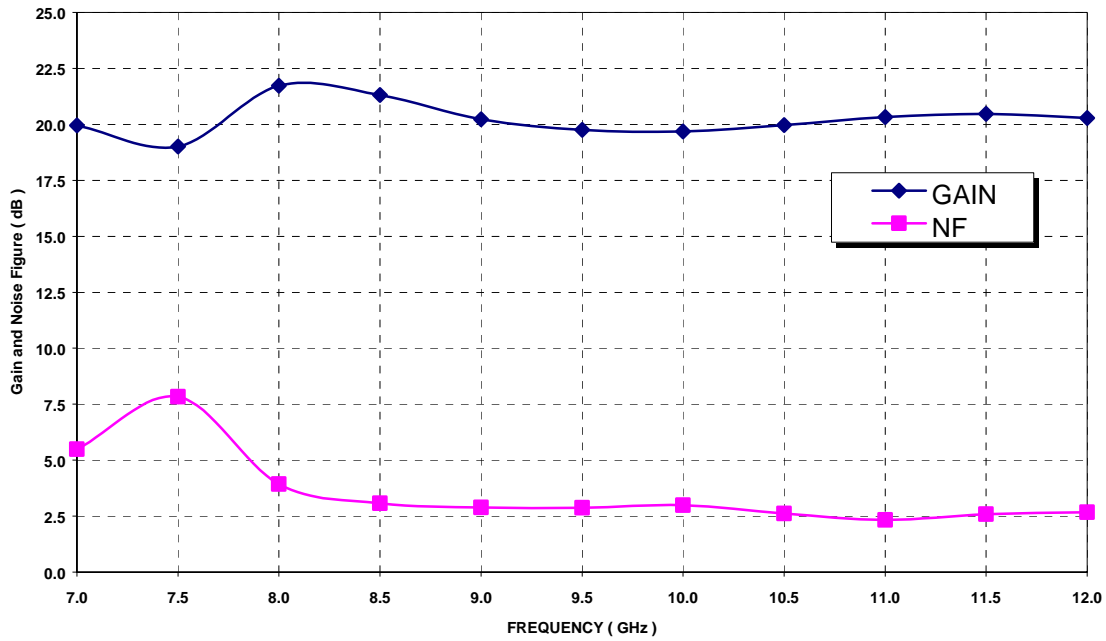
■ **North America:** Tel. (800)366-2266, Fax (800)618-8883

■ **Asia/Pacific:** Tel. +81-44-844-8296, Fax +81-44-844-8298

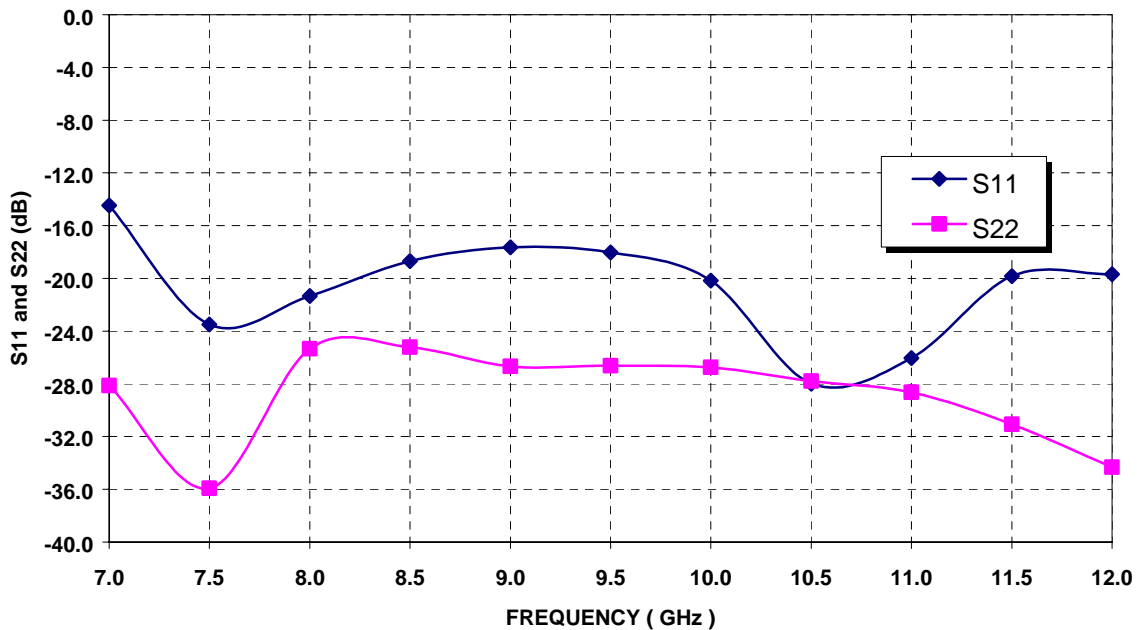
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Visit [www.macom.com](http://www.macom.com) for additional data sheets and product information

TYPICAL MEASURED GAIN AND NOISE FIGURE OF THE THREE-STAGE LIMITER/LNA



TYPICAL MEASURED S11 and S22 OF THE THREE-STAGE LIMITER/LNA



Specifications subject to change without notice.

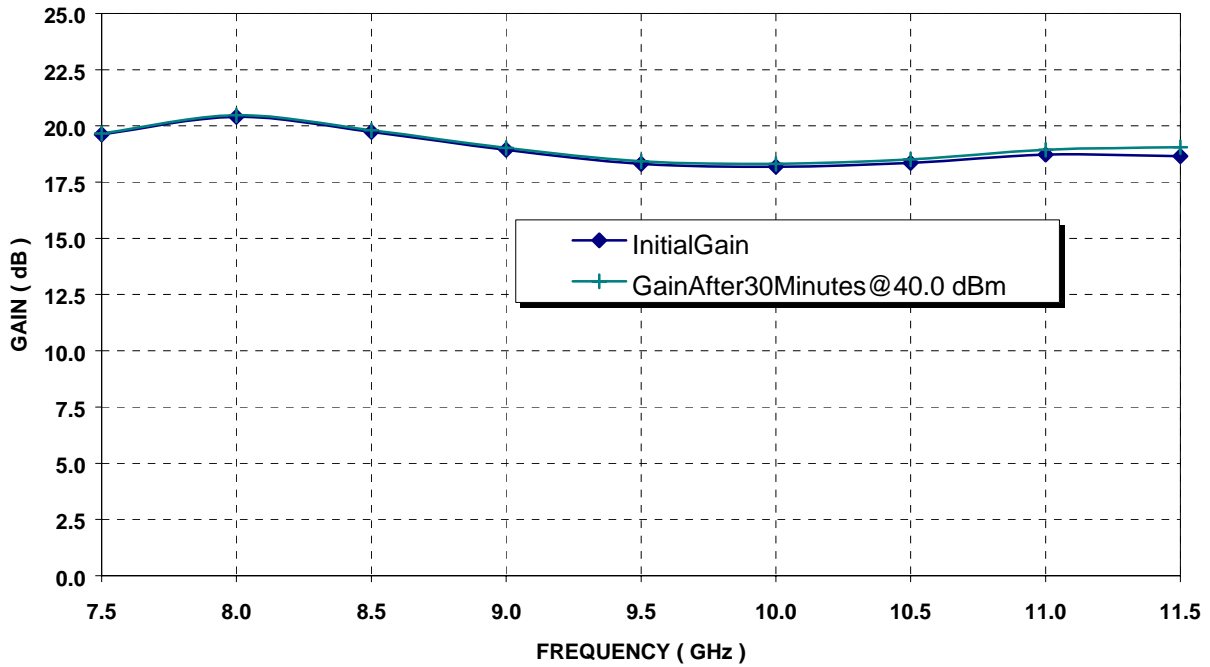
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- Asia/Pacific: Tel. +81-44-844-8296, Fax +81-44-844-8298
- Europe: Tel. +44 (1344) 869 595, Fax +44 (1344) 300 020

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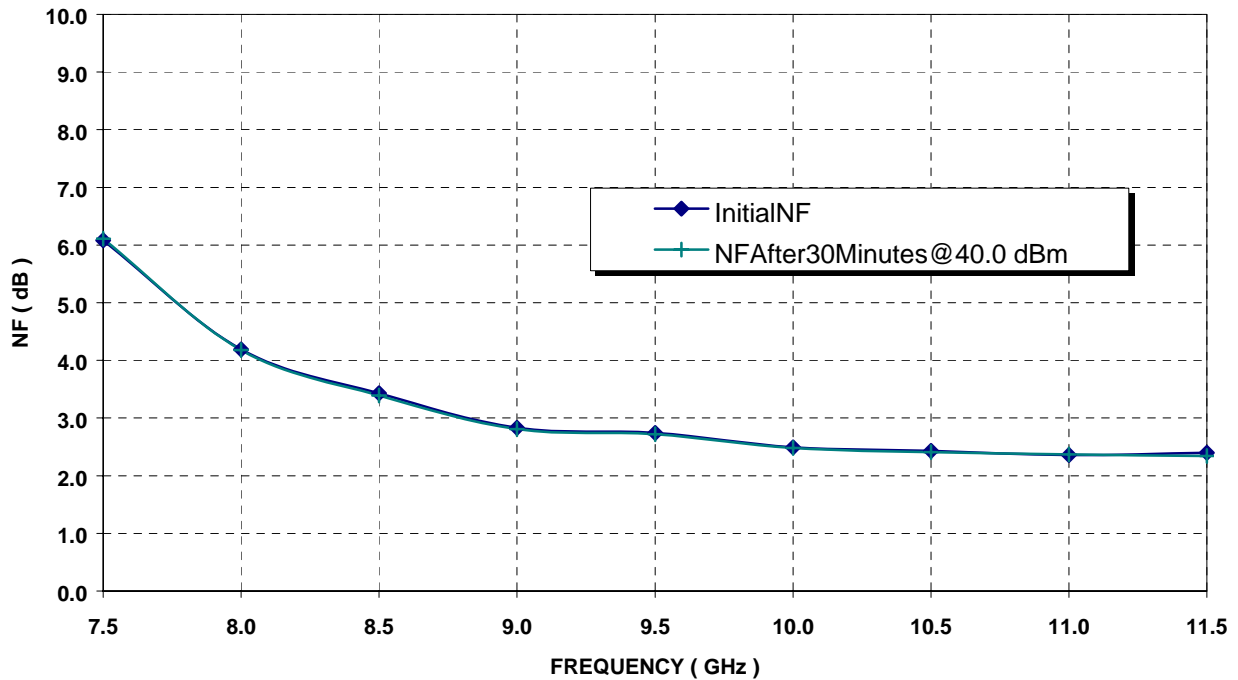


Visit [www.macom.com](http://www.macom.com) for additional data sheets and product information

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



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



Specifications subject to change without notice.

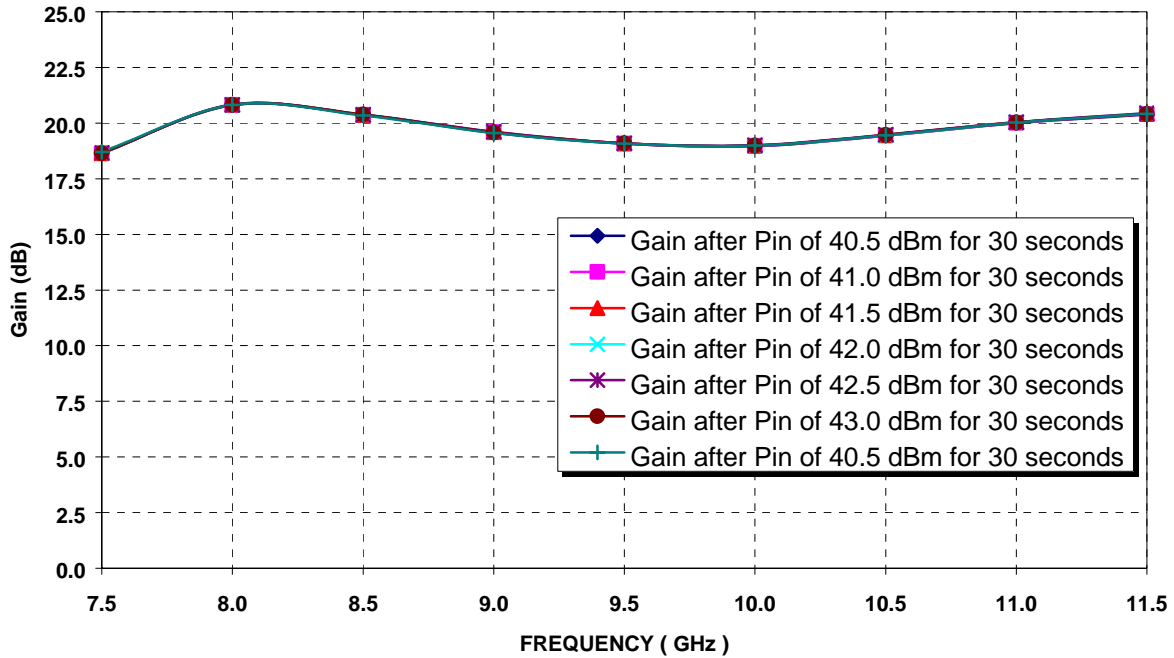
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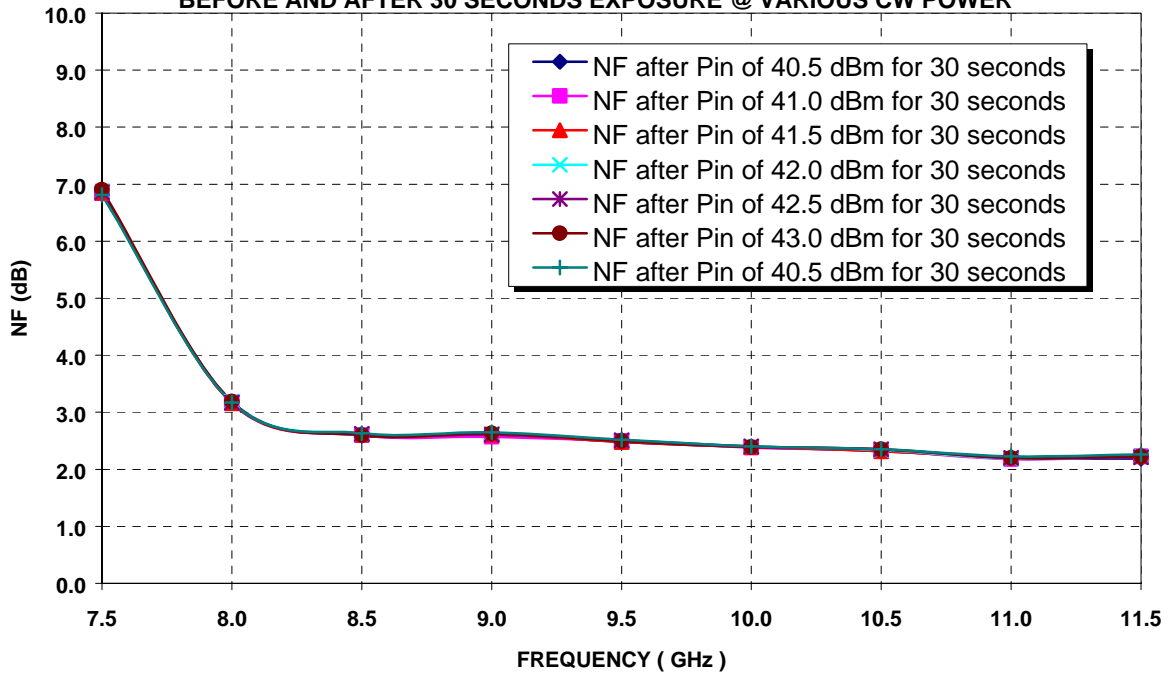


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TYPICAL MEASURED GAIN OF THE THREE-STAGE LIMITER/LNA TESTED BEFORE AND AFTER 30 SECONDS EXPOSURE @ VARIOUS CW POWER



TYPICAL MEASURED NOISE FIGURE OF THE THREE-STAGE LIMITER/LNA TESTED BEFORE AND AFTER 30 SECONDS EXPOSURE @ VARIOUS CW POWER



Specifications subject to change without notice.

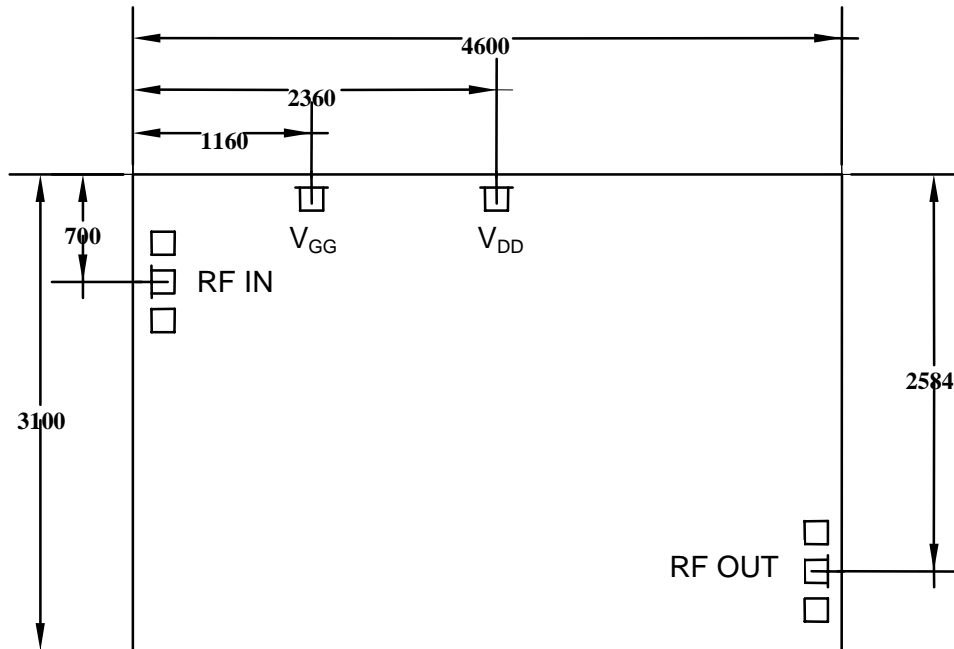
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**MECHANICAL INFORMATION**



**NOTES:**

Dimensions in microns  
Pad size 150 μm x 150 μm

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