

RoHS Compliant



MAAM26100-P1 V5

GaAs MMIC Power Amplifier 2.0 - 6.0 GHz

Features

Saturated Output Power: 30.5 dBm Typical

Gain: 20 dB Typical

Power Added Efficiency: 30% Typical

On-Chip Bias Network

· DC Decoupled RF Input and Output

Lead-Free High Performance Ceramic Package

RoHS* Compliant and 260°C Reflow Compatible

Description

M/A-COM's MAAM26100-P1 is a GaAs MMIC two stage high efficiency power amplifier in a lead-free high performance bolt down ceramic package. The MAAM26100-P1 is a fully monolithic design which eliminates the need for external circuitry in 50-ohm systems.

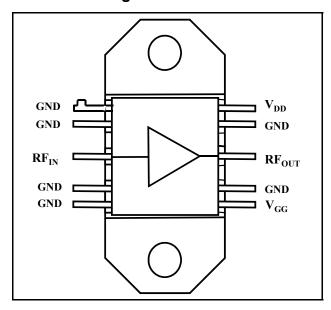
The MAAM26100-P1 is ideally suited for driver amplifiers and transmitter outputs in UMTS applications, test equipment, electronic warfare jammers, missile subsystems and phased array radars.

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.

Ordering Information

Part Number	Package	
MAAM26100-P1	Ceramic Bolt Down	

Functional Diagram



Pin Configuration

Pin No.	Function	Pin No.	Function	
1	GND	6	V_{GG}	
2	GND	7	GND	
3	RF _{IN}	8	RF _{OUT}	
4	GND	9	GND	
5	GND	10	V_{DD}	

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		
Thermal Resistance (Channel to Case)	15°C/W		

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

Visit www.macom.com for additional data sheets and product information.

^{*} Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

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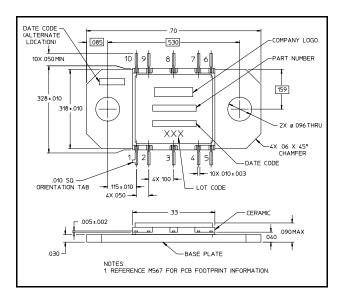
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Electrical Specifications: $T_A = 25$ °C, $V_{DD} = +8$ V, $V_{GG} = -5$ V

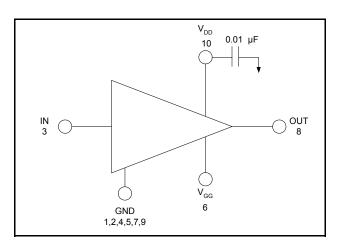
Parameter	Test Conditions	Units	Min.	Тур.	Max.
Small Signal Gain	Pin <u><</u> -10 dBm, 2-6 GHz	dB	_	20	_
Input VSWR	Pin <u>≤</u> -10 dBm, 2-6 GHz	Ratio		1.8:1	2.1:1
Output VSWR	Pin <u><</u> -10 dBm, 2-6 GHz	Ratio	_	2.2:1	_
Output Power	Pin = +14 dBm, 2-6 GHz	dBm	29	30.5	_
P1dB	2-6 GHz	dBm	_	28	_
Power Added Efficiency	Pin = +14 dBm, 2-6 GHz	%	_	30	_
Output IP3	2-6 GHz	dBm	_	40	_
IDS	Pin = +14 dBm, 2-6 GHz	mA	_	475	650

Lead-Free CR-15[†]



† Reference Application Note M538 for lead-free solder reflow recommendations.

Functional Schematic 3,4



- Nominal bias is obtained by first connecting –5 volts to pin 6 (VGG), followed by connecting +8 volts to pin 10 (VDD). Note sequence.
- RF ground and thermal interface is the flange (case bottom). Adequate heat sinking is required.

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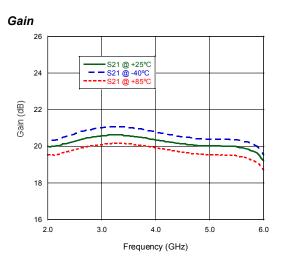
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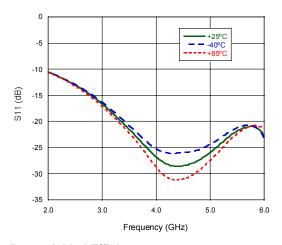
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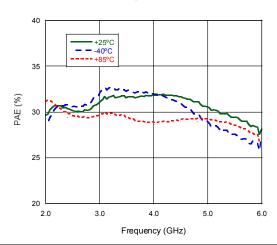
Typical Performance Curves



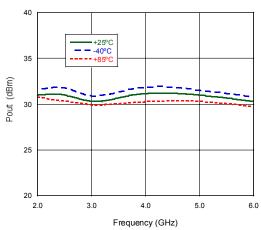
Input Return Loss



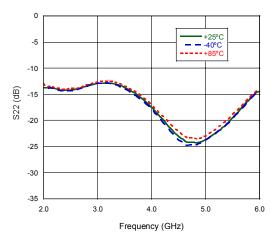
Power Added Efficiency



Pout



Output Return Loss



information.

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