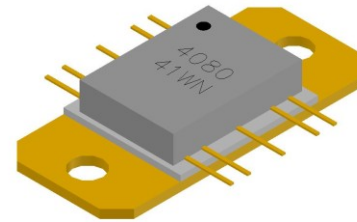




DESCRIPTION

AMCOM's AM408041WN-SN-R is in a ceramic package with a flange and straight RF and DC leads for drop-in assembly. It has 31dB gain, and 41.5 dBm output power over the 3.75 to 8.25 GHz band. Because of high DC power dissipation, good heat sinking is required. The package is RoHS compliant. This MMIC is matched to 50 Ohms.



FEATURES

- Broadband from 3.75 to 8.25GHz
- Saturated output power Psat is 41.5dBm
- High gain, 31dB
- Input & output DC blocked and matched to 50 Ohms

APPLICATIONS

- Instrumentation
- Commercial telecom transmission equipment
- Fixed microwave backhaul

TYPICAL PERFORMANCE (AM408041WN-SN-R Packaged Data)

Parameters	Minimum	Typical **	Maximum
Frequency	4-8 GHz	3.75-8.25 GHz	
Small Signal Gain	26dB	31dB	
Gain Ripple		± 2.5dB	± 4.0dB
P1dB	34.5dBm	37.5dBm	
Psat	38.5dBm	41.5dBm	
Psat Efficiency		23%	
IP3		47	
Input Return Loss	10 dB	15dB	
Output Return Loss		5dB	
Thermal Resistance		TBD	

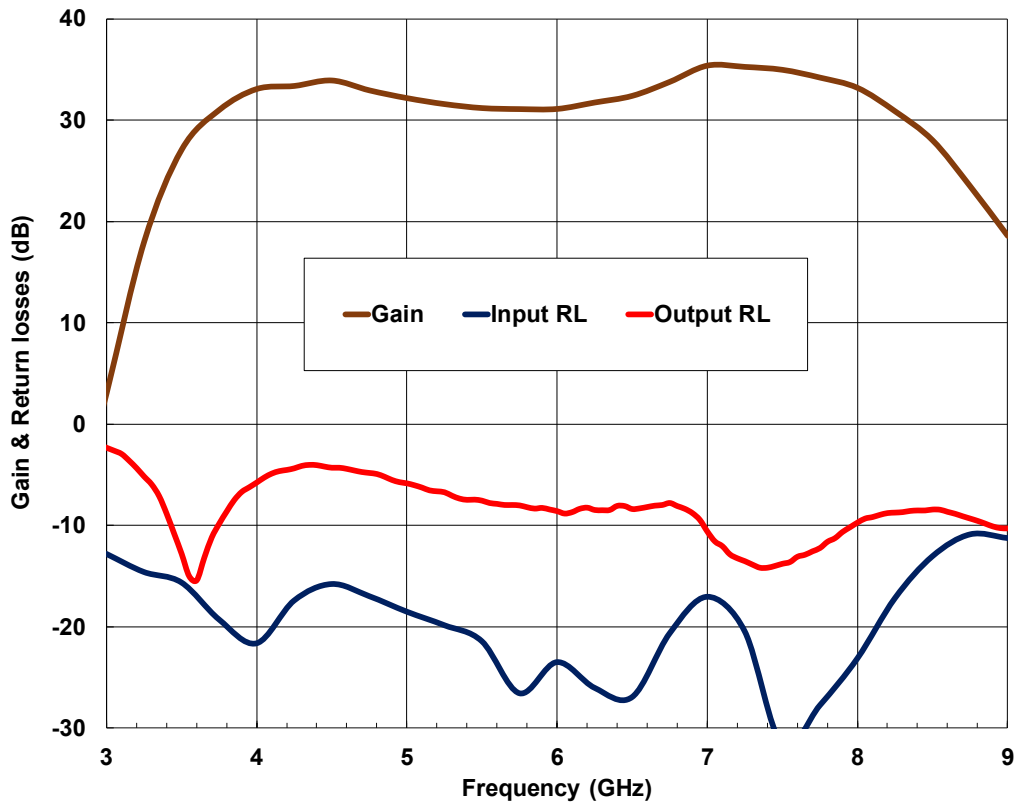
* Specifications subject to change without notice.

** Bias Conditions**: $V_{ds1,2,3} = +28V$, $I_{dsq1} + I_{dsq2} = 0.65A$, $I_{dsq3} = 0.90A$, $V_{gs1} = V_{gs2} = V_{gs3} = -1.8V$.

ABSOLUTE MAXIMUM RATING

Parameters	Symbol	Rating
First & second stage drain voltages	V_{ds1}, V_{ds2}	30V
Second stage drain voltage	V_{ds3}	30V
Gate source voltage	$V_{gs1}, V_{gs2}, V_{gs3}$	-6V
Drain source current	$I_{dsq1} + I_{dsq2}$	1A
Drain source current	I_{dsq3}	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

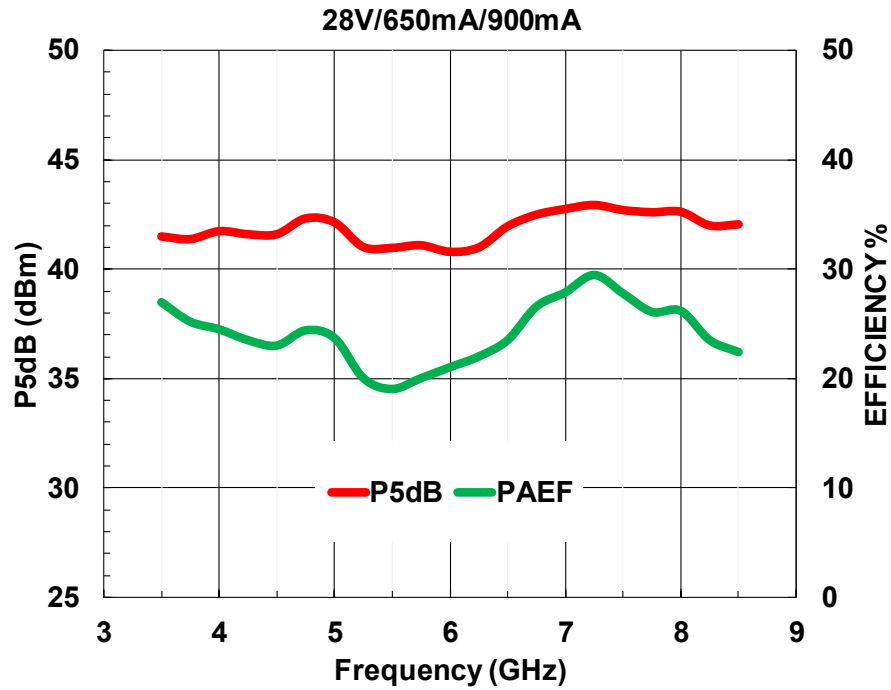
SMALL SIGNAL DATA*



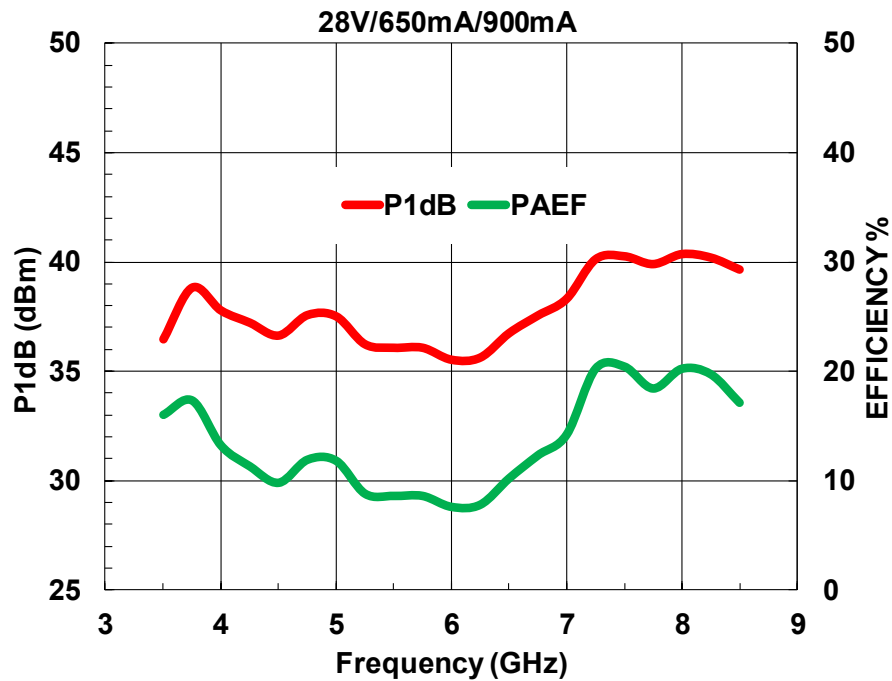
*Bias Conditions**: $V_{ds1, 2, 3} = +28V$, $I_{dsq1} + I_{dsq2} = 0.65A$, $I_{dsq3} = 0.90A$, $V_{gs1} = V_{gs2} = V_{gs3} = -1.8V$.

POWER DATA*

Psat (5dB compression)

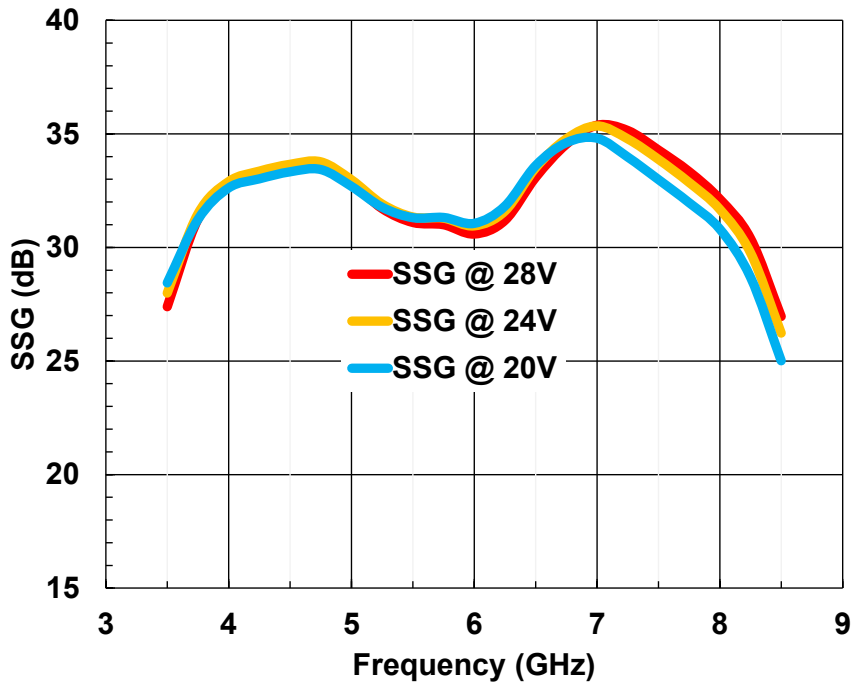
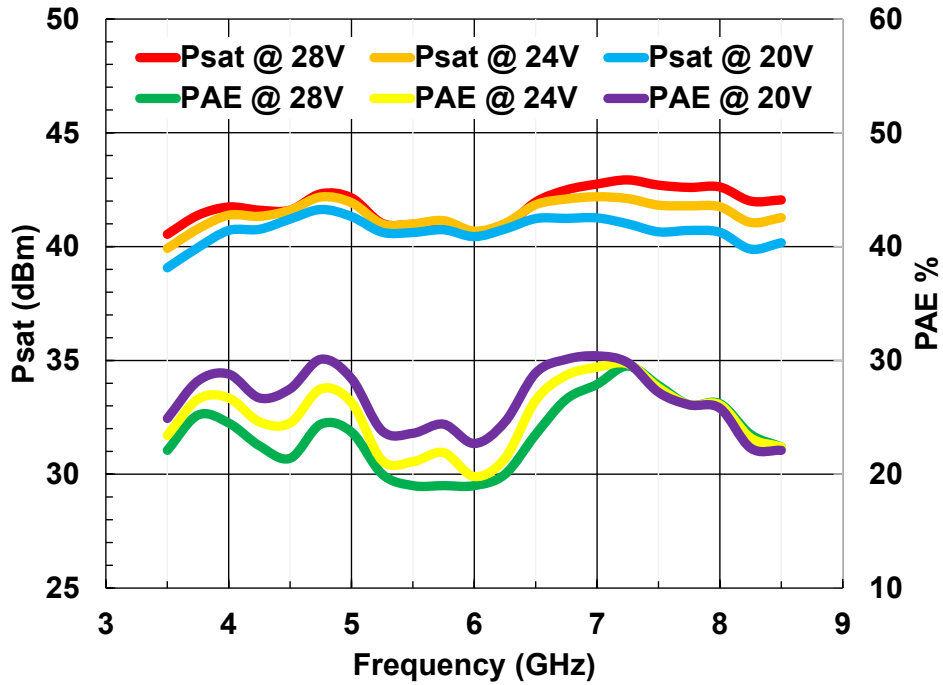


P1dB

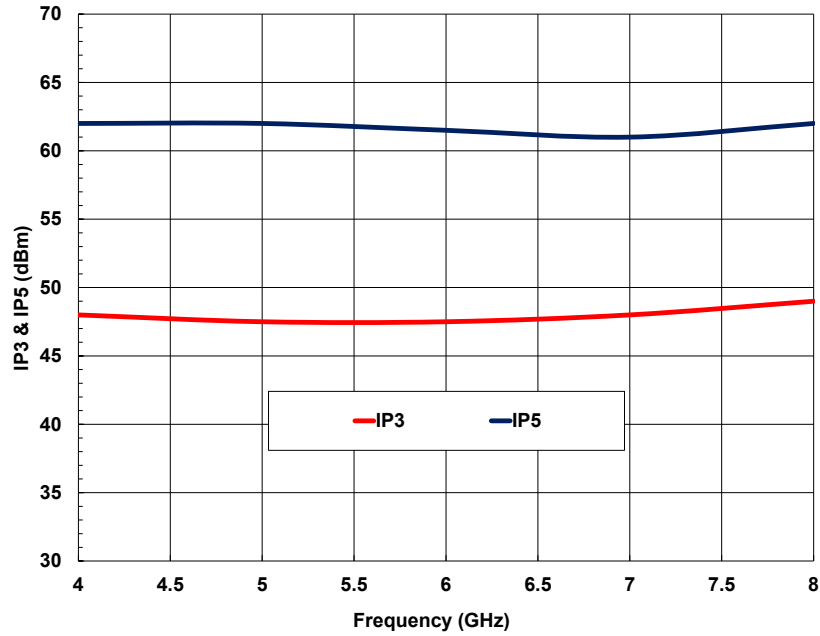


*Bias Conditions**: $V_{ds1, 2, 3} = +28V$, $I_{dsq1} + I_{dsq2} = 0.65A$, $I_{dsq3} = 0.90A$, $V_{gs1} = V_{gs2} = V_{gs3} = -1.8V$.

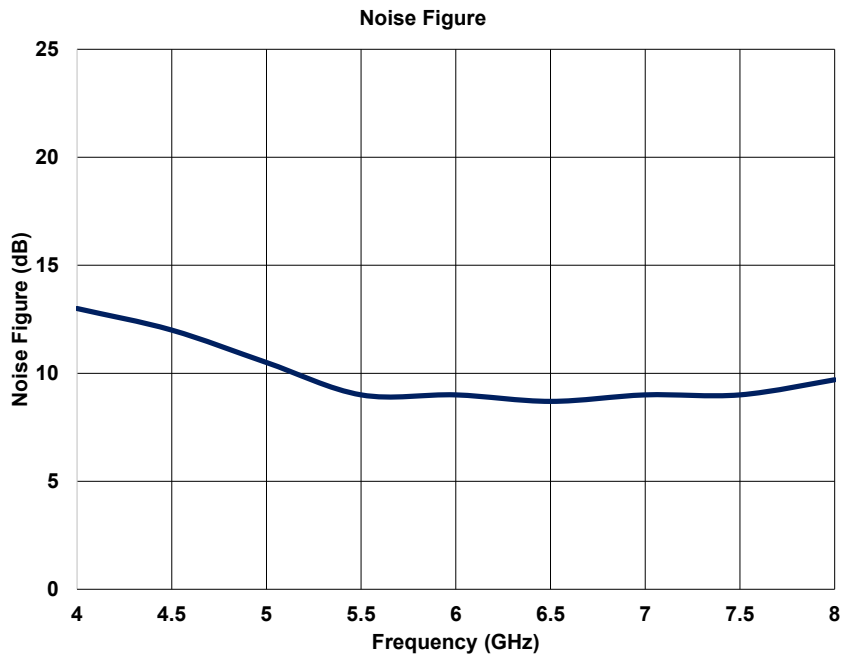
PERFORMANCE VS VOLTAGE



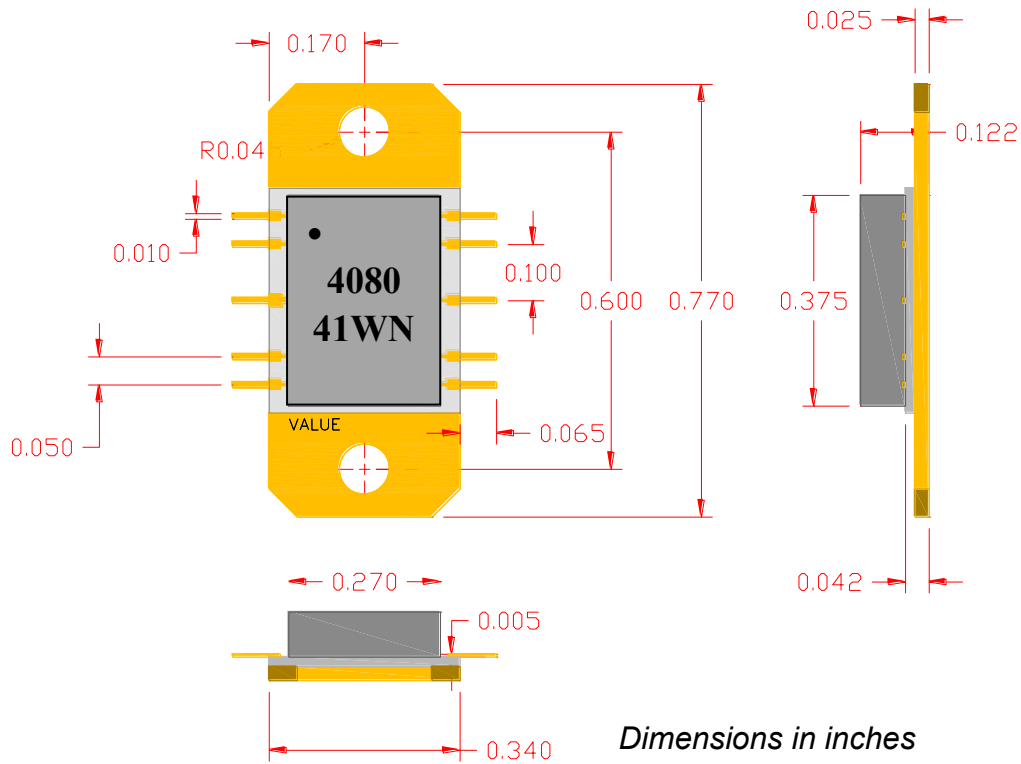
INTERMODULATION DISTORTION



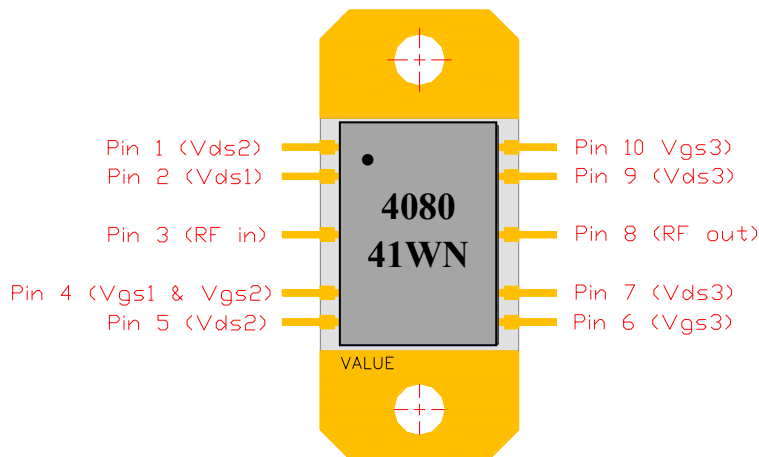
NOISE FIGURE



PACKAGE OUTLINE

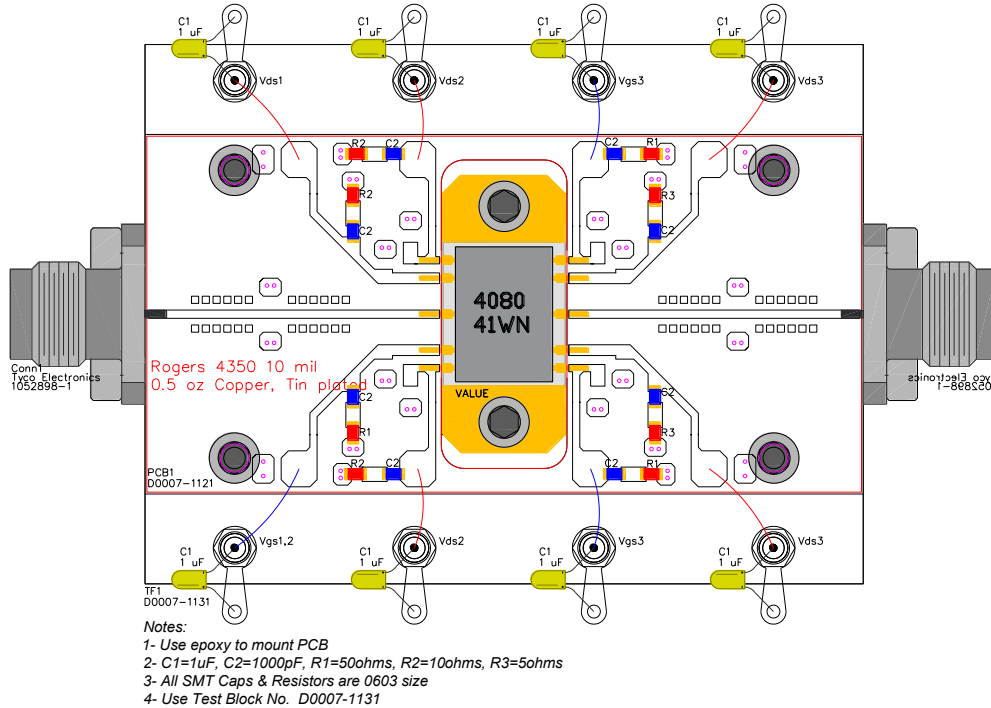


Pin Layout



Pin No.	Function	Bias
1	Vds2	+28V
2	Vds1	+28V
3	RF in	-
4	Vgs1 & Vgs2	-1.8V
5	Vds2	+28V
6	Vgs3	-1.8V
7	Vds3	+28V
8	RF out	-
9	Vds3	+28V
10	Vgs3	-1.8V

TEST CIRCUIT



Important Notes:

- 1- For best RF performance we recommend using 4mil indium shim between MMIC package and heatsink
- 2- Recommended current biases are 650mA for first and second stage combined and 900mA for the third stage. Gate biases of -1.8V are for reference only. Gate voltages could be adjusted to vary the currents going thru drain pins.
- 3- Do not apply drain voltages without proper negative voltages on gates. Otherwise MMIC would fail due to excess heat.
- 4- AutoCAD DXF file is available