

DESCRIPTION

AMCOM's AM02018026WM-00-R is a broadband GaAs MMIC Distributed Power Amplifier die which operates between 2 and 18 GHz. This amplifier has 23.5dB gain, and 26 dBm output power. The chip Input and output are internally matched to 50 Ohms. All data is taken with the chip connected via 2 x (1 mil) wire bonds of minimal length 15 mils.

FEATURES

- Ultra-Broadband from 2 to 18GHz
- Saturated output power P_{sat} is 26 dBm
- Gain, 23.5dB
- 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 | 23.5 | |
| 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

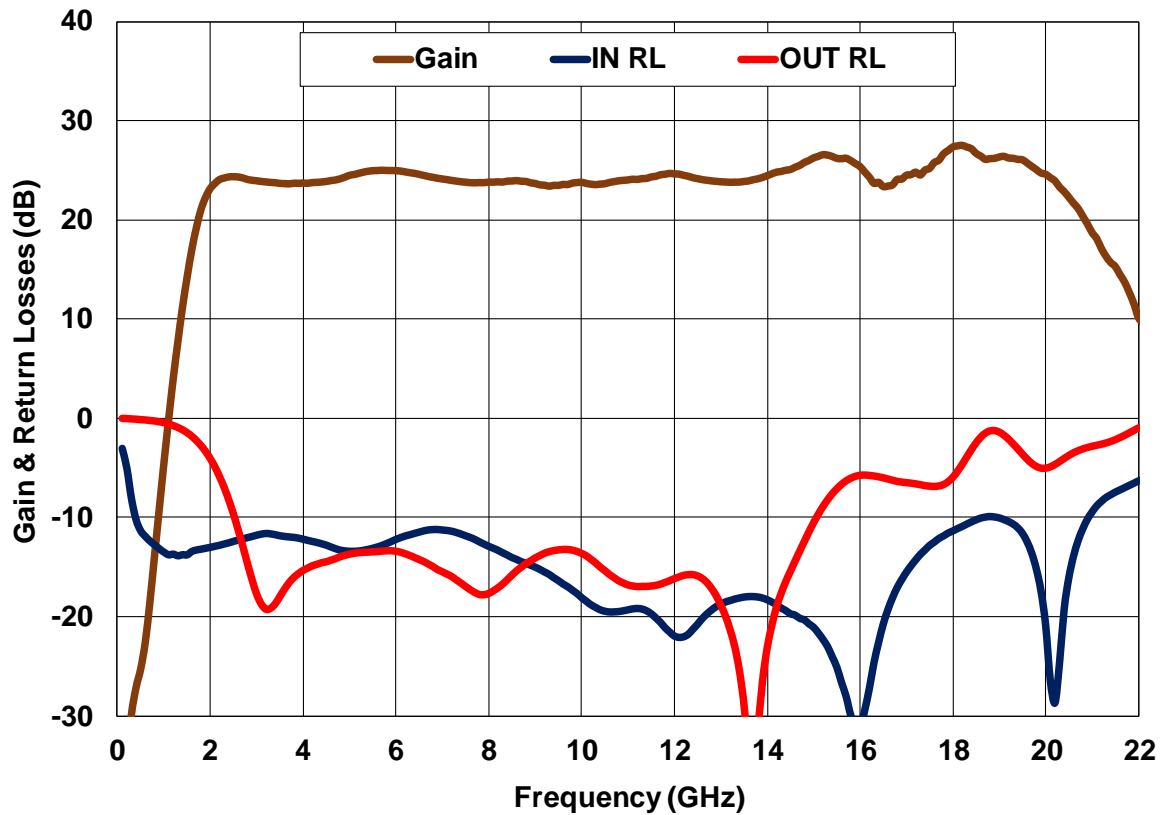
ABSOLUTE MAXIMUM RATING

| 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*

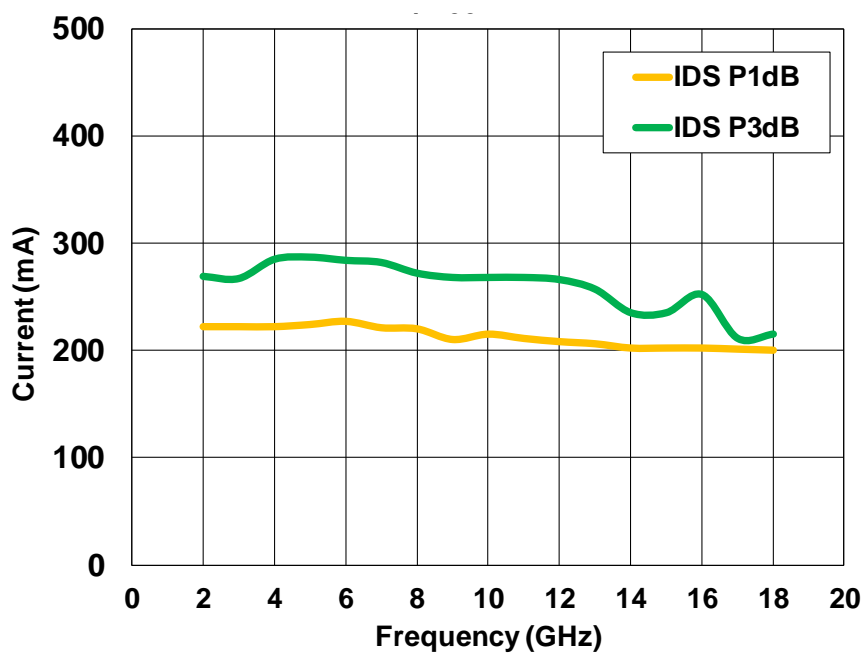
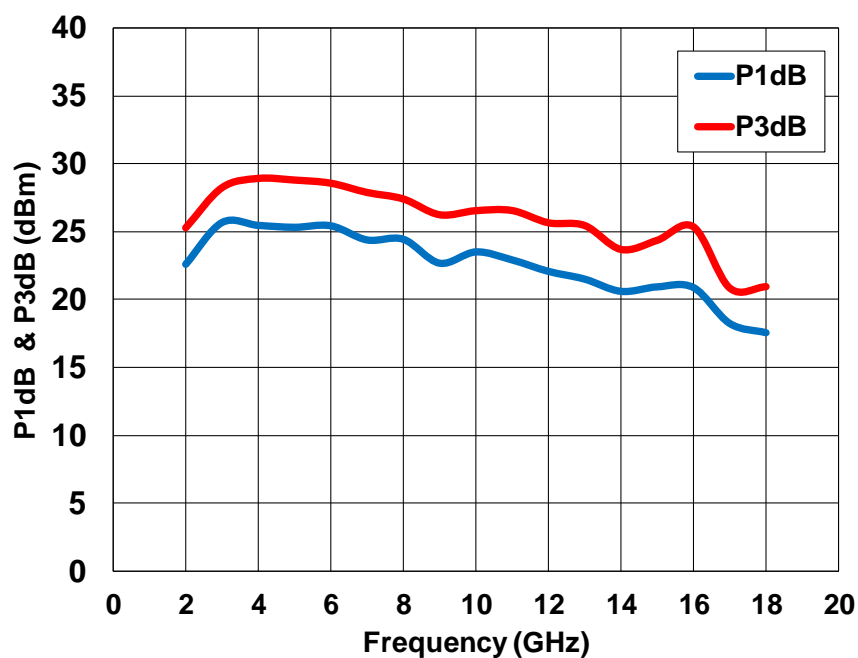
Bare Die MMIC S-Parameters (AM02018026WM-00-R)

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

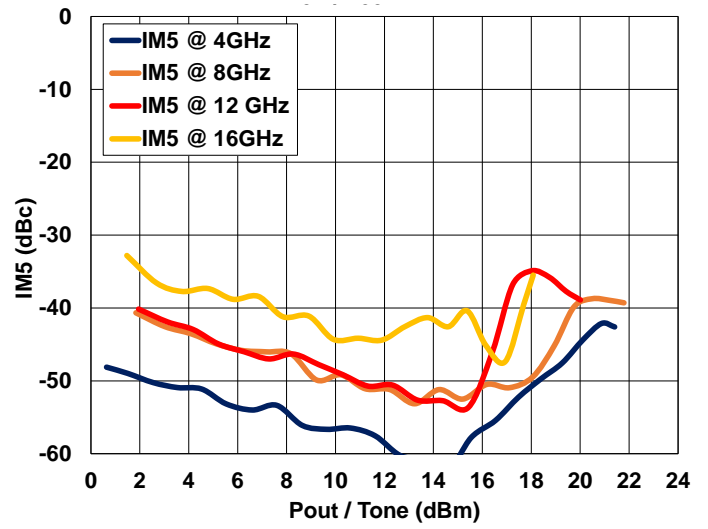
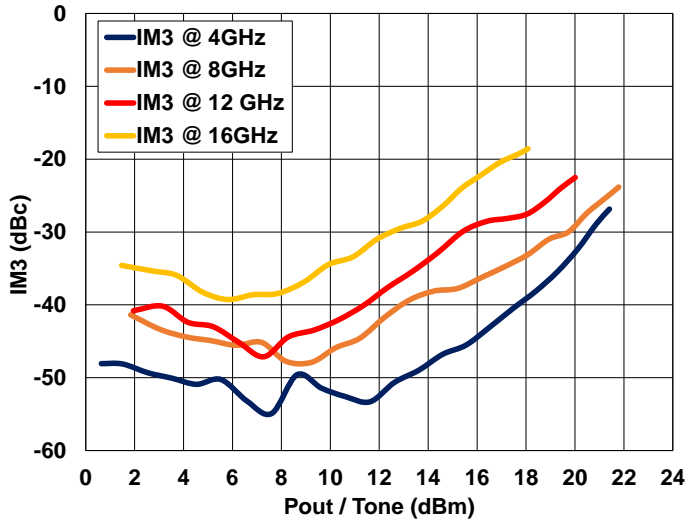


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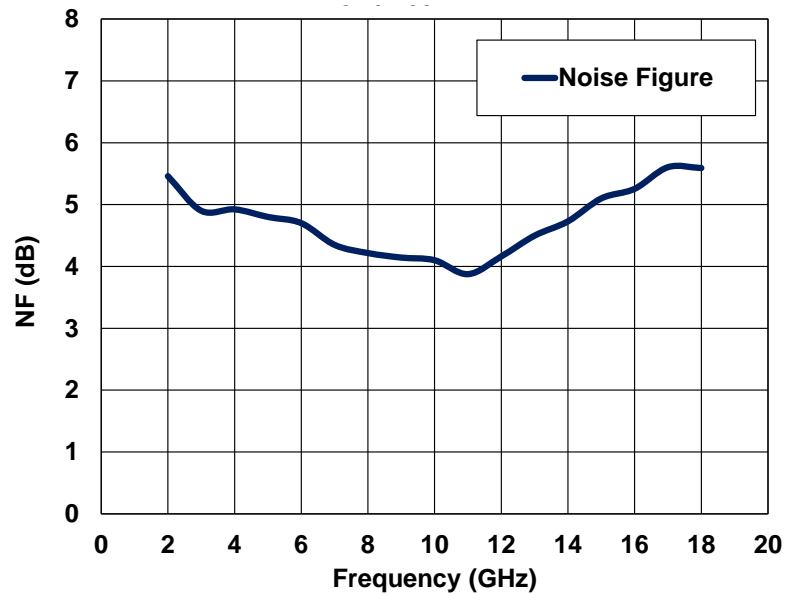
POWER DATA

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

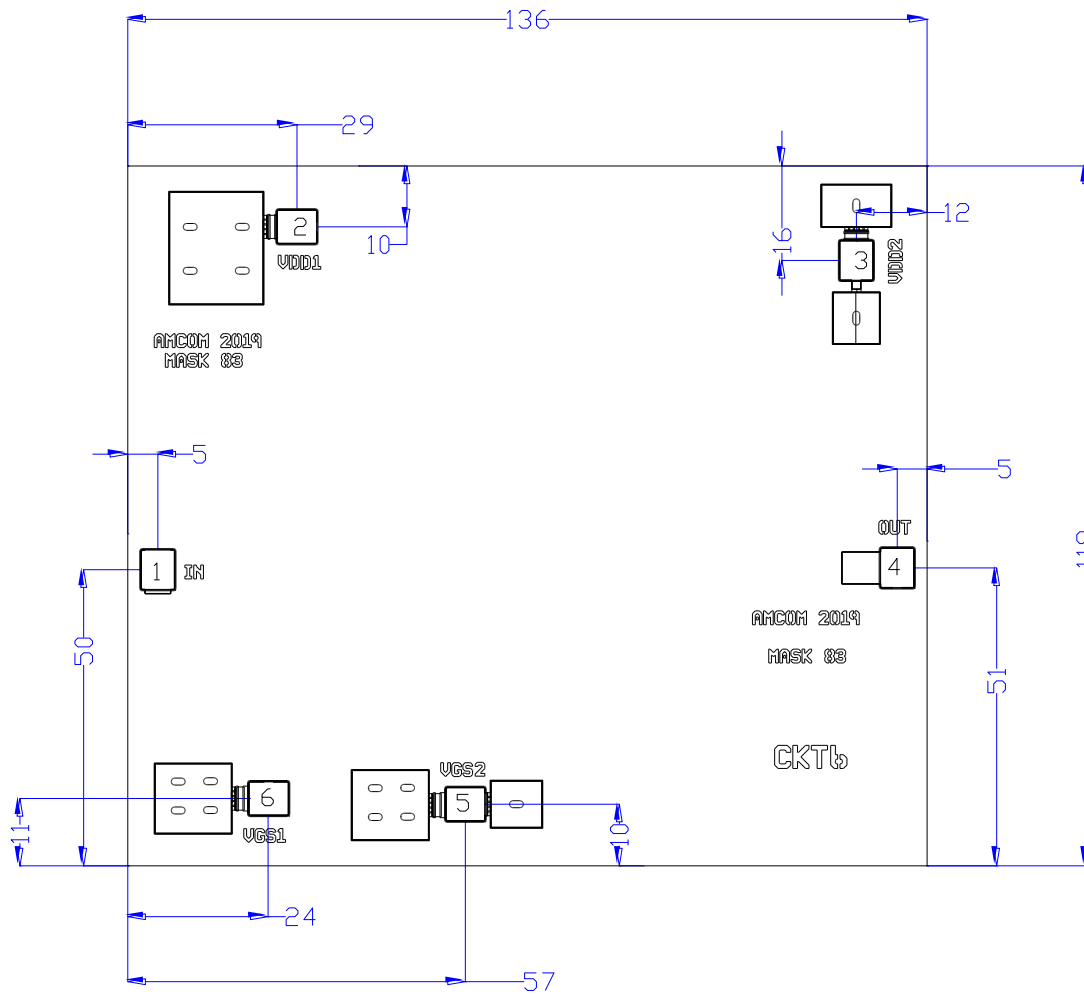
IM3/IM5 MEASUREMENTS



NOISE FIGURE



CHIP OUTLINE



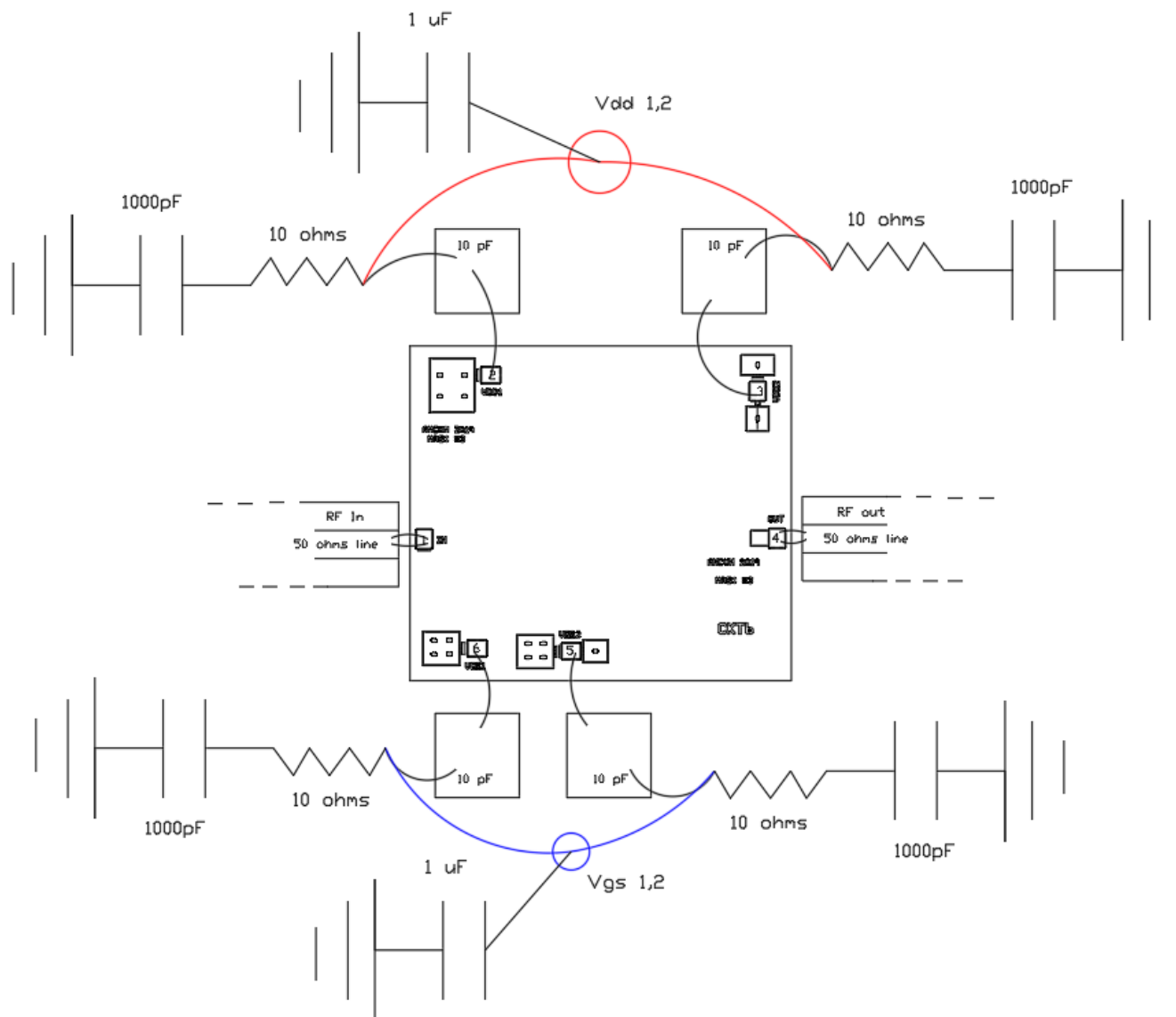
| Pin No. | Function | Bias |
|---------|------------------|--------|
| 1 | RF In | - |
| 2 | V _{dd1} | +15V |
| 3 | V _{dd2} | +15V |
| 4 | RF Out | - |
| 5 | V _{gs2} | -0.85V |
| 6 | V _{gs1} | -0.85V |

Notes:

- 1- Dimensions in mils
- 2- All pads are 6x6 mils
- 3- Use eutectic perform for chip assembly.
- 4- For best performance IN and Out bond wires should not exceed 15mils length

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APPLICATION CIRCUIT (Circuit schematic)

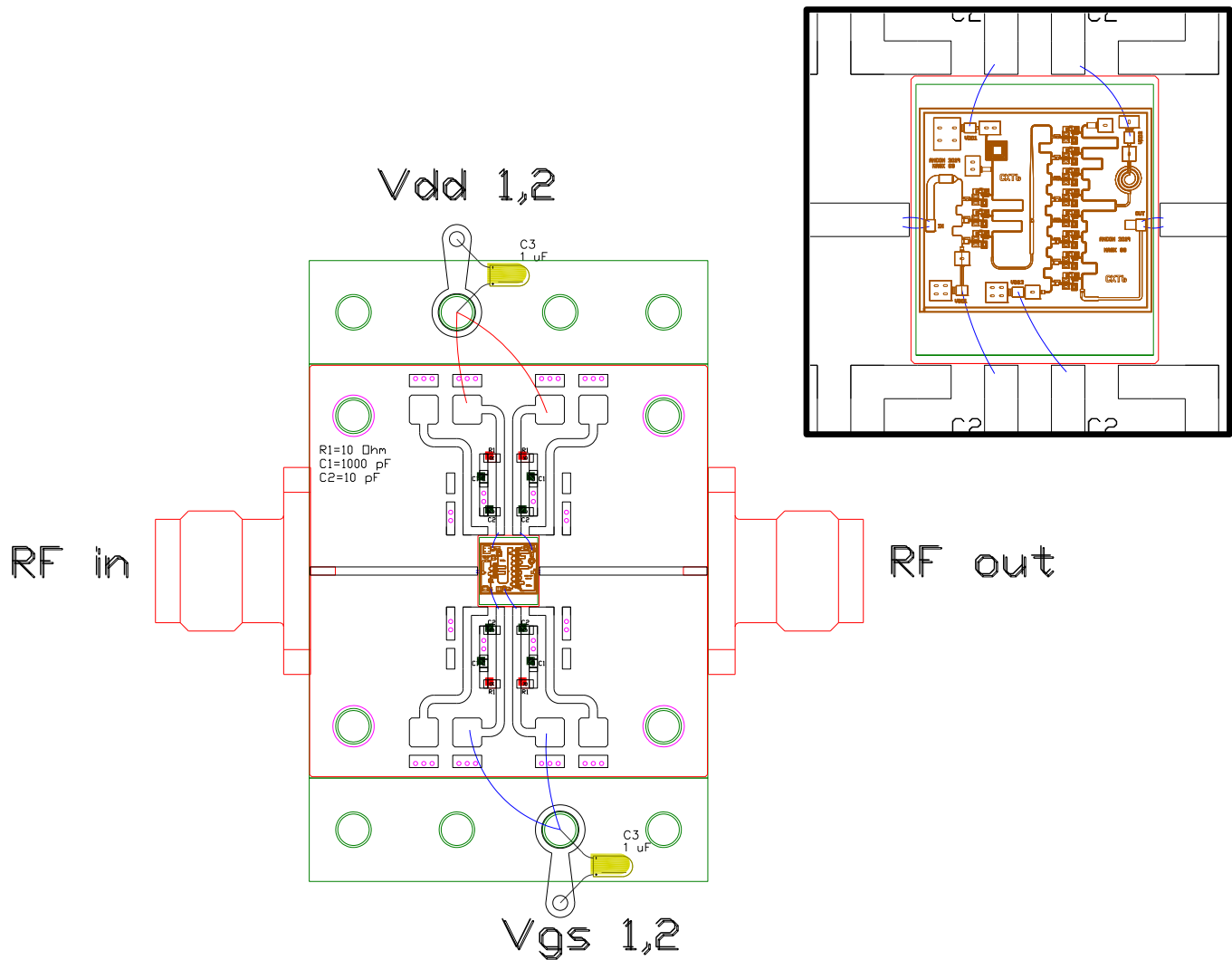


Notes:

- 1- Do not apply Vds without proper negative voltage on Vgs.
- 2- Use eutectic soldering to mount the chip
- 3- For best performance input and output bond wires should not exceed 15mils length

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AMCOM'S EVB (Available)

**Notes:**

- 1- Use epoxy to mount PCB, and Eutectic soldering to mount chip
- 2- C1=1000pF, C2=10pF, R1=5ohms
- 3- All SMT Caps & Resistors are 0402 size
- 4-C3 is 1uF Tantalum capacitor for low frequency.
- 5-For best performance input and output bond wires should not exceed 15mils length