GaAs MMIC Power Amplifier
2 - 6 GHz

MAAM26100-P1

V1.A

Features

- +30 dBm Saturated Output Power
- 18 dB Typical Gain
- 30% Power Added Efficiency
- On-Chip Bias Network
- DC Decoupled RF Input and Output
- High Performance Ceramic Bolt Down Package

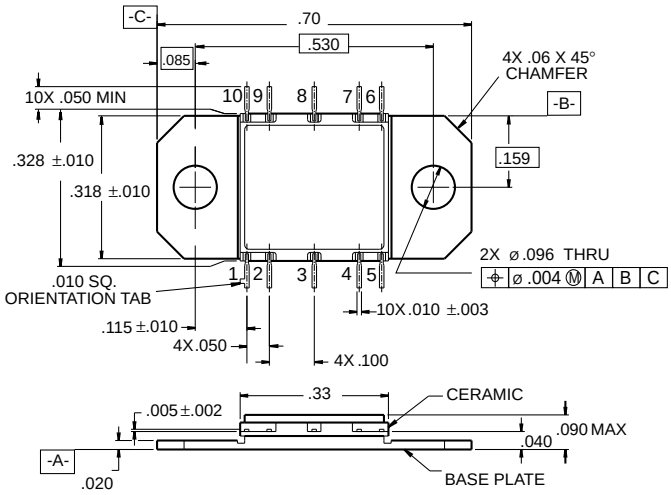
Description

M/A-COM's MAAM26100-P1 is a GaAs MMIC two stage high efficiency power amplifier in a high performance bolt down ceramic package. The MAAM26100-P1 is a fully monolithic design for operation in 50-ohm systems, with an on-chip negative bias network which eliminates the need for external bias circuitry.

The MAAM26100-P1 is ideally suited for driver amplifiers and transmitter outputs in Electronic Warfare Jammers, Missile Subsystems and Phased Array Radars.

M/A-COM's MAAM26100-P1 is fabricated using a mature 0.5-micron gate length GaAs process. The process features full passivation for increased performance reliability.

CR-15



Notes: (unless otherwise specified)
1. Dimensions are inches.
2. Tolerance: in .xxx = ±.010

Ordering Information

Part Number	Package
MAAM26100-P1	Ceramic Bolt Down

Typical Electrical Specifications, T_A= +25°C, V_{DD} = +8 V, V_{GG} = -5 V

Parameter	Test Conditions		Units	Min.	Typ.	Max.
Small Signal Gain	$P_{IN} \leq$ -10 dBm	2 - 6 GHz	dB		18	
Input VSWR	$P_{IN} \leq$ -10 dBm	2 - 6 GHz			2.0:1	
Output VSWR	$P_{IN} \leq$ -10 dBm	2 - 6 GHz			2.2:1	
Output Power	P_{IN} = +15 dBm	2 - 6 GHz	dBm		+30	
Power Added Efficiency	P_{IN} = +15 dBm	2 - 6 GHz	%		30	
Output IP_3		2, 5 & 6 GHz	dBm		40	

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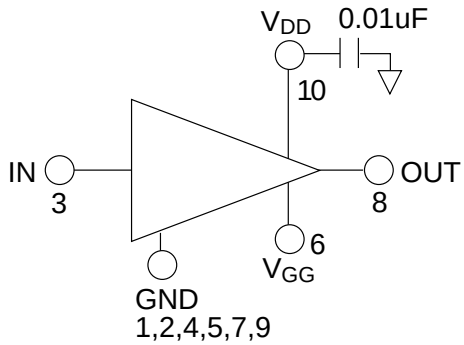
Absolute Maximum Ratings[1, 2]

Parameter	Absolute Maximum
V_{DD}	10 Volts
V_{GG}	-10 Volts
Power Dissipation	8.4 W
RF Input Power	+23 dBm
Channel Temperature	150°C
Storage Temperature	-65°C to +150°C
Thermal Resistance (Channel to Case)	15°C/W

1. Exceeding these limits may cause permanent damage.
2. Case Temperature (Tc) = +25°C

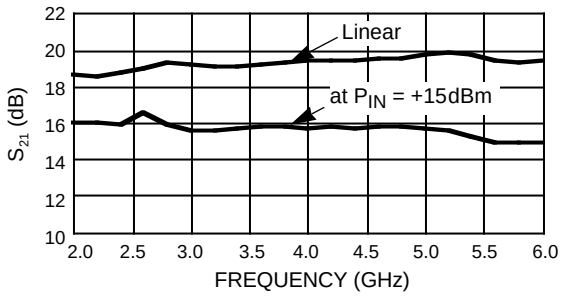
Functional Diagram[3,4]



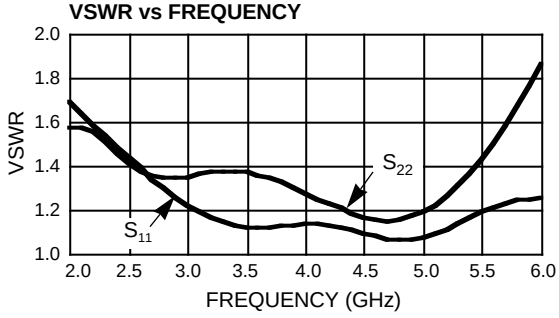
3. Nominal bias is obtained by first connecting -5 volts to pin 6 (VGG),followed by connecting +9 volts to pin 10 (VDD). Note sequence.
4. RF ground and thermal interface is the flange (case bottom). Adequate heat sinking is required.

Typical Performance @+25°C

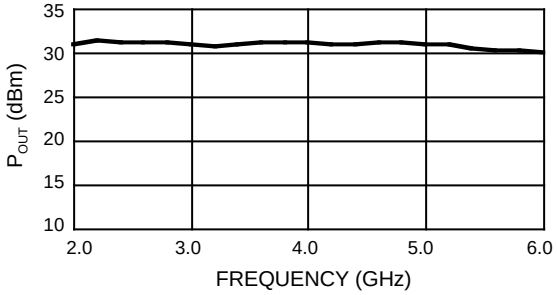
GAIN vs FREQUENCY



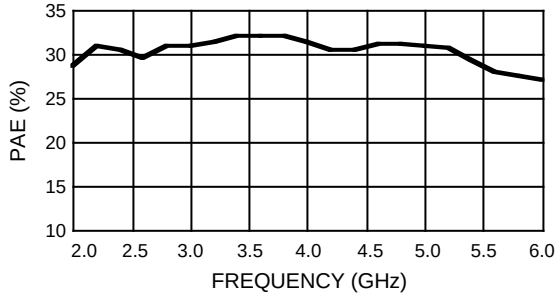
VSWR vs FREQUENCY



OUTPUT POWER vs FREQUENCY
@ P_{IN} = +15 dBm



POWER ADDED EFFICIENCY vs FREQUENCY
@ P_{IN} = +15 dBm



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