

VRFA0156-BD



9-10GHz 41.5dBm GaAs MMIC Power Amplifier

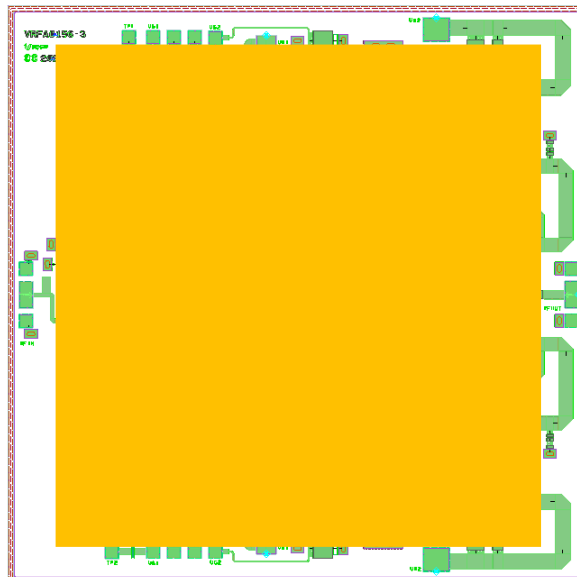
Advanced Product information v1

Features

- Frequency Range: 9 to 10 GHz
- Single supply +7.5V
- 30dB small signal gain
- 50% Drain Efficiency @ 9.5GHz typical
- Rugged power handling capability
- 50Ω matched RF ports
- Die size = 4.40mm x 4.45mm

Description

The VRFA0156-BD is a GaAs high power amplifier MMIC which operates over the frequency range of 8.5GHz to 10.5GHz. The amplifier typically delivers a small signal gain of +30dB, saturated output power Psat of +41.6dBm with a typical efficiency of 50% at 9.5GHz. The RF ports are DC blocked and matched to 50Ω.



Electrical Specifications

T=+25°C baseplate, V_{DD} = +7.5V

Parameter	Specification			Unit
	Min.	Typ @9.5GHz	Max.	
Frequency Bandwidth	9		10	GHz
Small Signal Gain		30		dB
I/P Return Loss		-17.4		dB
O/P Return Loss		-15.2		dB
Saturated Output Power (Psat)		41.6		dBm
Power Added Efficiency (PAE)		50		%

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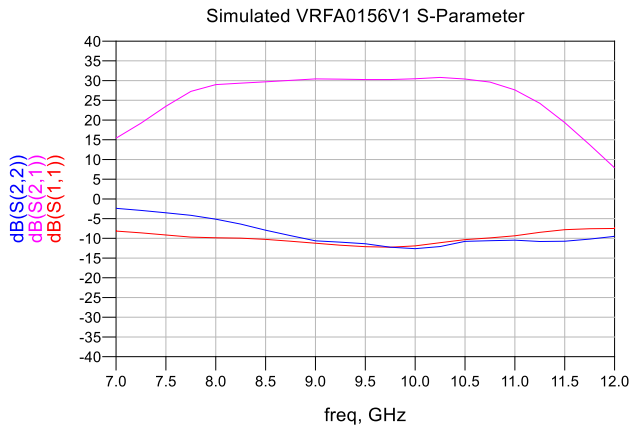
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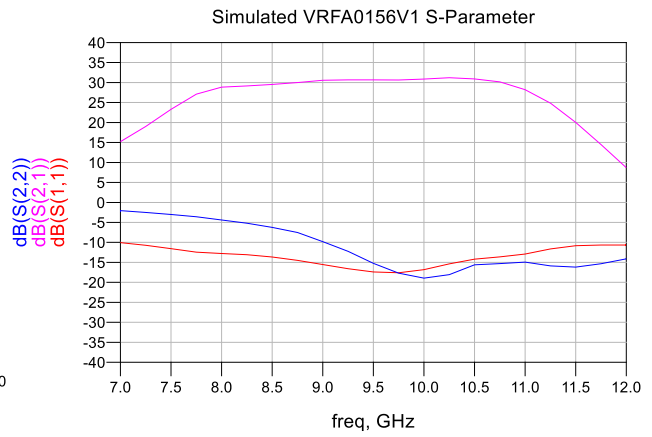
Simulated Performance

T=+25°C baseplate, V_{DD} = +7.5V

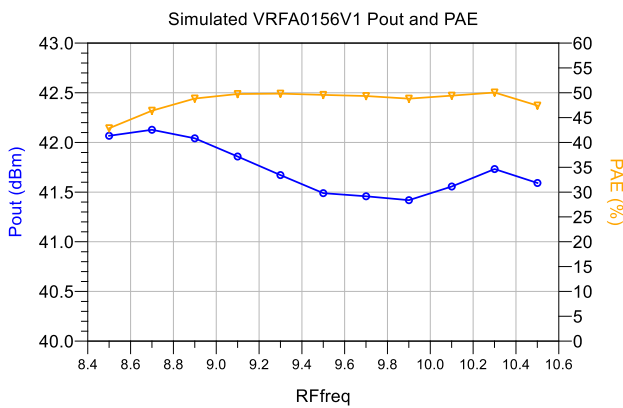
No bondwire



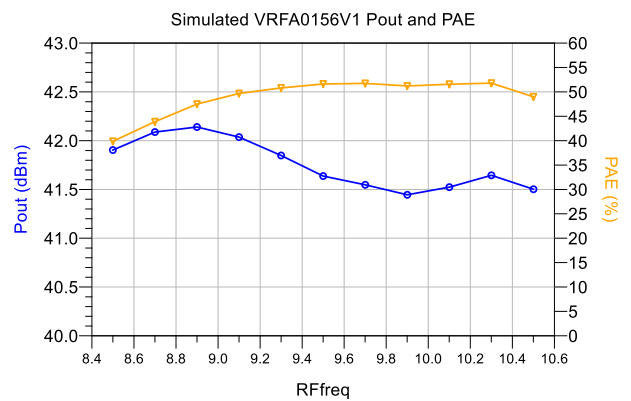
With bondwire



No bondwire



With bondwire



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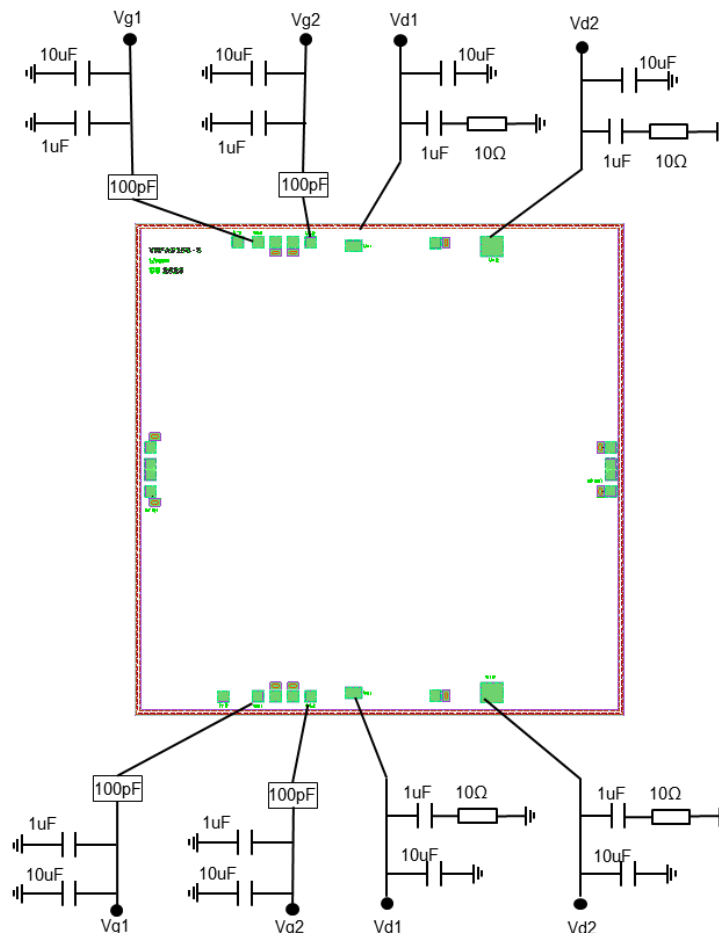
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Recommended Absolute Maximum Ratings ^[1]

Parameter	Symbol	Value	Notes
Drain Bias Voltage	V_d	+8.5V	
Gate Bias Voltage	V_g	-5V	
Gate Current	I_g	20mA	
Junction Temperature	T_j	175°C	For maximum median device lifetime, T_j should be minimised
Storage temperature	$T_{storage}$	-55 to 150°C	

^[1] Operation outside these conditions may cause permanent damage to the device. Combination of maximum rating conditions may reduce the values. Device performance at these ratings is not implied.

Assembly & Bond-



Die thickness	100um
Minimum bond pad opening	100 um x 100 um

GaAs devices are ESD sensitive and precautions should be observed during storage, handling, assembly and testing.

