## MAAM26100-B1



#### GaAs MMIC Power Amplifier 2.0 - 6.0 GHz

Rev. V7

#### **Features**

Saturated Power: 30.5 dBm Typical

Gain: 19 dB Typical

Power Added Efficiency: 30%

- DC Decoupled RF Input and Output
- Lead-Free 7-Lead Ceramic Package
- RoHS\* Compliant and 260°C Reflow Compatible

#### **Description**

The MAAM26100-B1 is a GaAs MMIC two stage high efficiency power amplifier in a small, lead-free, 7-leadceramic package. MAAM26100-B1 is a fully monolithic design which eliminates the need for external circuitry in 50-ohm systems.

The MAAM26100-B1 is ideally suited for driver amplifiers and transmitter outputs in UMTS applications, test equipment, electronic warfare jammers, missile subsystems and phased array radars.

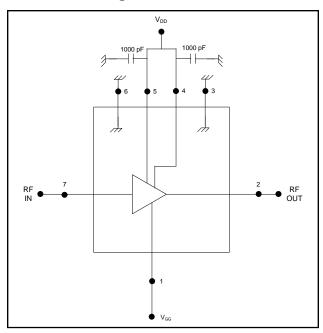
The MAAM26100-B1 is fabricated using a mature 0.5-micron gate length GaAs process. The process passivation features full for increased performance reliability.

### Absolute Maximum Ratings 1,2

Parameter	Absolute Maximum		
$V_{DD}$	+9 V		
$V_{GG}$	-6 V to -3 V		
RF Input Power	+17 dBm		
Channel Temperature	150°C		
Storage Temperature	-65°C to +150°C		

- 1. Exceeding any one or combination of these limits may cause permanent damage to this device and will void product warranty.
- 2. M/A-COM Tech does not recommend sustained operation near these survivability limits.

#### Functional Diagram 3,4



- 3. Nominal bias is obtained by first connecting -5 volts to pin 1 (V<sub>GG</sub>), followed by connecting +8 volts to pin 5 (V<sub>D1</sub>) and pin 4 (V<sub>D2</sub>). Note sequence.
- 4. RF ground and thermal interface are the case bottom. Adequate heat sinking is required.

#### Pin Configuration

Pin No.	Function	Pin No.	Function		
1	$V_{GG}$	5	V <sub>D1</sub>		
2	RF Output	6	Internal Ground		
3	Internal Ground	7	RF Input		
4	$V_{D2}$				

#### **Ordering Information**

Part Number	Package		
MAAM26100-B1	7 lead, Ceramic (CR-2)		
MAAM26100-B1G	7 lead, Ceramic (CR-2) with Gull Wing		

<sup>\*</sup> Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

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# GaAs MMIC Power Amplifier 2.0 - 6.0 GHz

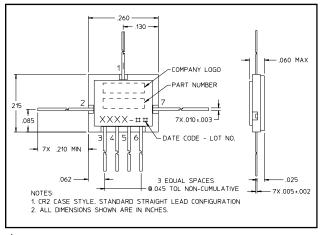
Rev. V7

## Electrical Specifications: $T_A$ = 25°C, $V_{DD}$ = +8 V, $V_{GG}$ = -5 V, $Z_0$ = 50 $\Omega$

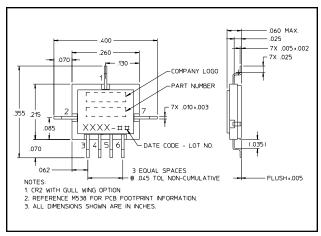
Parameter	Test Conditions	Units	Min.	Тур.	Max.
Small Signal Gain	2 - 6 GHz	dB	15	19	_
Input VSWR	Input Power +14 dBm, 2 - 6 GHz	Ratio	_	1.7:1	2.1:1
Output VSWR	Input Power +14 dBm, 2 - 6 GHz	Ratio	_	2.2:1	_
Saturated Output Power	Input Power +14 dBm, 2 - 6 GHz	dBm	29	30.5	_
Output Power at 1 dB Gain Compression	2 - 6 GHz	dBm	_	27	_
Power Added Efficiency	<del>-</del>	%	_	30	_
Third Order Intercept	2 - 6 GHz	dBm	_	39	_
Reverse Isolation	2 - 6 GHz	dB	_	30	_
I <sub>DSQ</sub>	No RF	mA	_	390	_
I <sub>DS</sub>	Input Power +14 dBm	mA	300	475	650
I <sub>GG</sub>	Input Power +14 dBm	mA	_	10	_
Thermal Resistance <sup>5</sup>	_	°C/W	_	16.5	_

<sup>5.</sup> Attachment method not included.

#### Lead-Free CR-2<sup>†</sup>



#### Lead-Free CR-2 w/ Gull Wing †



<sup>&</sup>lt;sup>†</sup> Reference Application Note M538 for lead-free solder reflow recommendations. Meets JEDEC moisture sensitivity level 1 requirements.

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