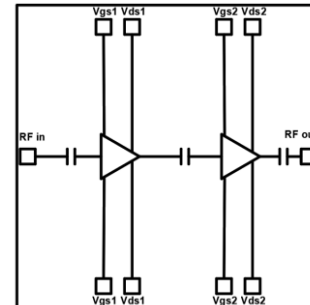




DESCRIPTION

AMCOM's AM08012041WM-00 Chip is a broadband GaN MMIC power amplifier. It has 22dB gain, and 42 dBm output power over the 7.5 to 12.5GHz band. This MMIC is matched to 50 Ohms.



FEATURES

- Broadband from 7.5 to 12.5GHz
- Saturated output power Psat is 42dBm
- High gain, 22dB
- Input & output matched to 50 Ohms

APPLICATIONS

- Instrumentation
- Commercial telecom transmission equipment
- Fixed microwave backhaul

TYPICAL PERFORMANCE

Parameters	Minimum	Typical **	Maximum
Frequency	8.0–12.0 GHz	7.5–12.5 GHz	
Small Signal Gain	17dB	22dB	
Gain Ripple		± 4.0dB	± 5.0dB
P1dB		38dBm	
Psat	40dBm	42dBm	
Psat Efficiency		22%	
Noise Figure		TBD	
IP3		TBD	
Input Return Loss		7dB	
Output Return Loss		8dB	
Thermal Resistance		1.0 °C/W	

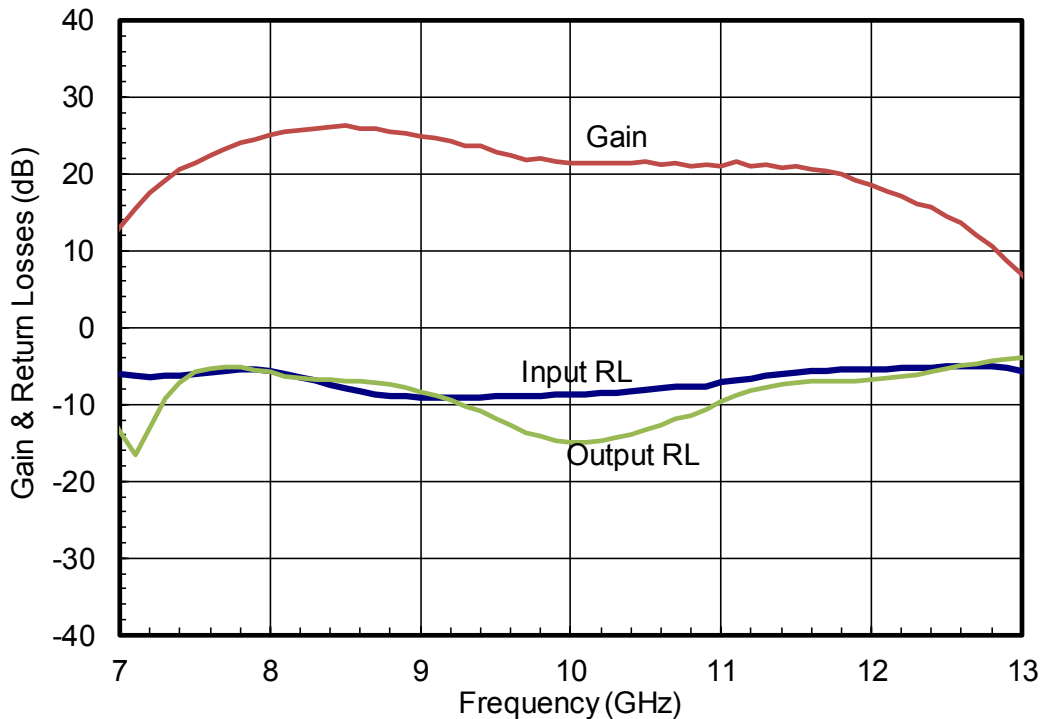
* Specifications subject to change without notice.

** Bias Conditions is: $V_{ds1} = +28V$, $I_{dsq1} = 0.45A$, $V_{ds2} = +28V$, $I_{dsq2} = 0.90A$, $V_{gs1} = V_{gs2} = -1.9V$.

ABSOLUTE MAXIMUM RATING

Parameters	Symbol	Rating
First & second stage drain voltages	V_{ds1}	32V
Second stage drain voltage	V_{ds2}	32V
Gate source voltage	V_{gs1} & V_{gs2}	-6V
Drain source current	I_{dsq1}	0.75A
Drain source current	I_{dsq2}	1.5A
Continuous dissipation at 25°C	P_t	80W
Channel temperature	T_{ch}	200°C
Operating temperature	T_{op}	-55°C to +85°C
Storage temperature	T_{sto}	-55°C to +135°C

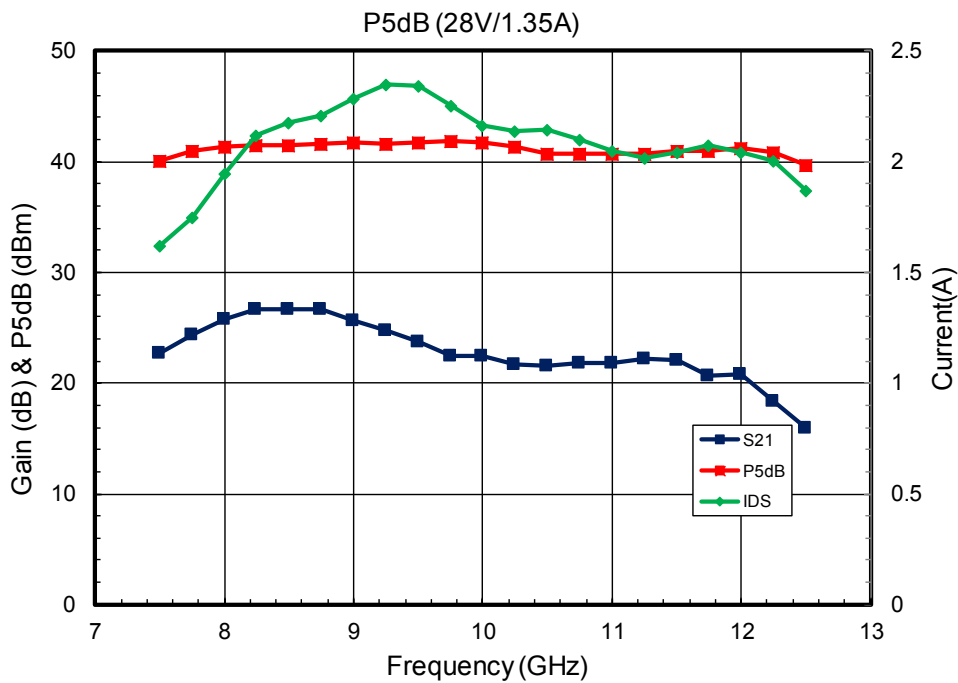
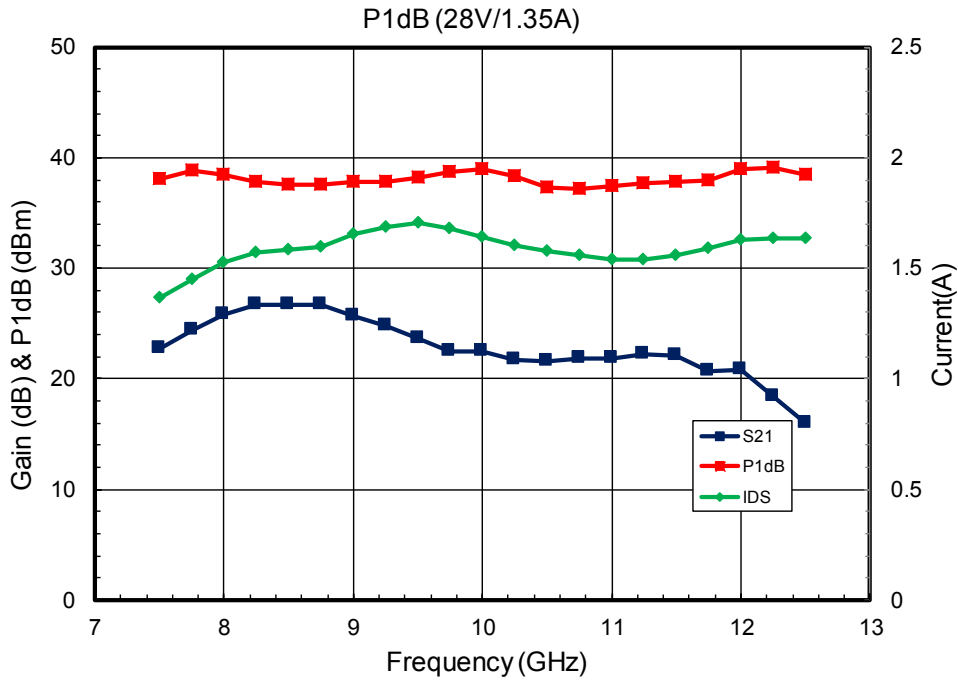
SMALL SIGNAL DATA



* S-Parameters measured using test fixture. Bias is $V_{ds1} = V_{ds2} = +28V$, $I_{ds1} = 450mA$, $I_{ds3} = 900mA$, $V_{gs1} = V_{gs2} = -1.9V$.

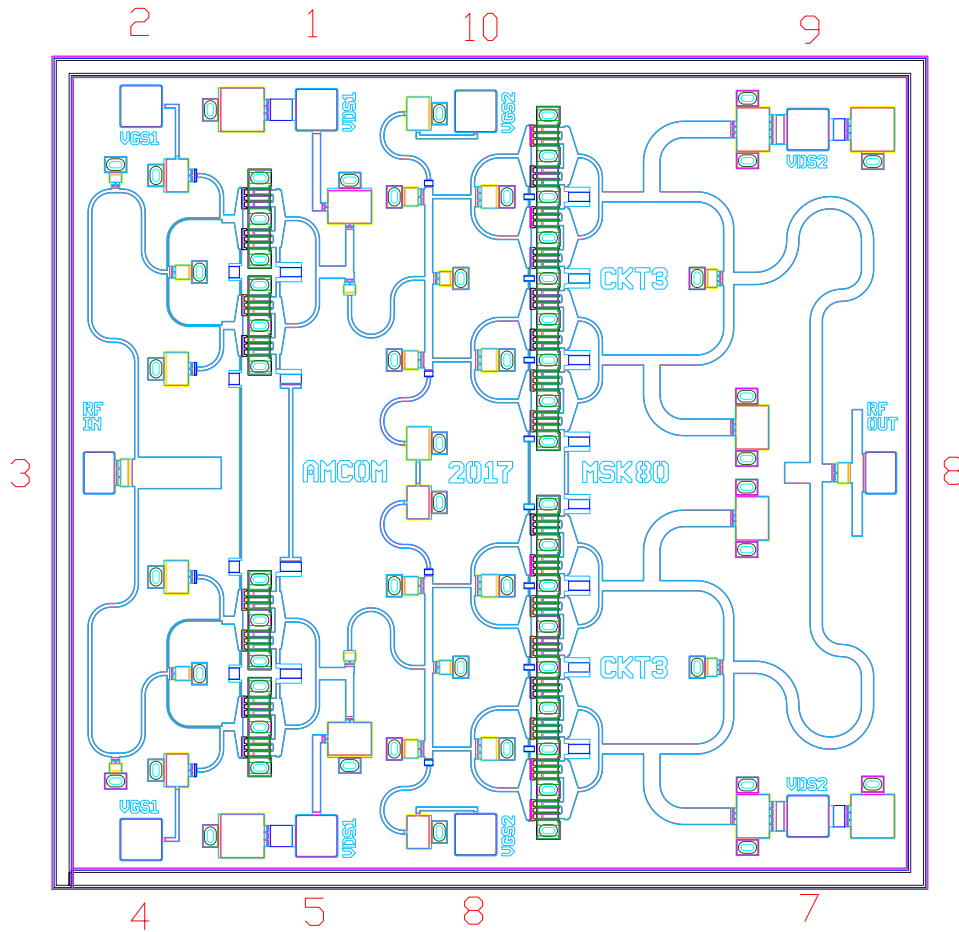
POWER DATA

A) CHIP DATA**



** Power measured using test fixture. Bias is $V_{ds1} = V_{ds2} = +28V$, $I_{ds1} = 450mA$, $I_{ds2} = 900mA$, $V_{gs1} = V_{gs2} = -1.9V$.

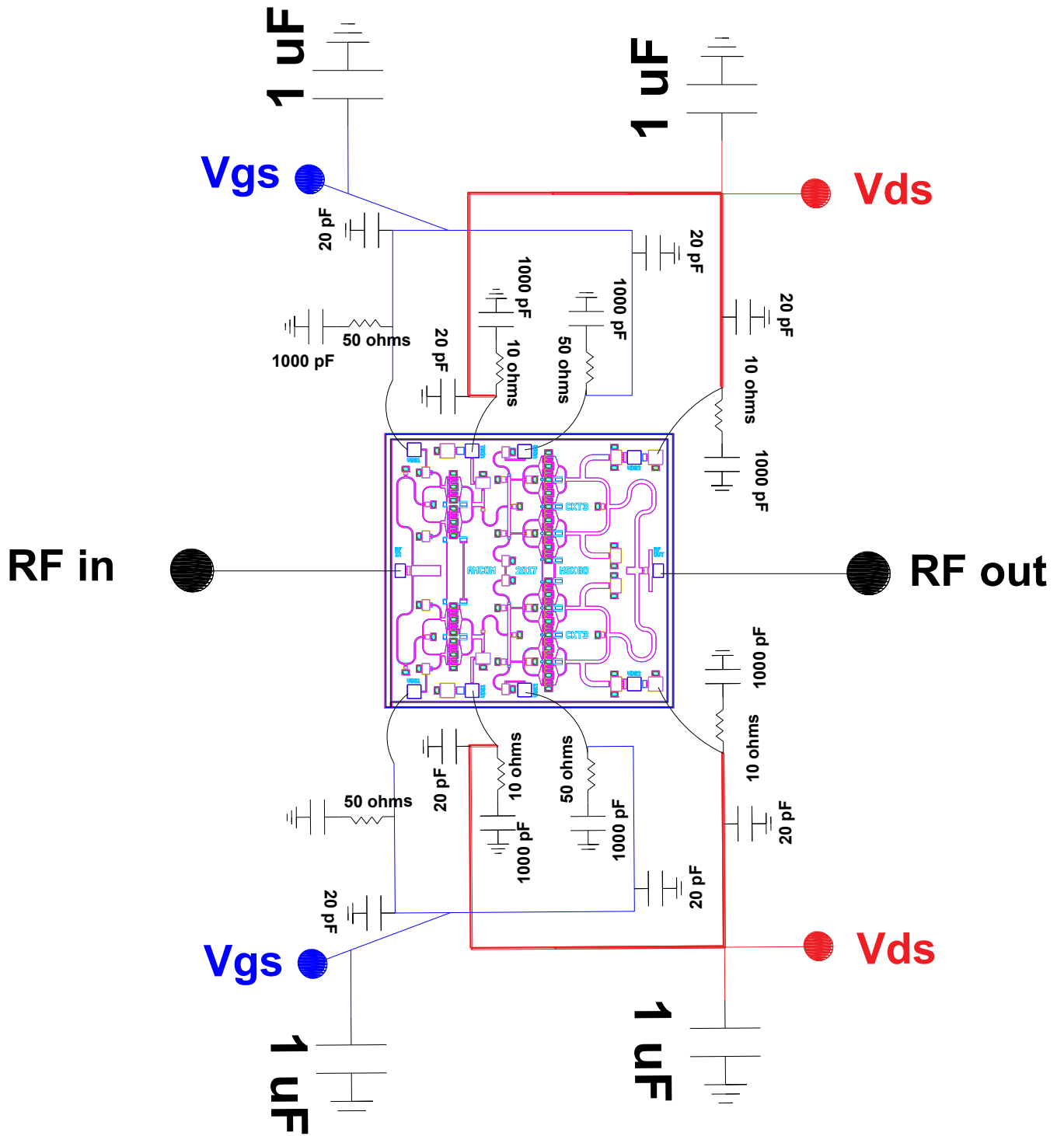
CHIP OUTLINE



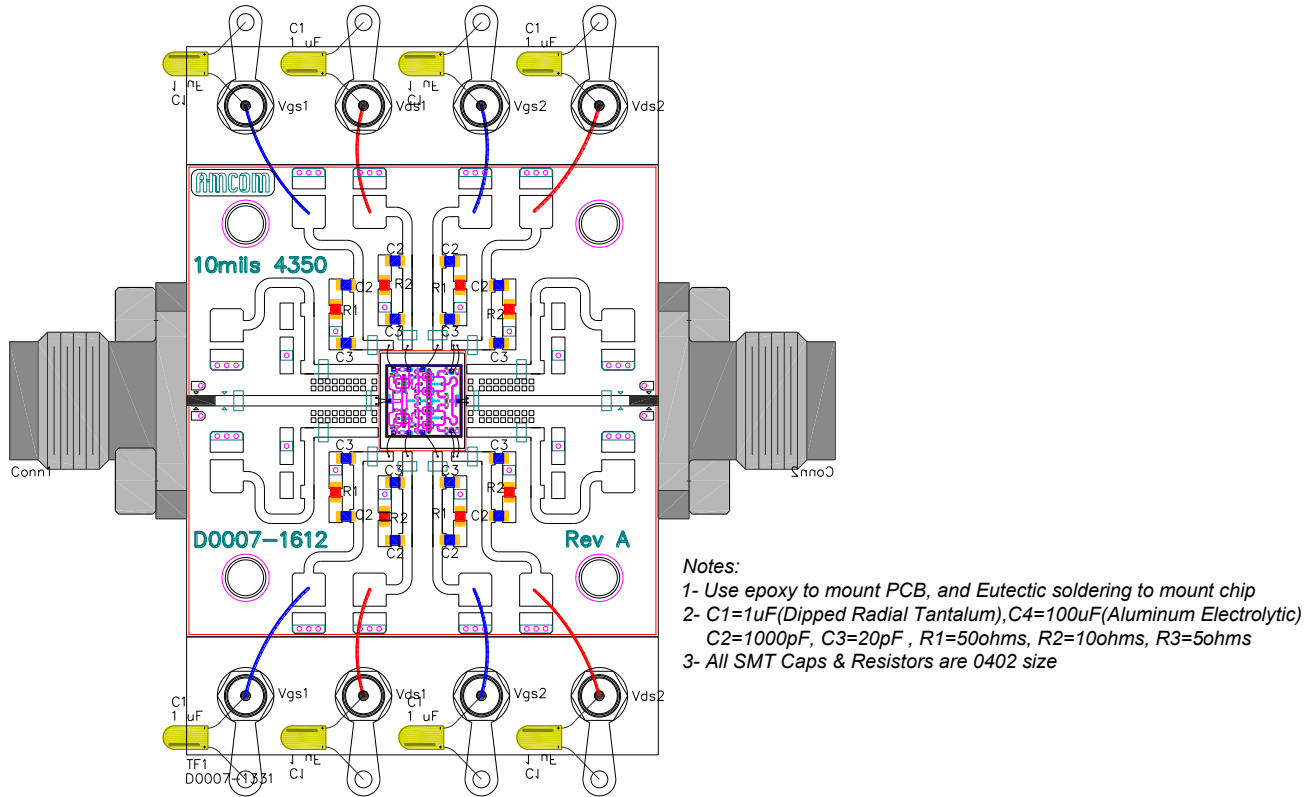
Chip size is: 4000 x 3800 microns

PAD No.	Function	Bias
1	Vds1	+28V
2	Vgs1	-1.9V
3	RF in	-
4	Vgs1	-1.9V
5	Vds1	+28V
6	Vgs2	-1.9V
7	Vds2	+28V
8	RF out	-
9	Vds2	+28V
10	Vgs2	-1.9V

CIRCUIT SCHEMATIC



CHIP TEST CIRCUIT



Important Notes:

- 1- Recommended current biases are 360mA for the first stage and 900mA for the second stage. Gate biases of -1.9 V are for reference only. V_{gs1} & V_{gs2} could be adjusted to vary the currents going thru the first stage (V_{ds1} pins) & second stage (V_{ds2} pins).
- 2- Do not apply V_{ds1} or V_{ds2} without proper negative voltages on V_{gs1} & V_{gs2} . Otherwise MMIC would fail due to excess current and heat.
- 3- AutoCAD DXF available.