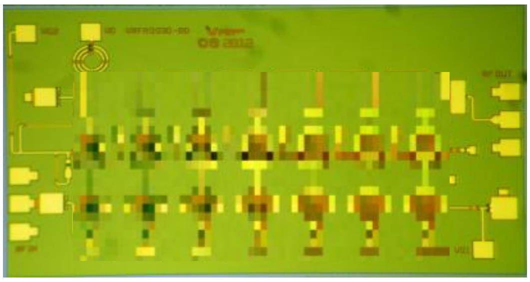
VRFA0030 - BD

2-20GHz GaAs MMIC Wideband Amplifier

Preliminary Datasheet v2

Features



- Frequency Range: 2 to 20GHz
- P1dB Output Power 20dBm CW typical
- Small Signal Gain 11dB
- Bias: Vd = 8V, Idq = 515mA
- Die Size: 2.5mm x 1.5mm x 0.05 mm

Description

The VRFA0030-BD is a wideband GaAs MMIC amplifier which operates over the frequency range of 2 to 20GHz. The amplifier typically delivers a small signal gain of +11dB, output power P1dB of +20dBm CW typical. The VRFA0030-BD draws 515mA from a +8VDC supply. The RF ports are DC blocked and matched to 50Ω. Typical applications for the VRFA0030-BD include EW systems, radar and Test and

Electrical Specifications

T=+25°C baseplate, V_{DD} = +3V, Idq=515mA

Parameter	Specification			Unit
	Max.	Typ.	Min.	
Frequency Bandwidth	DC		20	GHz
P1dB Output Power		24		dBm
Small Signal Gain		11		dB
I/P Return Loss		-14		dB
O/P Return Loss		-14		dB

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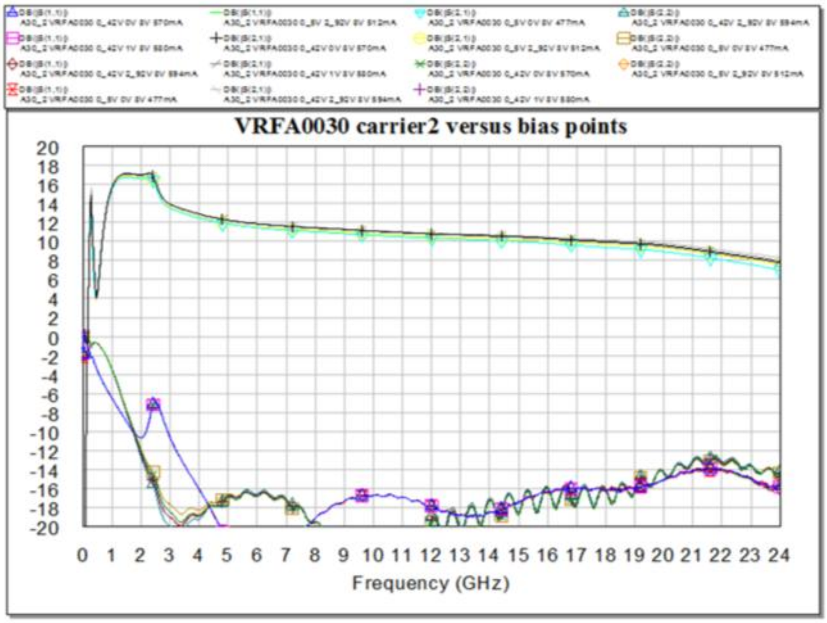
Measured Performance (on wafer)

T=+25°C baseplate, V_{DD} = +3V, Idq=515mA



Recommended Absolute Maximum Ratings [1]

Parameter	Symbol	Value	Notes
Drain Bias Voltage	V_d	+10V	
Gate Bias Voltage	V_g	-5V	
Gate Current	I_g	5mA	
RF input power	RF_{in}	+5dBm	
Power Dissipation	P_d		Related to Junction Temperature
Junction Temperature	T_j	200°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.*

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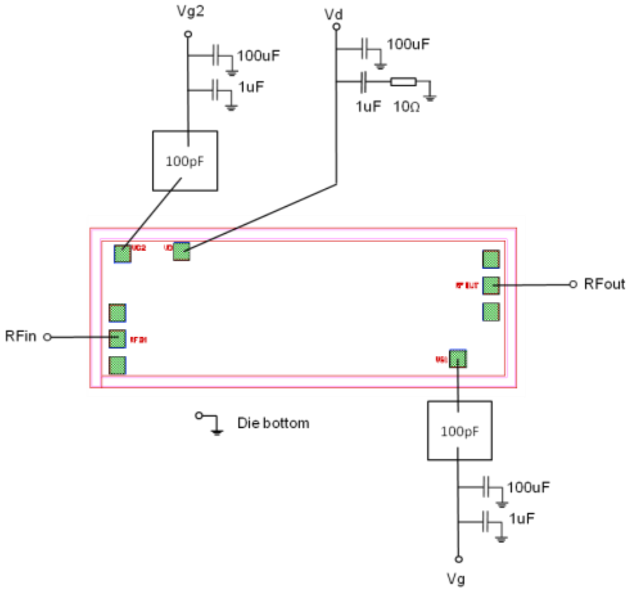
Assembly & Bonding Diagram



Die Size	2.5mm x 1.5mm
Die Thickness	50µm
Minimum Bondpad opening	70µm x 70µm

Minimal length (0.15nH) are recommended for RF bondwires. The RF input and output ports are DC blocked.

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