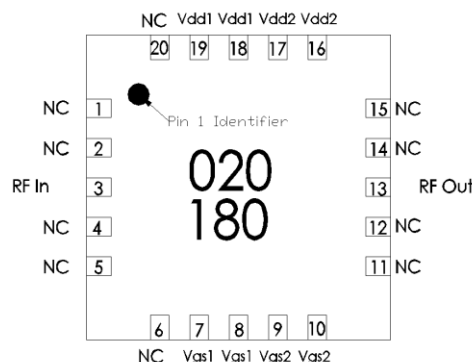


DESCRIPTION

AMCOM's AM02018026WM-QN5-R is a broadband GaAs MMIC Distributed Power Amplifier which operates between 2 and 18 GHz. This amplifier has 23 dB gain, and 26 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 2 to 18GHz
- Saturated output power P_{sat} is 26 dBm
- Gain, 23dB
- Input & output matched to 50 Ohms

APPLICATIONS

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

TYPICAL PERFORMANCE *

Bias Conditions:** $V_{dd} = +15V$, $I_{dd} = 180mA$

Parameters	Minimum	Typical **	Maximum
Frequency	2.5 – 16 GHz	2 – 18 GHz	
Small Signal Gain	20	23	
Gain Ripple		± 1.5dB	± 3.0dB
P1dB (DC-12 GHz)	-	24dBm	
P3dB (DC-12 GHz)	23dBm	26dBm	
P1dB (12-18 GHz)		23dBm	
P3dB (12-18 GHz)	22dBm	25dBm	
NF(dB)		4.5	
Input Return Loss		10dB	
Output Return Loss		10dB (15 GHz) 7dB (18GHz)	

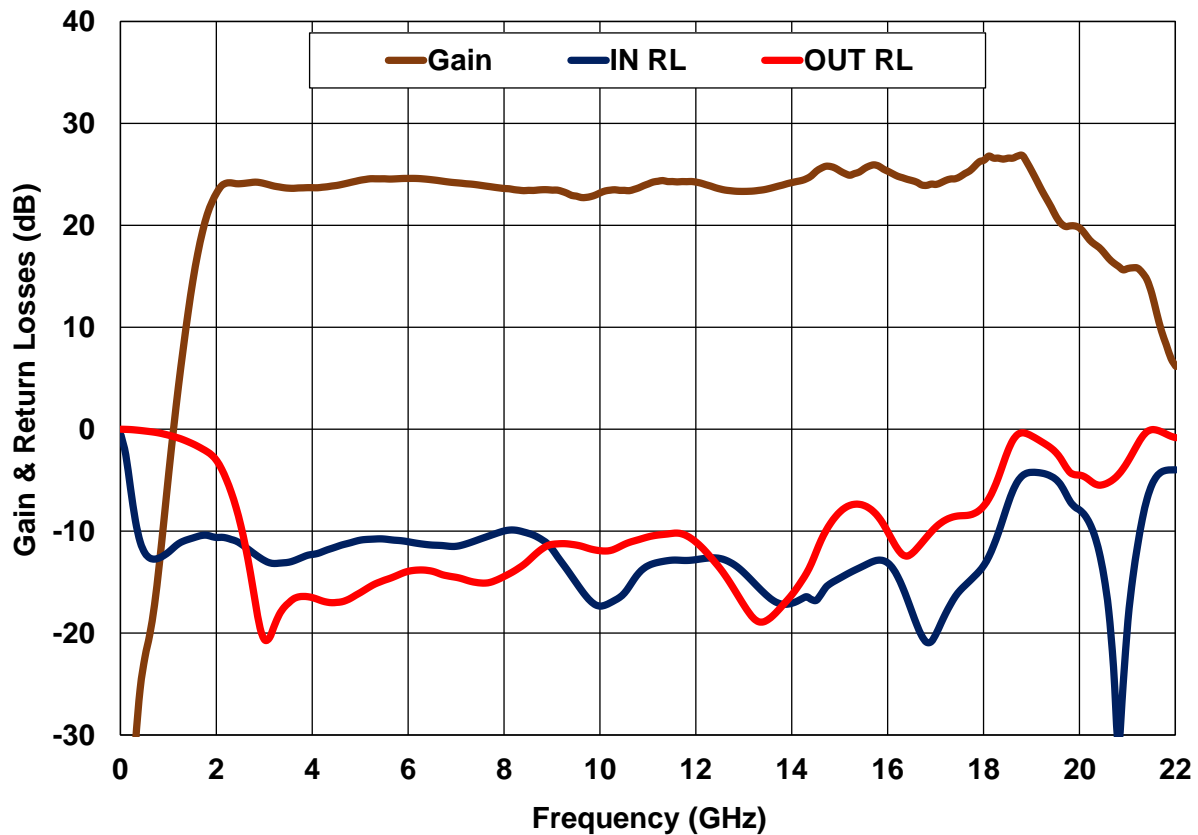
* Specifications subject to change without notice

ABSOLUTE MAXIMUM RATING

Parameters	Symbol	Rating
Drain voltage	V_{ds}	15.5V
Gate voltage	V_{gs}	-4V
Continuous dissipation at 25°C	P_t	3W
Channel temperature	T_{ch}	175°C
Operating temperature	T_{op}	-40°C to +85°C
Storage temperature	T_{sto}	-55°C to +135°C

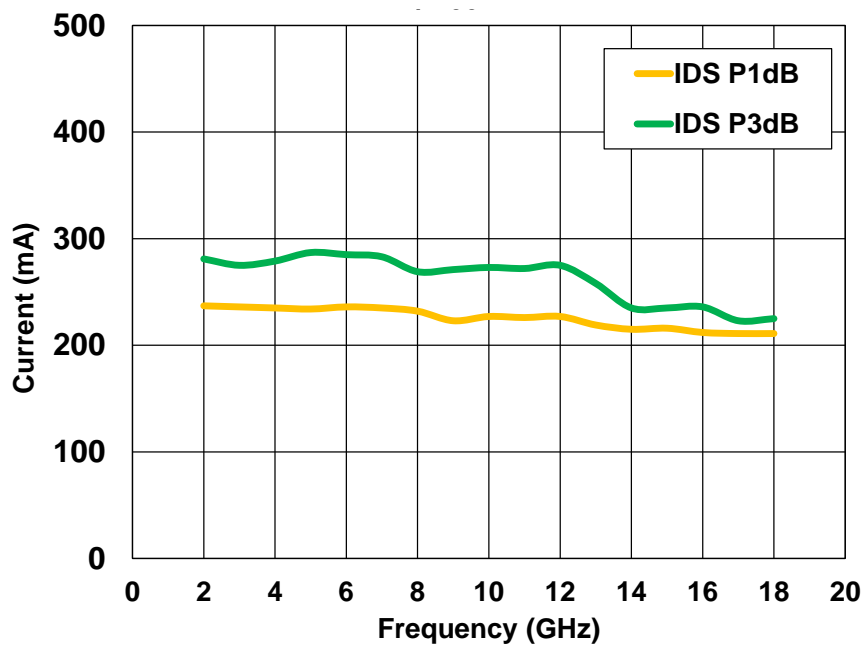
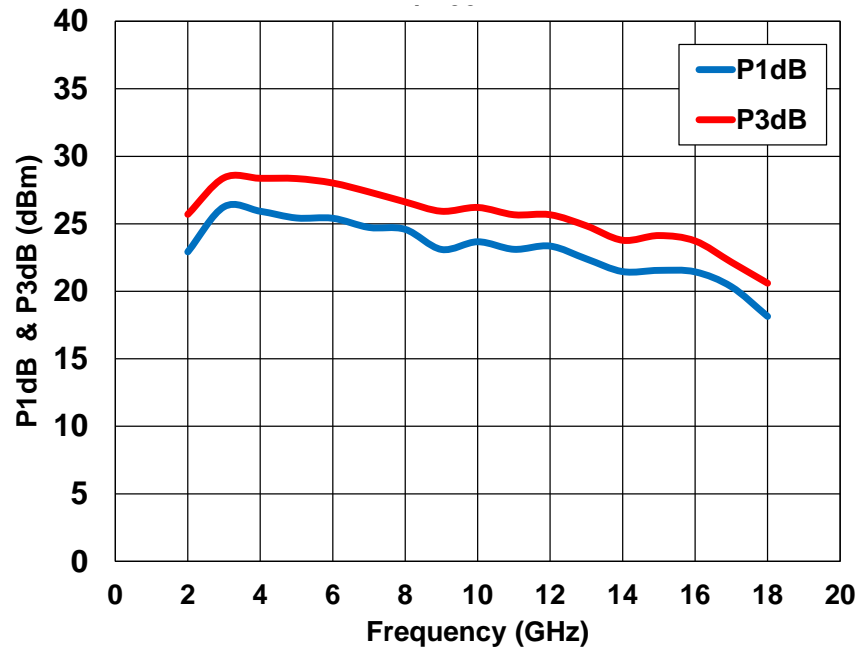
SMALL SIGNAL DATA*

$V_{dd} = +15V, I_{dd} = 180mA$



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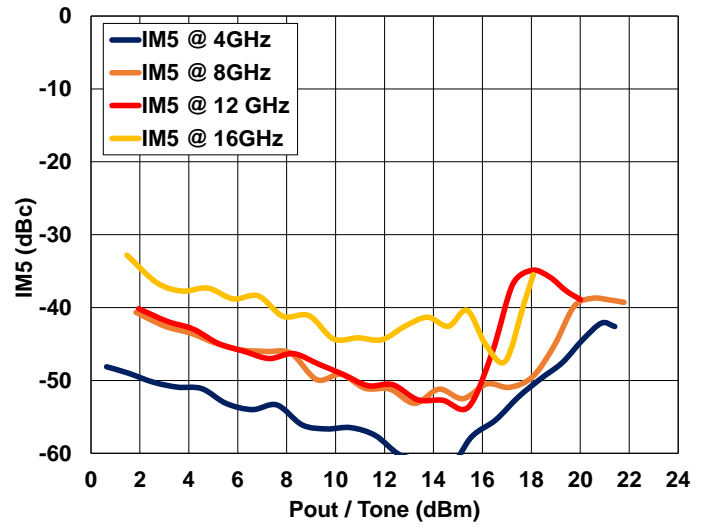
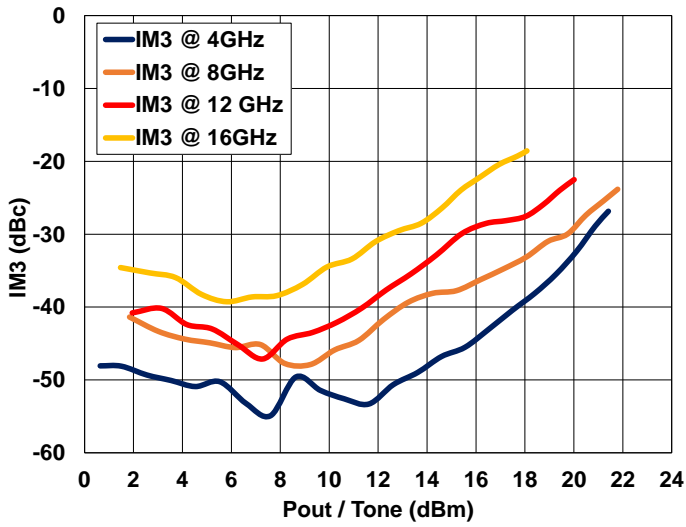
POWER DATA

A) Bias $V_{dd}=+15V$, $I_{dd}=180mA$ 

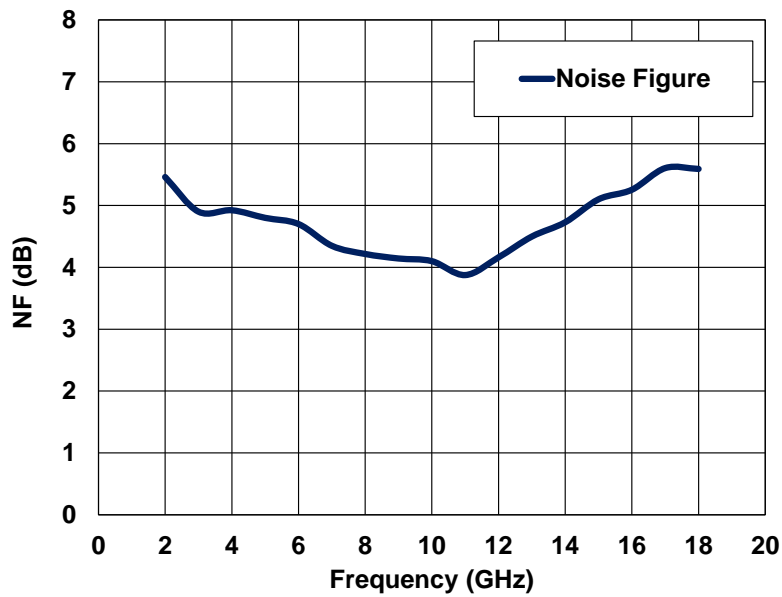
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IM3/IM5 MEASUREMENTS

Bias $V_{dd}=+15V$, $I_{dd}=180mA$



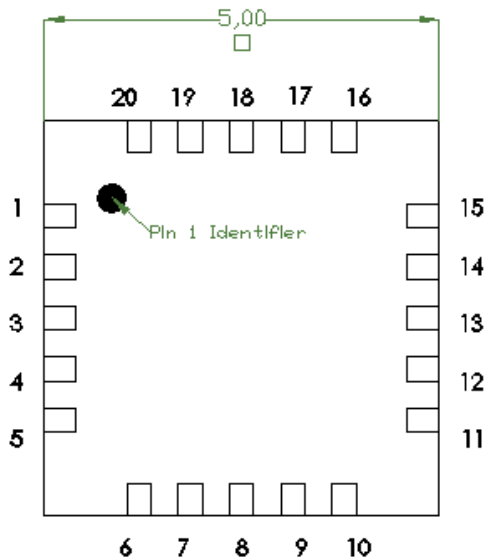
NOISE FIGURE



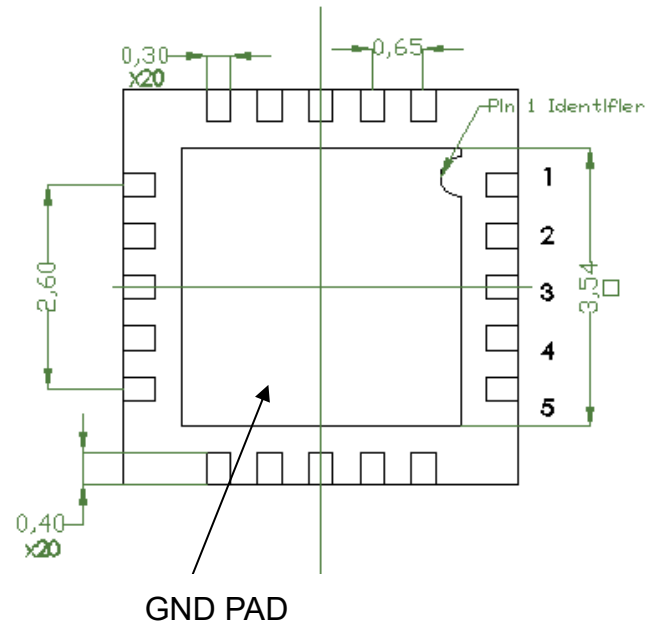
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PACKAGE DIMENSIONS

Top View



Bottom View

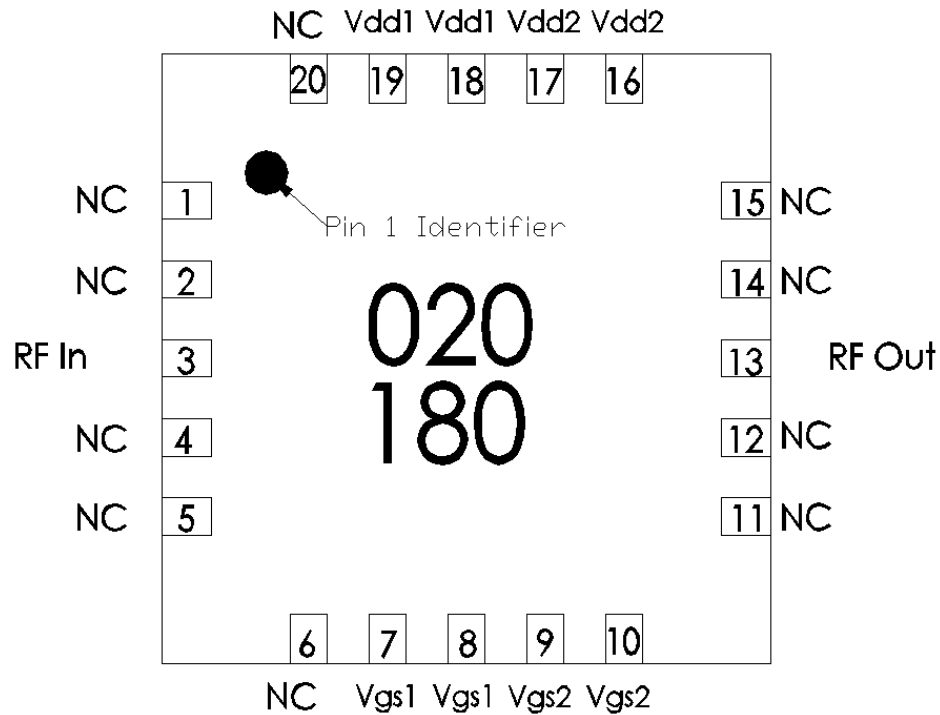


Notes:

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



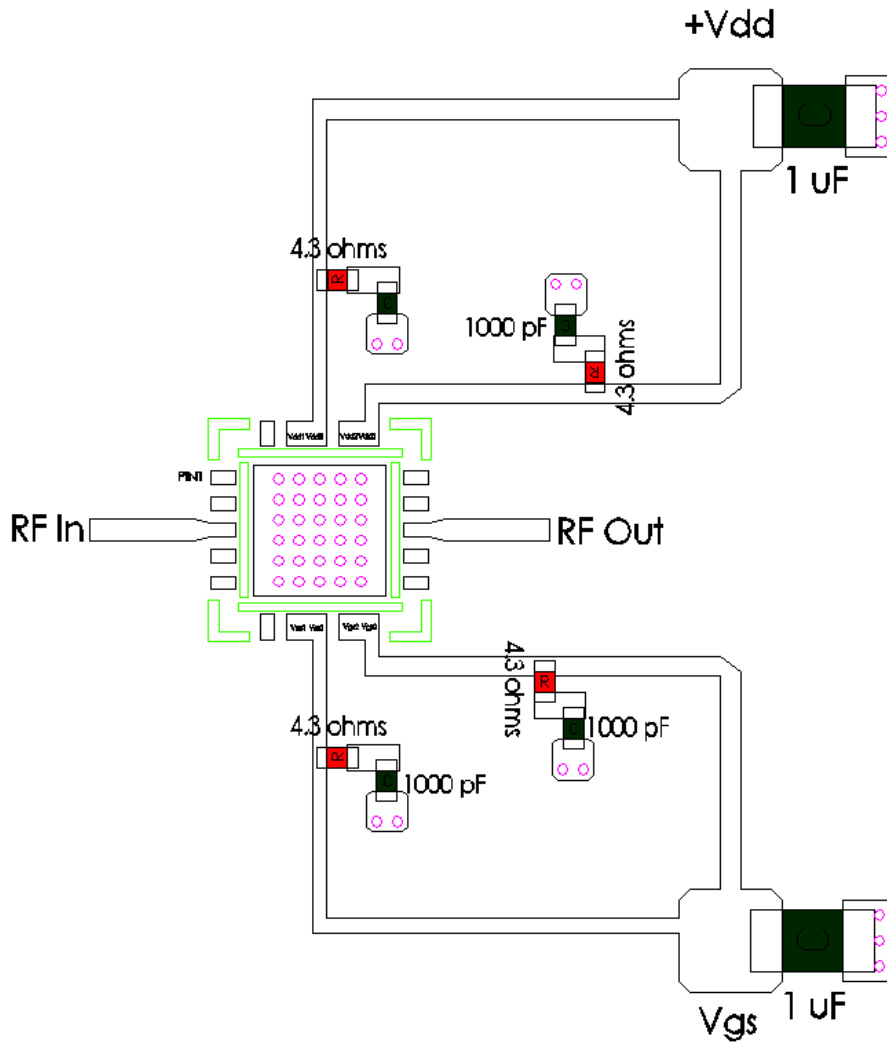
Pin No.	Function	Bias
3	RF In	-
18,19	V _{dd1}	+15V
17,16	V _{dd2}	+15V
13	RF Out	-
9,10	V _{gs2}	-0.85V
7,8	V _{gs1}	-0.85V
Base	GND	GND
1,2,4,5,6,11, 12,14,15,20	NC	N/A

Notes:

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

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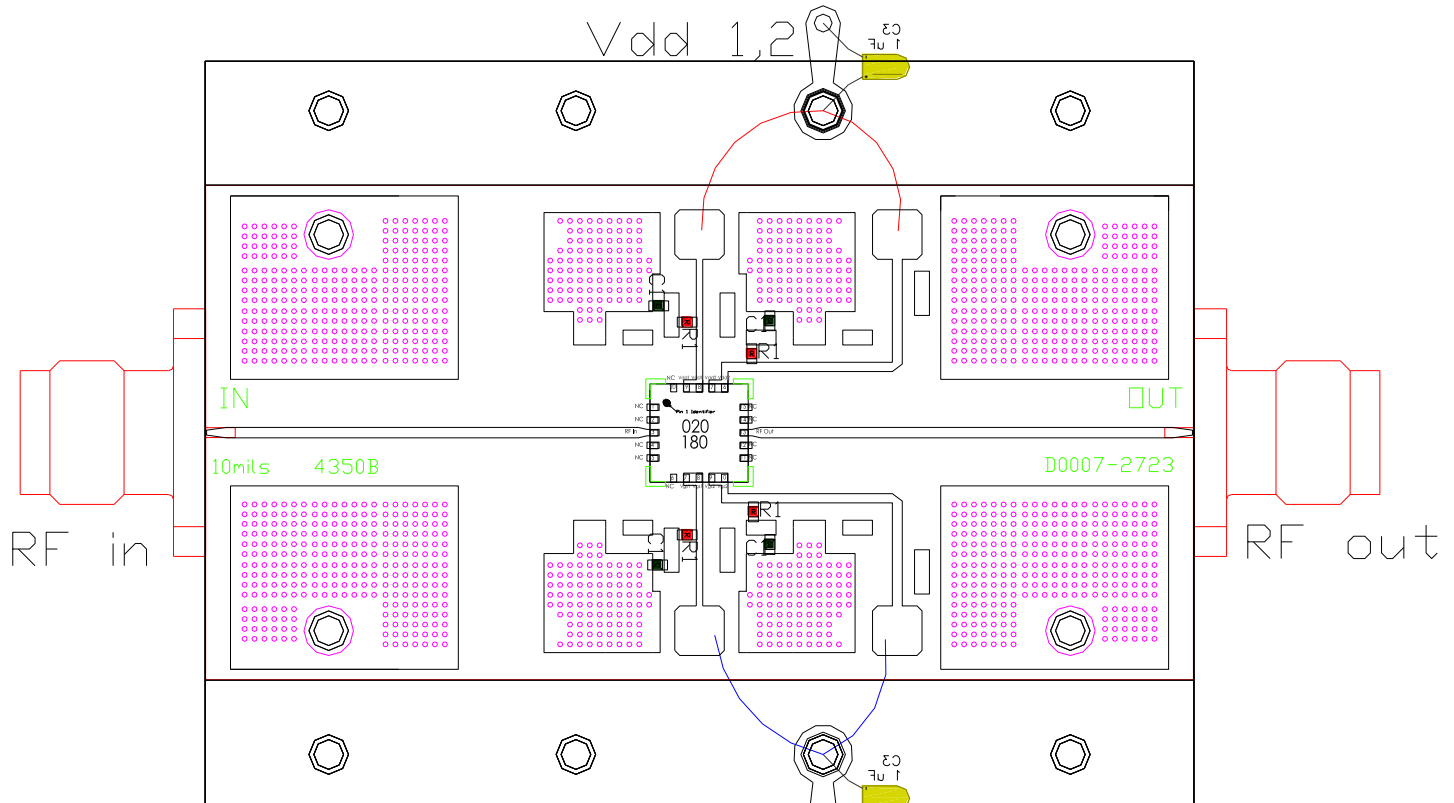
APPLICATION CIRCUIT (Circuit schematic)



Notes:

- 1- Do not apply Vds without proper negative voltage on Vgs.
- 2- Component PCB pad is 3.3x3.3 mm
- 3- Use 1uF Tantalum capacitors

AMCOM'S EVB (Available)



Notes:

- 1- Use epoxy to mount PCB,
- 2- C1=1000pF, R1=4.3ohms
- 3- All SMT Caps & Resistors are 0402 size
- 4-C3 is 1uF Tantalum capacitor for low frequency.

Turn On:

- 1) Set Vgs to -2V
- 2) Set Vdd to 15V
- 3) Adjust Vgs to a get Ids of 180mA
- 4) Apply RF in

Turn Off:

- 1) Turn off RF
- 2) Set Vgs to -2V
- 4) Set Vdd to 0V
- 5) Set Vgs to 0V