

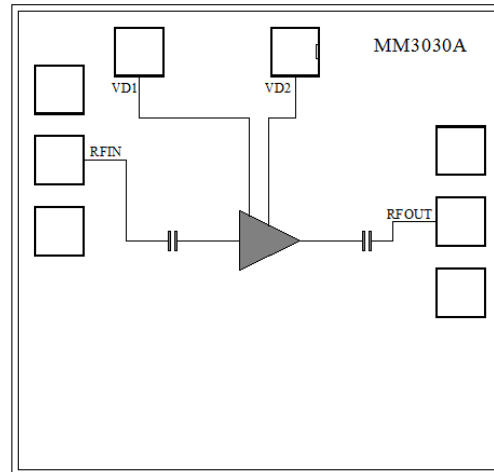
Features

- Frequency: 4-27GHz
- Small Signal Gain: 15.5dB Typical
- Gain Flatness: ± 0.3 dB Typical
- Psat: 22dBm Typical
- Supply voltage: +5V@126mA
- Input/Output: 50 Ω
- Die Size: 1.05 x 1.0 x 0.1mm

Typical Applications

- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Functional Block Diagram



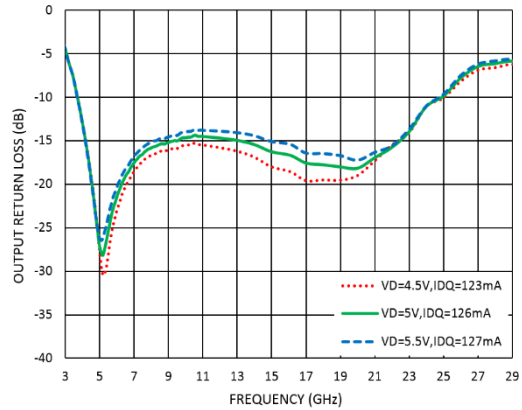
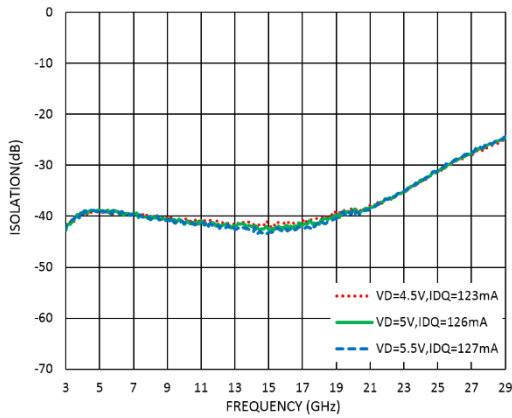
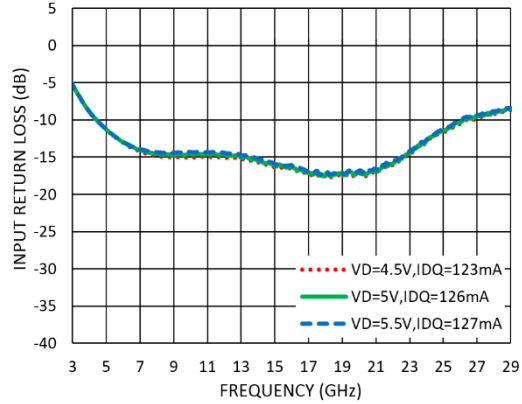
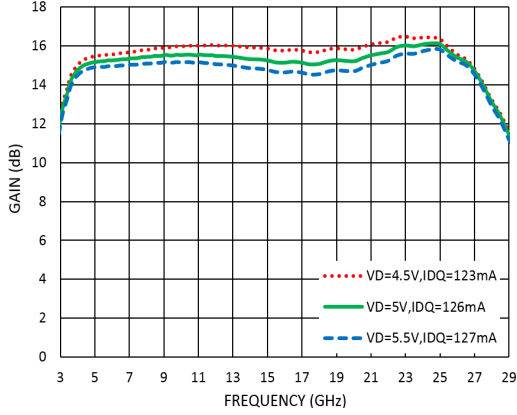
Electrical Specifications

TA = +25°C, VD=+5V, IDD = 126mA Typical

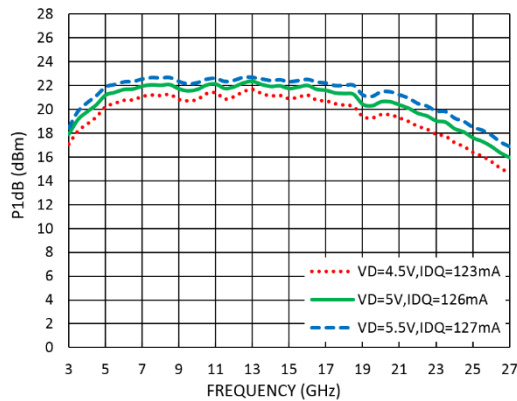
Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency	4 - 8GHz			8 - 20GHz			20 - 27GHz			GHz
Small Signal Gain	14	15		14.5	15		13.5	15.5		dB
Gain Flatness		± 1.0			± 0.3			± 1.5		dB
Noise Figure		6.5			6			5.5		dB
P1dB - Output 1dB Compression	18	21		19.5	22		15	19		dBm
Psat - Saturated Output Power	19	22		21	22		16	20		dBm
OIP3 - Output Third Order Intercept		31			31			31		dBm
Input Return Loss		-10			-15			-15		dB
Output Return Loss		-15			-15			-10		dB



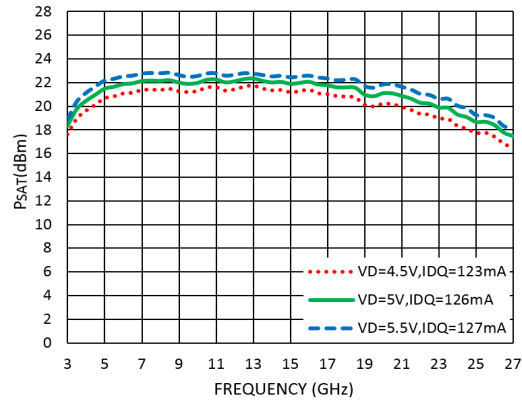
Measurement Plots: S-parameters



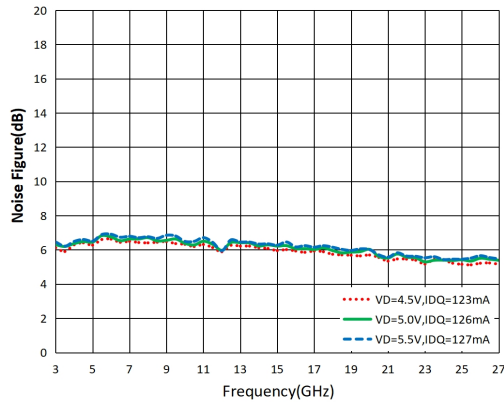
Measurement Plots: P1dB



Measurement Plots: PsAT



Measurement Plots: Noise Figure



Absolute Maximum Ratings

Drain Bias Voltage (VD)	+6V
RF Input Power (RFIN)@(+5V)	+15dBm
Channel Temperature	175 °C
Continuous P _{diss} (T = 85 °C) (derate 8.7mW/°C above 85 °C)	0.78W
Thermal Resistance (channel to die bottom)	50°C/W
Operating Temperature	-55°C to +85 °C
Storage Temperature	-65°C to +125 °C

Typical Supply Current vs. VD

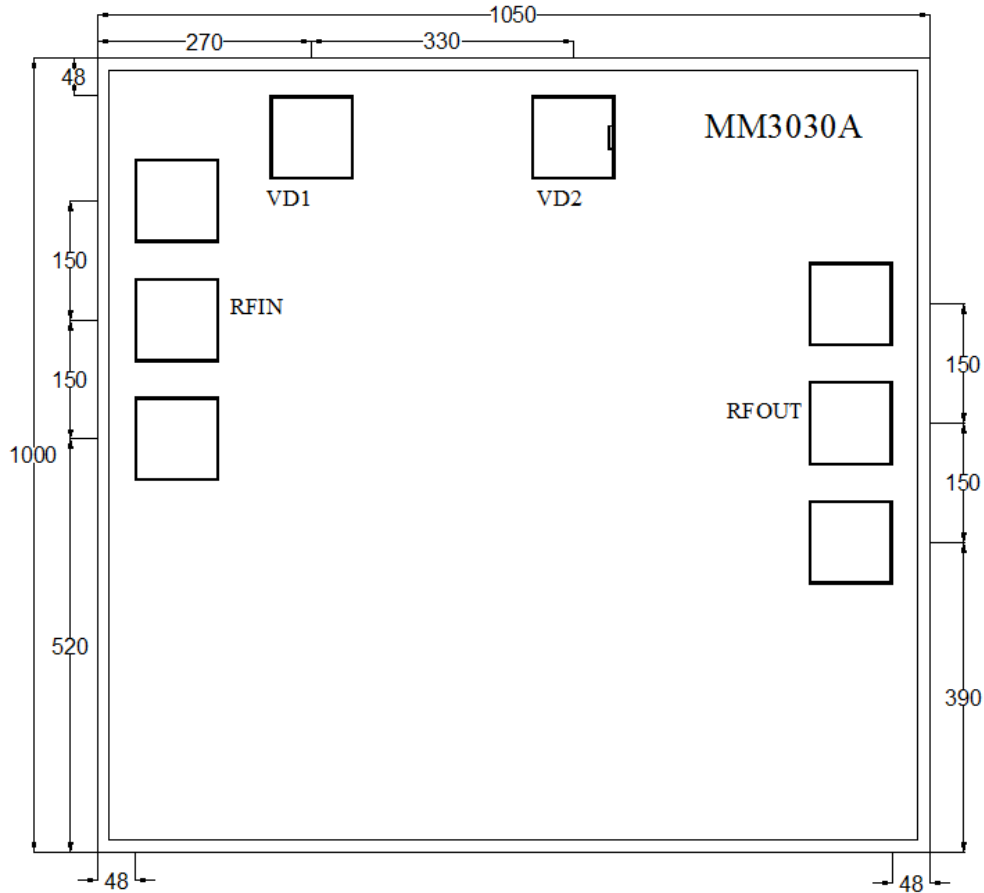
VD (V)	IDD (mA)
+4.5	123
+5.0	126
+5.5	127



ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS



Outline Drawing: All Dimensions in μm



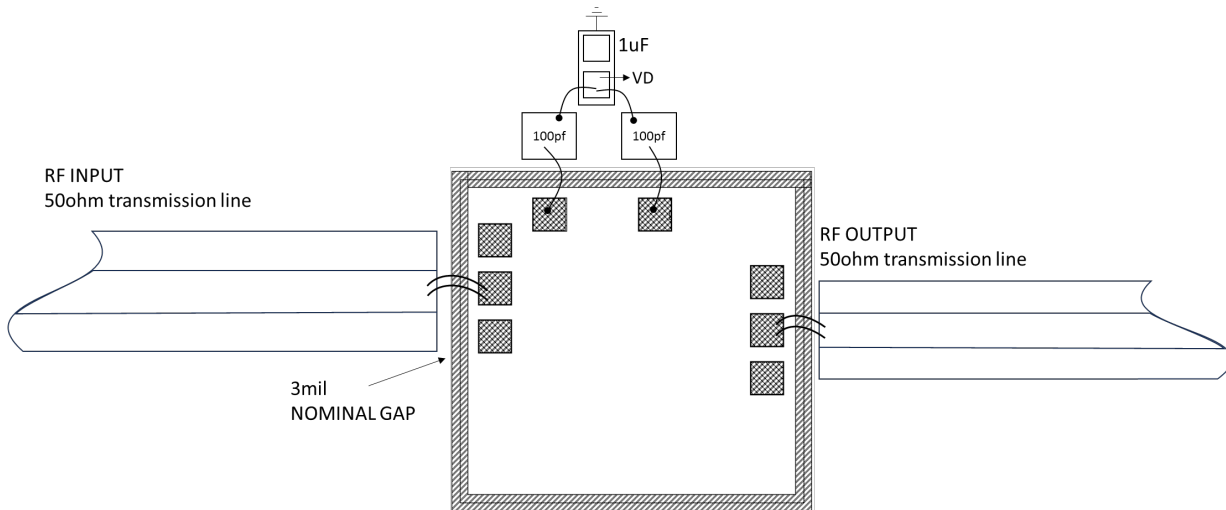
Notes:

1. Die thickness: 100 μm
2. DC bond pad is 100*100 μm^2
3. RF IN/OUT bond pad is 100*100 μm^2
4. Bond pad metalization: Gold
5. Backside metalization: Gold



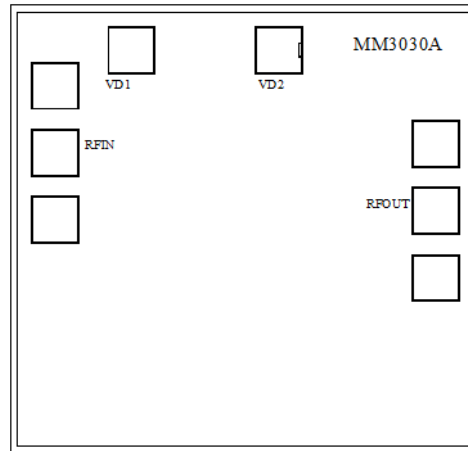
Assembly Drawing

MM3030A



GaAs Driver Amplifier MMIC 4-27GHz

No	Function	Description
1	RF IN	RF signal input terminal; no blocking capacitor required.
2	RF OUT	RF signal output terminal; no blocking capacitor required.
3	VD	Drain Biases for the Amplifier. External bypass capacitors of 1 μ f and 100pf are required for these pads.
4	Die Bottom	Die bottom must be connected to RF and dc ground.



Biasing and Operation

Turn ON procedure:

1. Connect GND to RF and dc ground.
2. Apply positive drain voltage VD and set to +5V .
3. Apply RF signal.

Turn OFF procedure:

1. Turn off the RF signal.
2. Turn off the positive drain voltage VD.

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