

### 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-lead ceramic package. The 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.

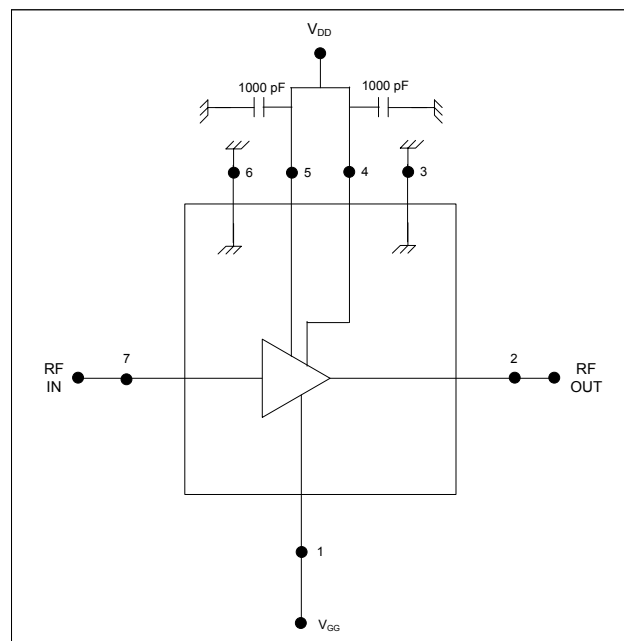
The MAAM26100-B1 is fabricated using a mature 0.5-micron gate length GaAs process. The process features full passivation for increased performance reliability.

### Absolute Maximum Ratings <sup>1,2</sup>

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 <sup>3,4</sup>



3. Nominal bias is obtained by first connecting -5 volts to pin 1 ( $V_{GG}$ ), followed by connecting +8 volts to pin 5 ( $V_{D1}$ ) and pin 4 ( $V_{D2}$ ). 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	$V_{D1}$
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

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

## GaAs MMIC Power Amplifier 2 - 6 GHz

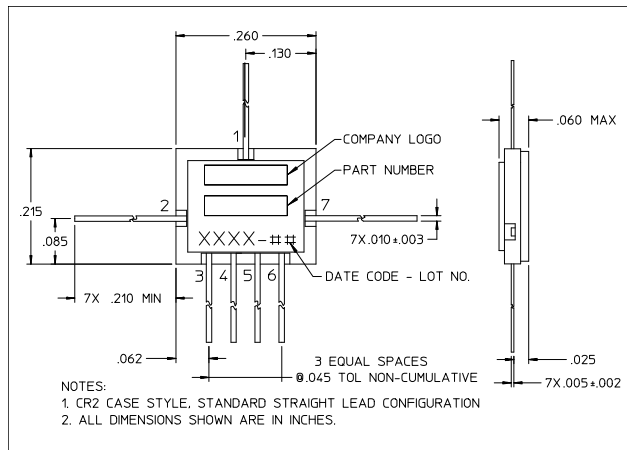
Rev. V7

**Electrical Specifications:**  $T_A = 25^\circ\text{C}$ ,  $V_{DD} = +8\text{ V}$ ,  $V_{GG} = -5\text{ V}$ ,  $Z_0 = 50\ \Omega$

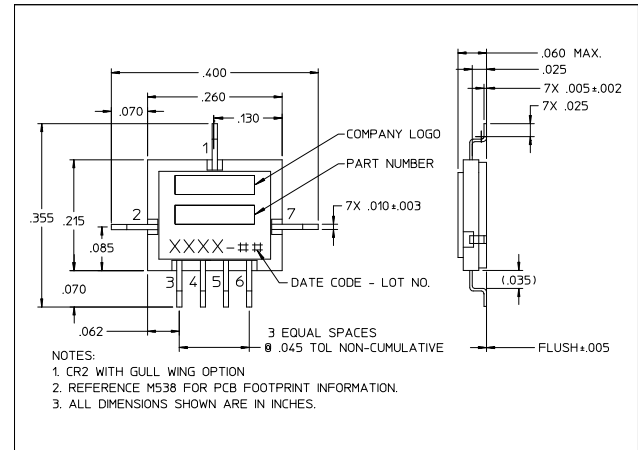
Parameter	Test Conditions	Units	Min.	Typ.	Max.
Small Signal Gain	2 - 6 GHz	dB	15	19	—
Input VSWR	Input Power +14 dBm, 2 - 6 GHz	Ratio	—	1.7:1	2.1:1
Output VSWR	Input Power +14 dBm, 2 - 6 GHz	Ratio	—	2.2:1	—
Saturated Output Power	Input Power +14 dBm, 2 - 6 GHz	dBm	29	30.5	—
Output Power at 1 dB Gain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

5. Attachment method not included.

### Lead-Free CR-2<sup>†</sup>



### Lead-Free CR-2 w/ Gull Wing<sup>†</sup>



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

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