

High Performance Amplifier, 10 dB Gain 5 - 500 MHz

Rev. V6

Electrical Specifications^{1,2}: $T_A = -55^{\circ}\text{C}$ to $+85^{\circ}\text{C}$ Case Temperature

Parameter	Frequency	Units	Typical	Guaranteed	
			25°C	0° to 50°C	-54° to +85°C*
Small Signal Gain (min.)	5 - 250 MHz 250 - 500 MHz	dB	9.8 9.3	9.5 9.0	9.0 8.5
Gain Flatness (max.)	5 - 500 MHz	dB	±0.3	±0.7	±1.0
Reverse Isolation	5 - 500 MHz	dB	16	—	—
Noise Figure (max.)	5 - 500 MHz	dB	4.0	5.0	5.5
Power Output @ 1 dB comp. (min.)	—	dBm	19.0	18.0	17.5
IP3	5 - 500 MHz	dBm	34	33	—
IP2	5 - 500 MHz	dBm	48	40	—
Second Order Harmonic IP	5 - 500 MHz	dBm	54	—	—
VSWR In/Out	5 - 500 MHz 20 - 400 MHz	Max.	2.1:1 / 2.1:1 1.6:1 / 1.8:1	2.3:1 / 2.2:1 2.0:1 / 2.0:1	2.5:1 / 2.4:1 2.2:1 / 2.2:1
DC Current @ 15 Volts (max.)	—	mA	65	69	72

1. All specifications apply when operated at 15 VDC, with 50 ohms source and load impedance.

2. Heat Sinking: Operation at case temperature above 95°C is not recommended. Heat sinking adequate to dissipate 1 W must be provided in use.

Absolute Maximum Ratings^{3,4}

Parameter	Absolute Maximum
Input Power	23 dBm
V_{BIAS}	15.75 V
Operating Temperature	-55°C to +85°C
Storage Temperature	-65°C to +125°C

3. Exceeding any one or combination of these limits may cause permanent damage to this device.

4. MACOM does not recommend sustained operation near these survivability limits.

Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

S-Parameter Data

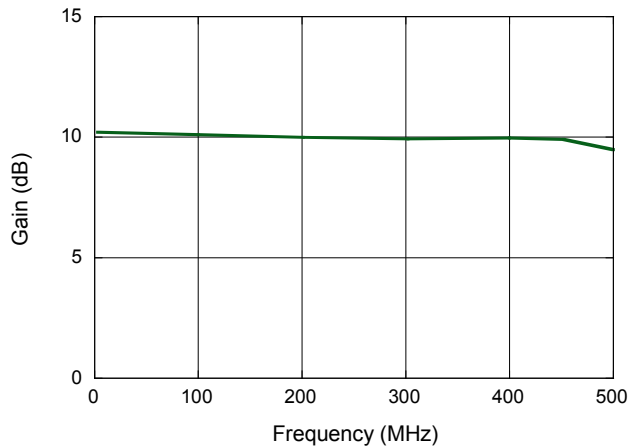
Frequency (MHz)	S11 MAG/ANG	S21 MAG/ANG	S12 MAG/ANG	S22 MAG/ANG
5	0.21/-69.9	3.15/-158.8	0.11/171.3	0.15/92.8
10	0.11/-81.5	3.17/-172.2	0.11/175.0	0.06/116.1
20	0.08/-88.5	3.18/-178.4	0.12/171.7	0.04/139.8
50	0.06/-108.4	3.17/162.9	0.13/159.9	0.03/174.7
100	0.05/-122.8	3.14/142.8	0.13/141.4	0.04/-163.9
200	0.05/-141.8	3.11/104.8	0.13/102.1	0.04/-119.4
300	0.07/-155.4	3.09/66.9	0.12/64.9	0.14/-114.6
400	0.15/177.2	3.08/26.7	0.11/27.3	0.22/-153.2
500	0.20/151.3	3.05/-21.9	0.09/-20.9	0.25/83.4

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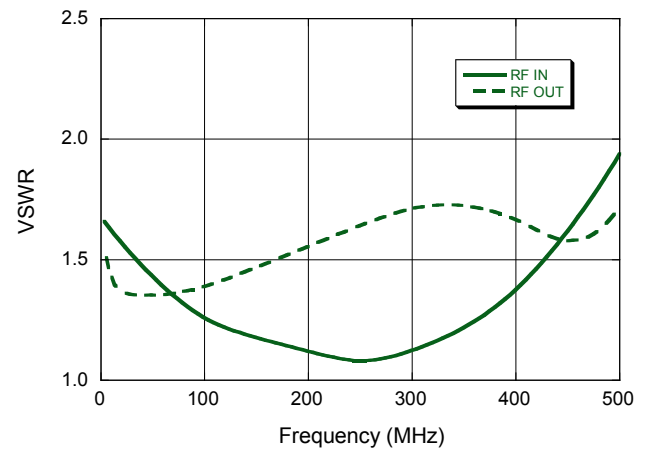
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Typical Performance Curves

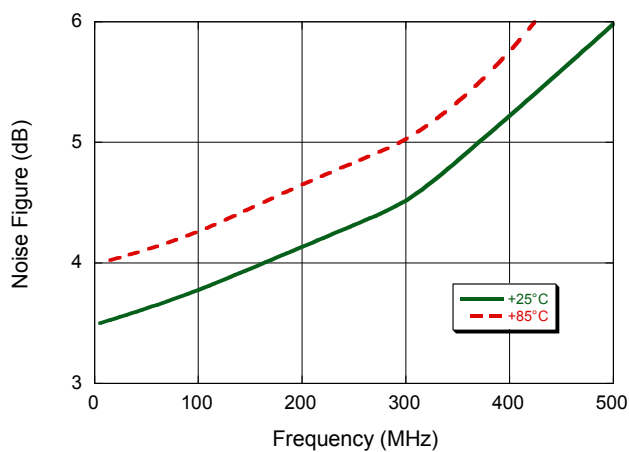
Gain



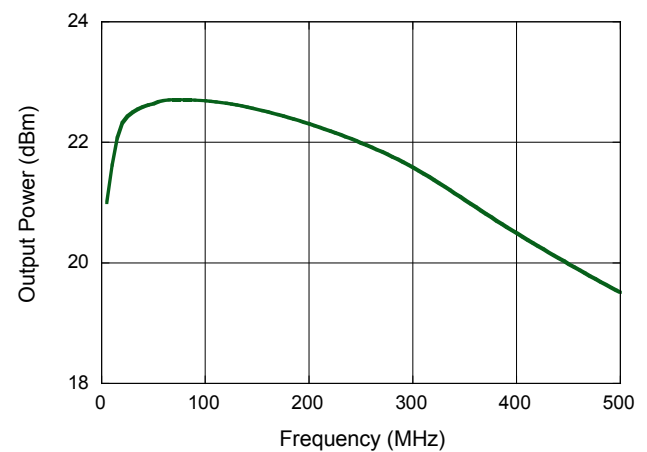
VSWR



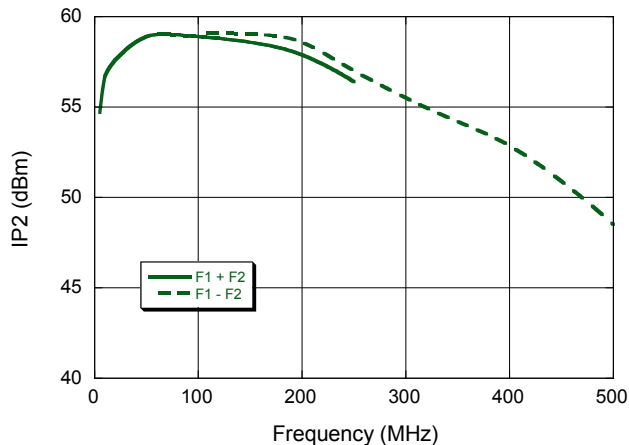
Noise Figure



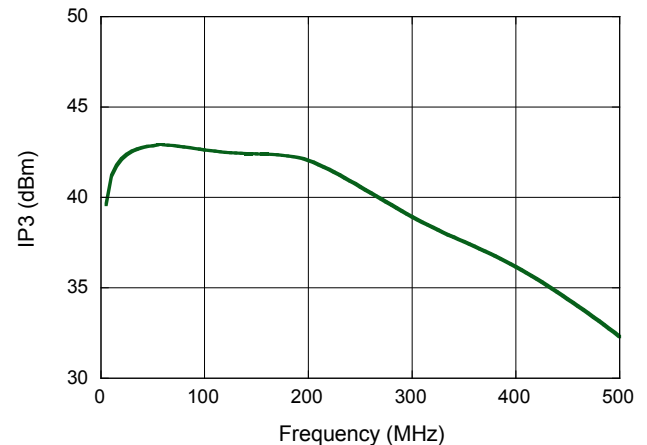
P1dB



Intermodulation Intercept, IP2



Intermodulation Intercept, IP3



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