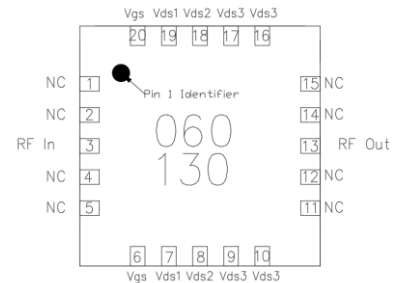


## DESCRIPTION

AMCOM's AM06013033WM-QN5-R is a broadband GaAs MMIC which operates between 6 and 13 GHz with 28 dB gain and 33 dBm output power. The Amplifier Input and output are internally matched to 50 Ohms. The amplifier is packaged in a 5x5 mm 20-pins QFN package which suits automated assembly techniques.



## FEATURES

- Ultra-Broadband from 6 to 13GHz
- Saturated output power  $P_{sat}$  is 33 dBm
- Gain, 28 dB
- Input & output matched to 50 Ohms

## APPLICATIONS

- Test Instrumentation
- Commercial telecom transmission equipment
- Military and Space

## TYPICAL PERFORMANCE \*

**Bias Conditions\*\*:**  $V_{ds} = +8V$ ,  $I_{ds} = 650mA$

Parameters	Minimum	Typical **	Maximum
Frequency	7 – 12 GHz	6 – 13 GHz	
Small Signal Gain	24	28	
Gain Ripple	-	± 1.5 dB	± 3.0dB
P1dB	-	32 dBm	
P3dB	31 dBm	33 dBm	
P3dB Efficiency	-	25%	
NF	-	9	
Input Return Loss	-	15dB	
Output Return Loss	-	7dB	

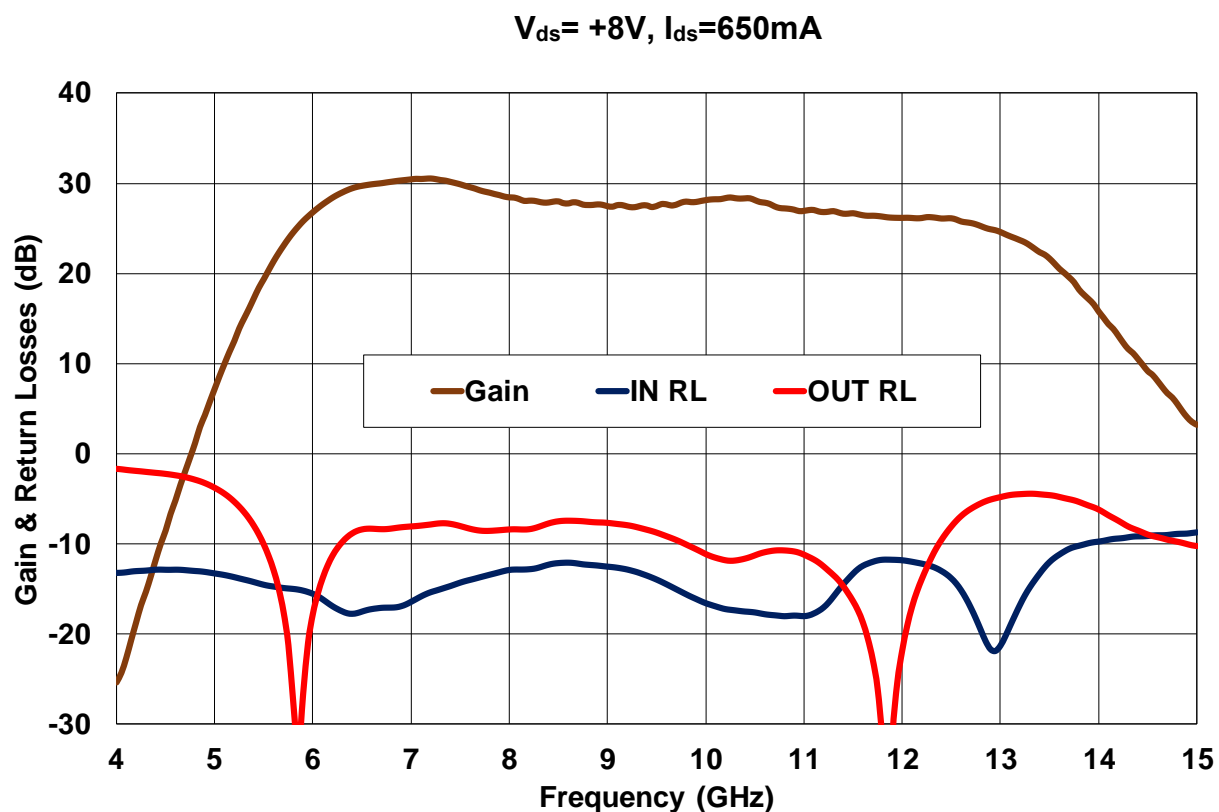
\* Specifications subject to change without notice

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## ABSOLUTE MAXIMUM RATING

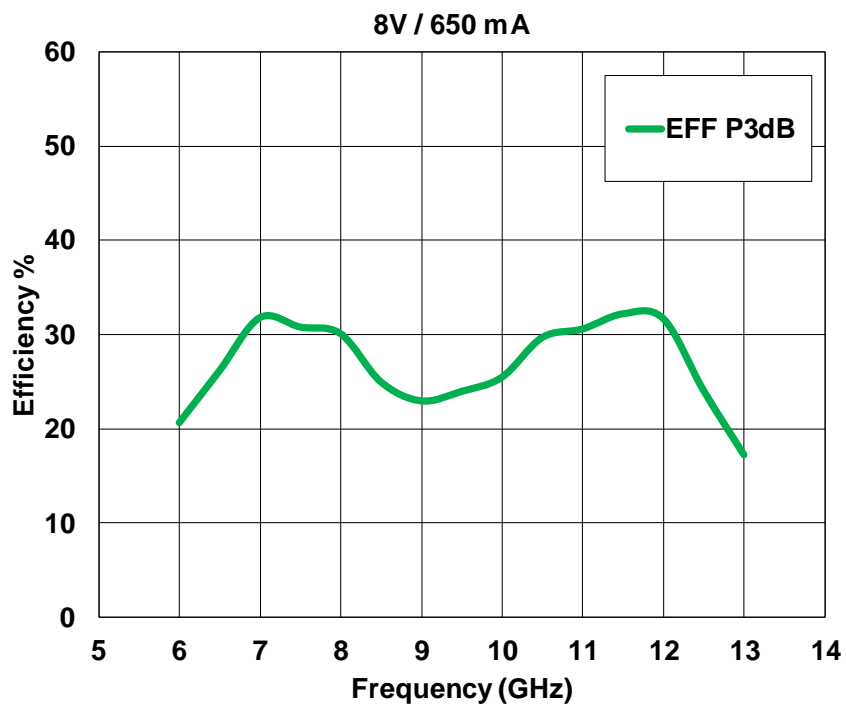
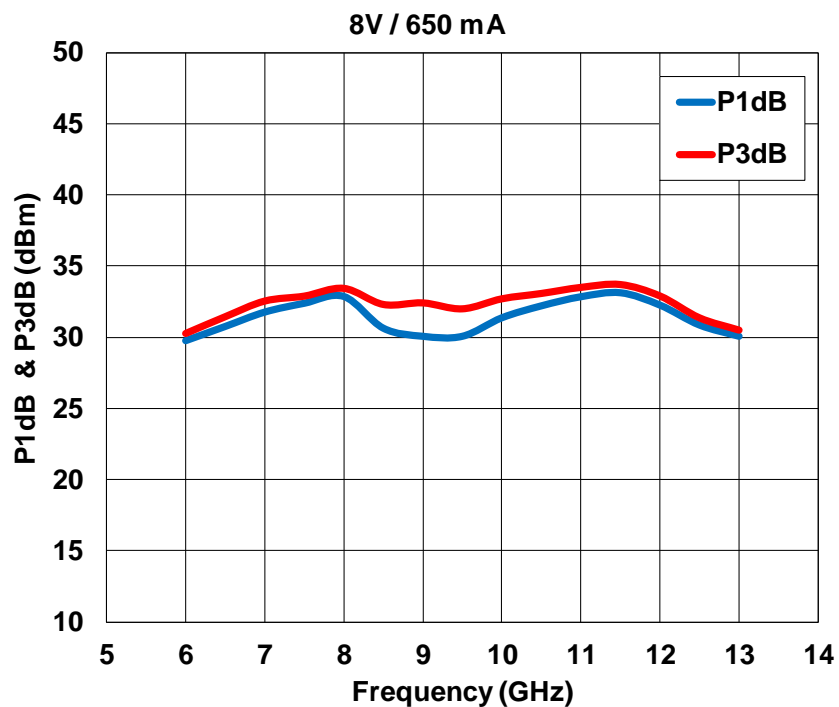
Parameters	Symbol	Rating
Drain voltage	$V_{ds}$	10V
Gate voltage	$V_{gs}$	-4V
Total Drain current	$I_{dsq}$	1.1A
Continuous dissipation at 25°C	$P_t$	8W
Channel temperature	$T_{ch}$	175°C
Operating temperature	$T_{op}$	-40°C to +85°C
Storage temperature	$T_{sto}$	-55°C to +135°C

## SMALL SIGNAL DATA\*

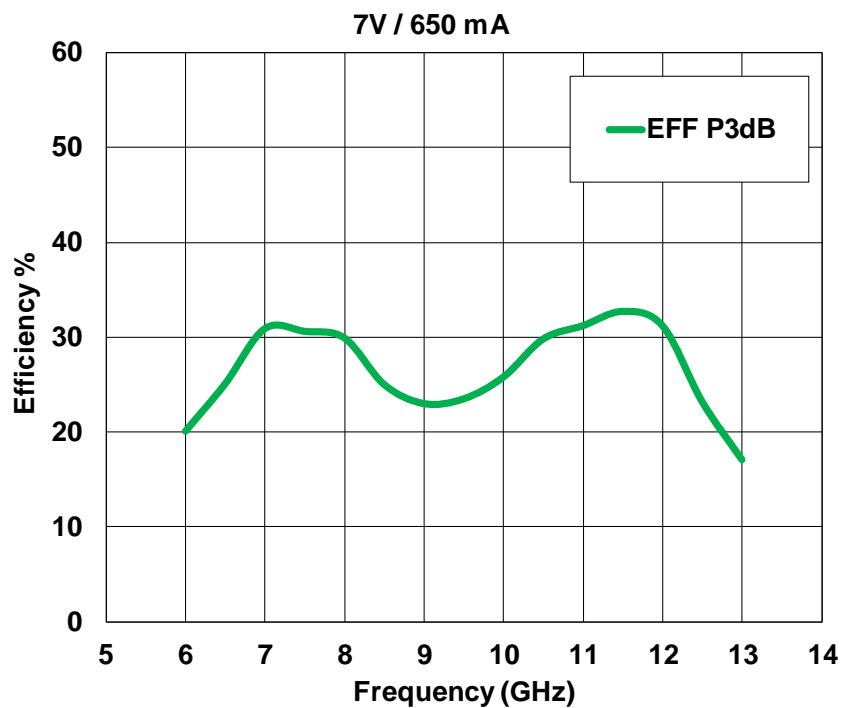
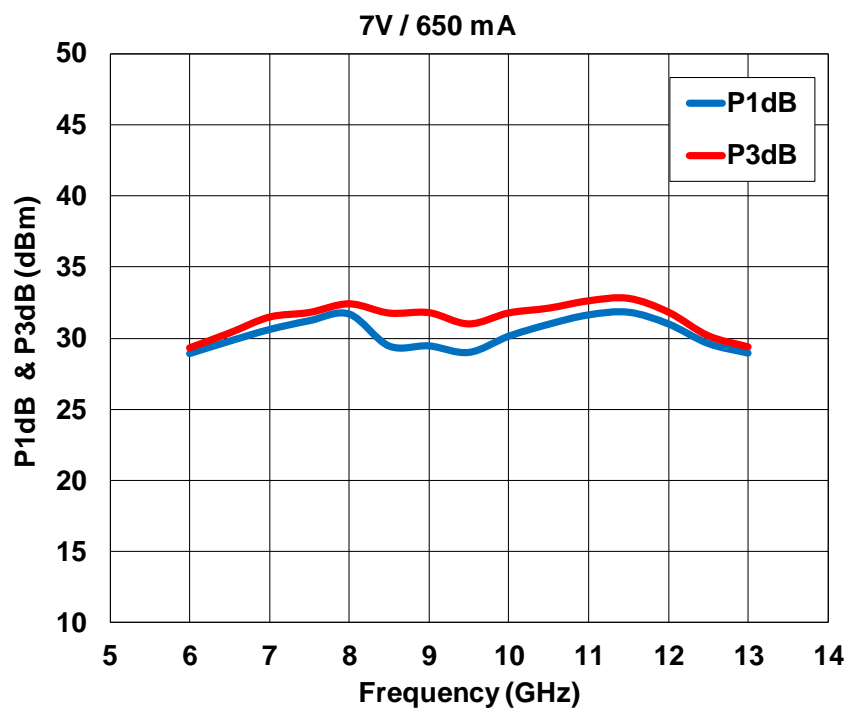


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## POWER DATA

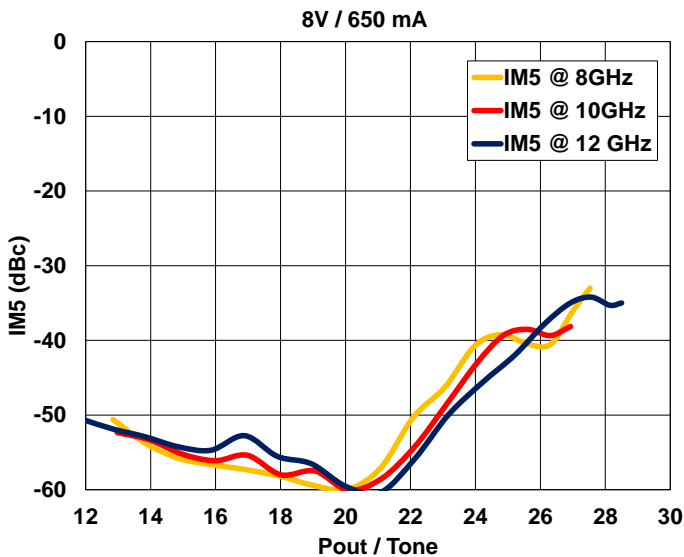
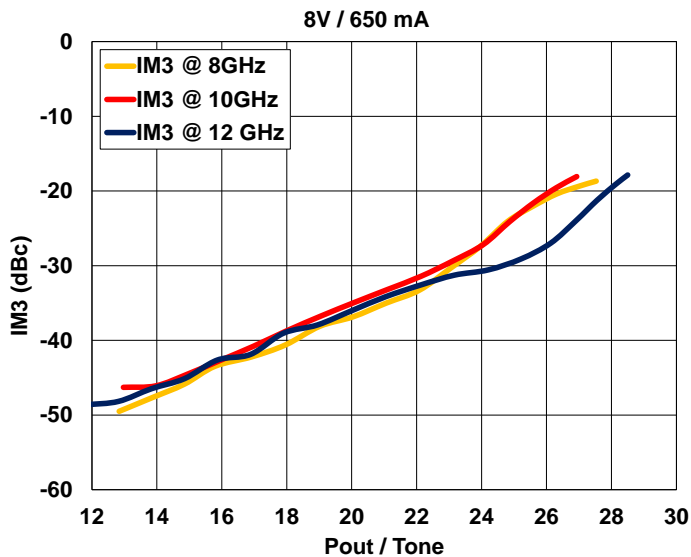
A) Bias  $V_{ds}=+8V$ ,  $I_{ds}=650mA$ 

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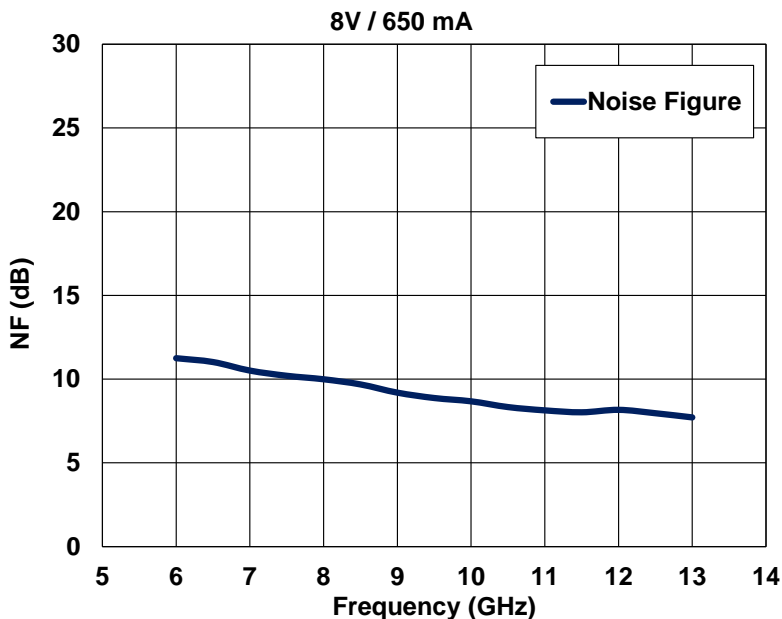
B) Bias  $V_{ds}=+7V$ ,  $I_{ds}=650mA$ 

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IM3/IM5 MEASUREMENTS



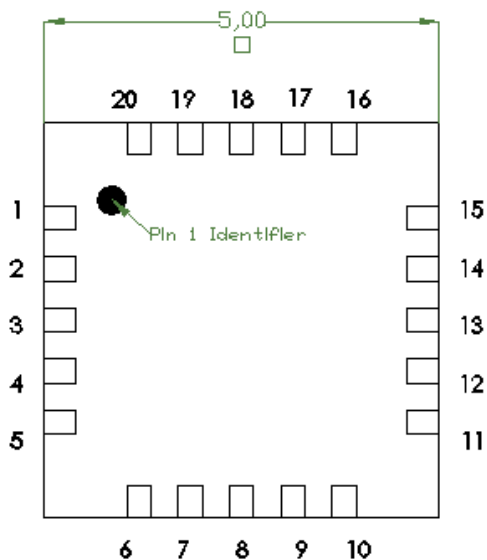
NOISE FIGURE



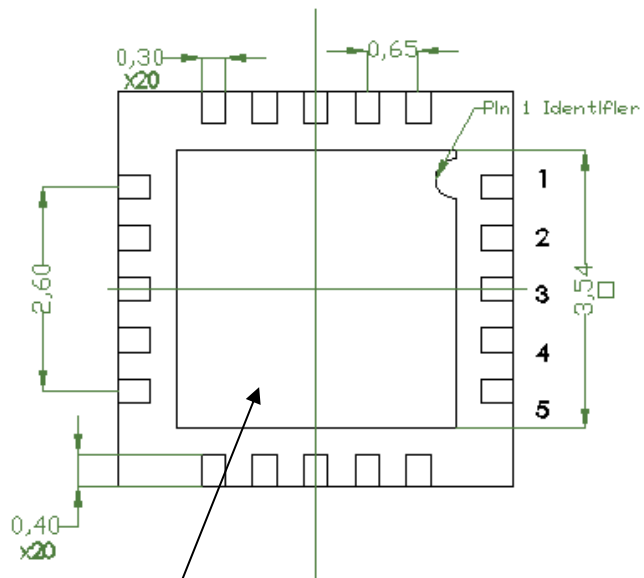
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PACKAGE DIMENSIONS

Top View



Bottom View

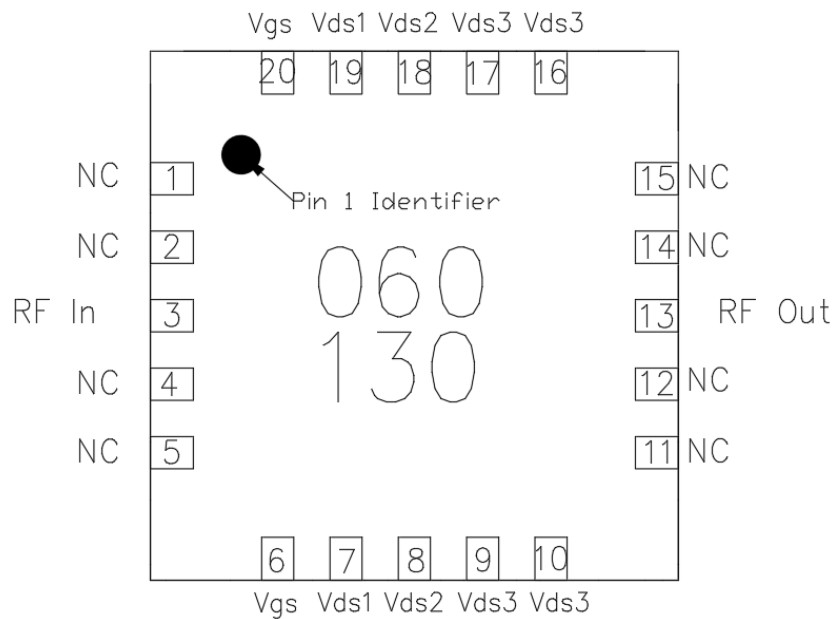


Notes:

1. Dimensions are in mm
2. Package is QFN 5x5 mm / 20 pins
3. Package Base should be grounded

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## PIN CONFIGURATION



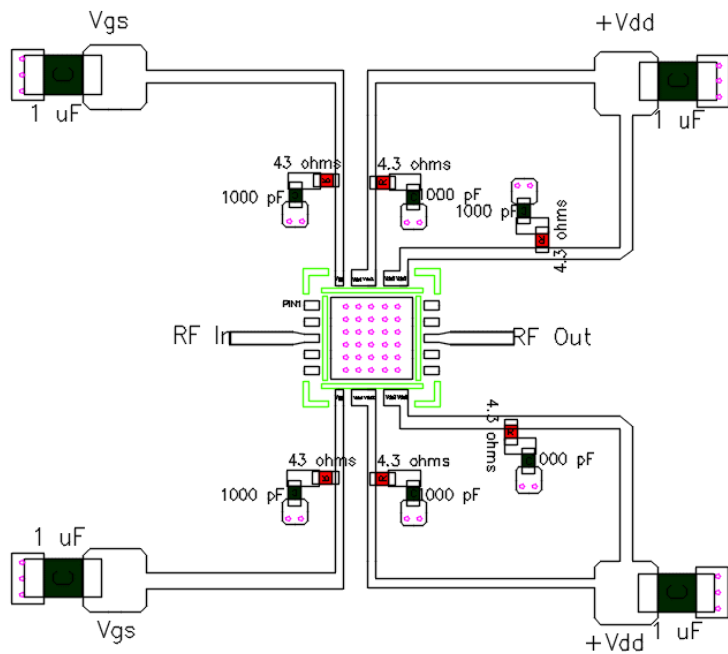
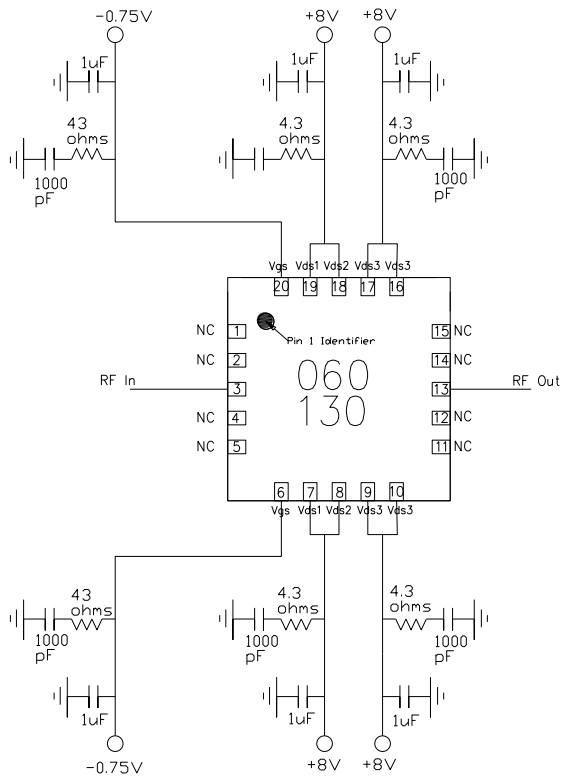
Pin No.	Function	Bias
3	RF In	-
6,20	V <sub>gs</sub>	-0.75V
7,19	V <sub>ds1</sub>	+8V
8,18	V <sub>ds2</sub>	+8V
9,10,16,17	V <sub>ds3</sub>	+8V
13	RF Out	-
Base	GND	GND
1,2,4,5,11,12,14,15	NC	N/A

## Notes:

- 1- NC pins can be grounded
- 2- Package Base should be grounded with sufficient vias

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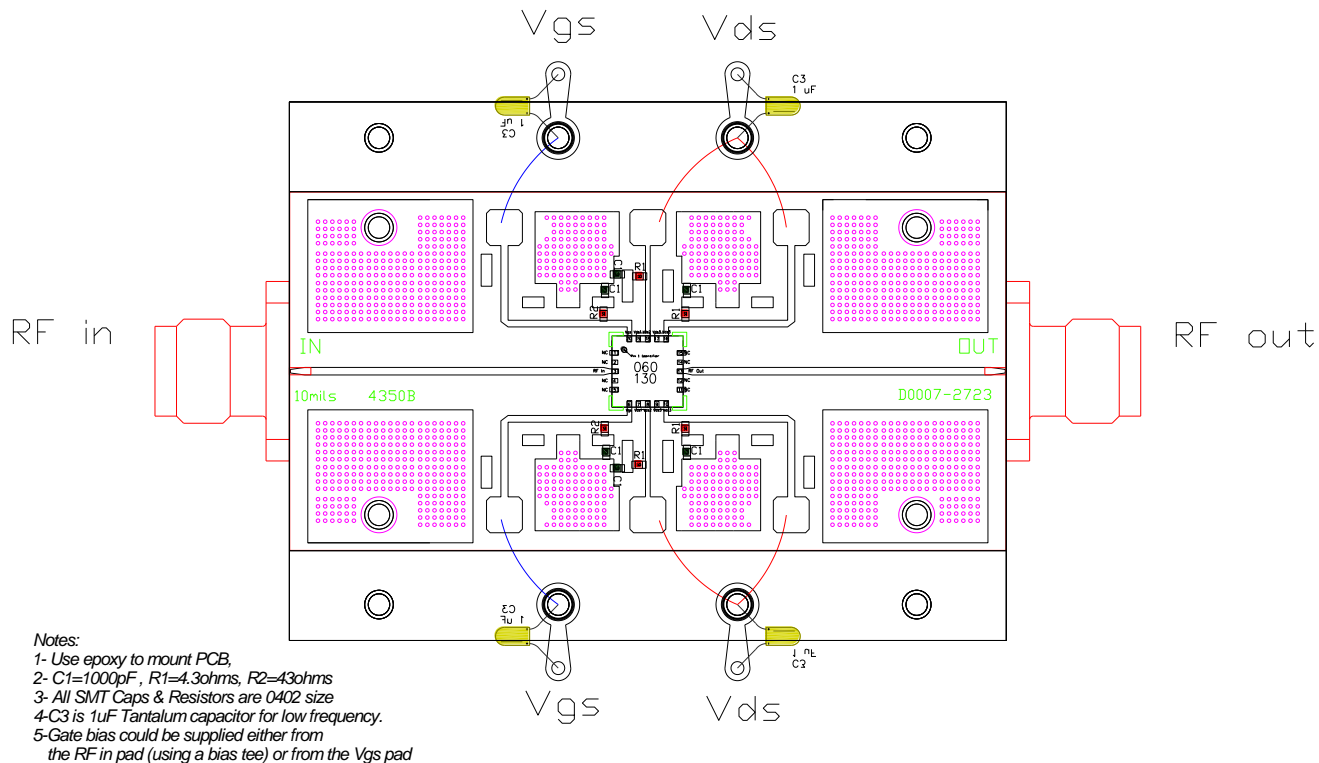
CIRCUIT SCHEMATIC





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## AMCOM'S EVB (Available)

Turn On:

- 1) Set Vgs to -2V
- 2) Set Vds to 8V
- 3) Adjust Vgs to a get Ids of 650mA
- 4) Apply RF in

Turn Off:

- 1) Turn off RF
- 2) Set Vgs to -2V
- 3) Set Vds to 0V
- 4) Set Vgs to -0V