MAAM26100-B1



GaAs MMIC Power Amplifier 2 - 6 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. 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.

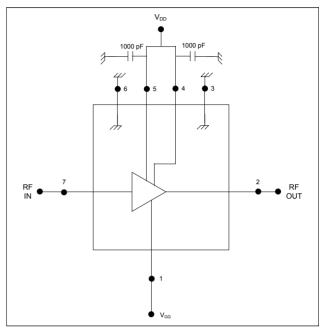
The MAAM26100-B1 is fabricated using a mature 0.5-micron gate length GaAs process. The process features full passivation for increased performance reliability.

Absolute Maximum Ratings 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	ture -65°C to +150°C		

- Exceeding any one or combination of these limits may cause permanent damage to this device and will void product warranty.
- 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 ($V_{\rm GG}$), followed by connecting +8 volts to pin 5 ($V_{\rm D1}$) and pin 4 ($V_{\rm D2}$). Note sequence.
- 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.

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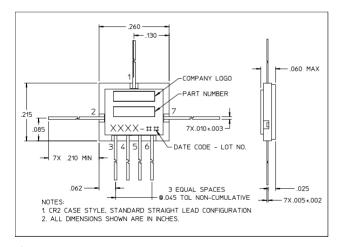
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Electrical Specifications: $T_A = 25^{\circ}C$, $V_{DD} = +8$ V, $V_{GG} = -5$ V, $Z_0 = 50$ Ω

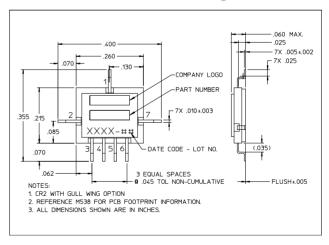
Parameter	Test Conditions	Units	Min.	Тур.	Max.
Small Signal Gain	2 - 6 GHz	dB	15	19	_
Input VSWR	Input Power +14 dBm, 2 - 6 GHz	Ratio	_	1.7:1	2.1:1
Output VSWR	Input Power +14 dBm, 2 - 6 GHz	Ratio	_	2.2:1	_
Saturated Output Power	Input Power +14 dBm, 2 - 6 GHz	dBm	29	30.5	_
Output Power at 1 dB Gain Compression	2 - 6 GHz	dBm	_	27	_
Power Added Efficiency	_	%	_	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 ⁵	_	°C/W	_	16.5	_

^{5.} Attachment method not included.

Lead-Free CR-2[†]



Lead-Free CR-2 w/ Gull Wing †



[†] Reference Application Note M538 for lead-free solder reflow recommendations. Meets JEDEC moisture sensitivity level 1 requirements.

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