

DESCRIPTION

AMCOM's AM07512041UM-2H is a broadband GaN power module. It has 24dB small signal gain, and 42dBm output power over the 7.5 to 12.0GHz band at +28V bias. Because of high DC power dissipation, we strongly recommend to mount the module on a heat sink.



FEATURES

- Wide bandwidth from 7.5 to 12.0GHz
- 42dBm of saturated output power
- High gain, 24dB
- Input /Output matched to 50 Ohms

APPLICATIONS

- Commercial telecom transmission equipment
- Fixed microwave backhaul
- Commercial 2-way radio

TYPICAL PERFORMANCE * ($V_{ds1} = +28V$, $I_{ds1} = 0.36A$, $I_{ds2} = 0.9A$, $V_{gs1,2} = -2.3V^{**}$)

Parameters	Minimum	Typical **	Maximum
Frequency	8.0 – 11.5GHz	7.5 – 12.0GHz	
Small Signal Gain	20dB	24dB	28dB
Gain Ripple		± 2dB	± 3.0dB
P_{1dB} ***	-	38dBm	
P_{3dB} ***	40dBm	42dBm	
Efficiency @ P_{3dB}		30%	
Noise Figure		7.5dB	10dB
IP3 @ 10GHz		47dBm	
Input Return Loss		10dB	
Output Return Loss		10dB	
Thermal Resistance		1.25°C/W	

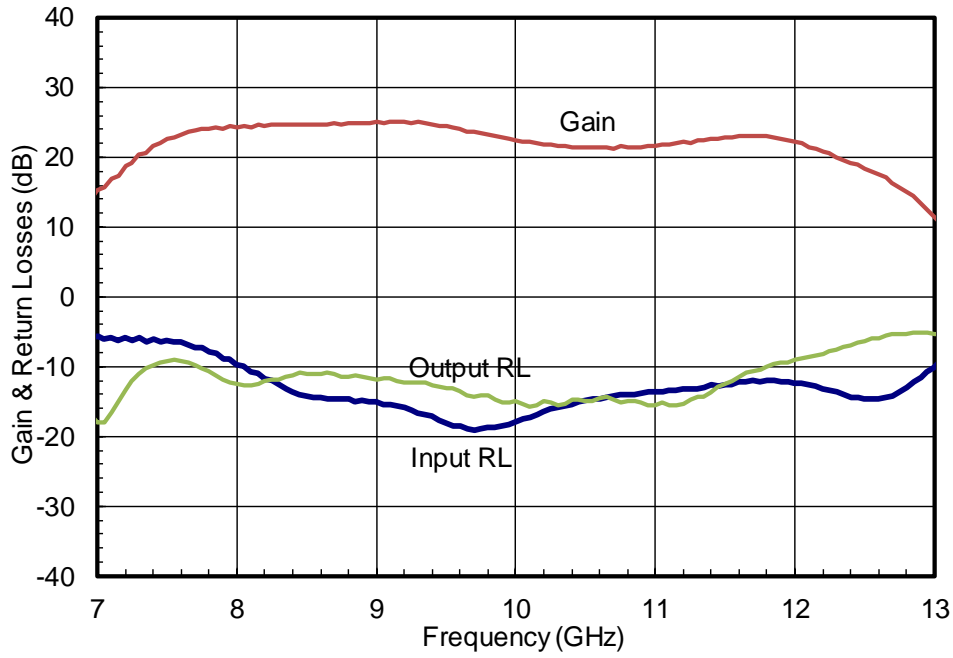
* Specifications subject to change without notice.

** Current may change from lot to lot. Adjust V_{gs1} to reach $I_{dsq1} = 0.36A$, and V_{gs2} to reach $I_{dsq2} = 0.9A$.

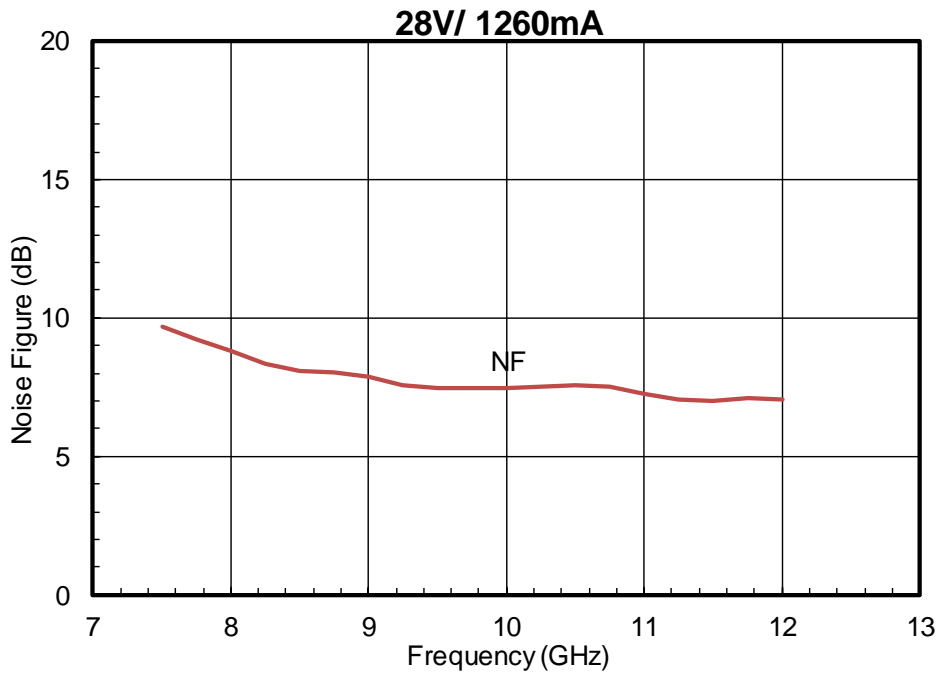
ABSOLUTE MAXIMUM RATING

Parameters	Symbol	Rating
Drain source voltage	V_{ds1}, V_{ds2}	+32V
Gate source voltage	V_{gs1}, V_{gs2}	-5V
Drain source current	I_{dsq1}	0.5A
Drain source current	I_{dsq2}	1.2A
Continuous dissipation at 25°C	P_t	20W
Channel temperature	T_{ch}	175°C
Operating temperature	T_{op}	-40°C to +85°C
Storage temperature	T_{sto}	-55°C to +135°C

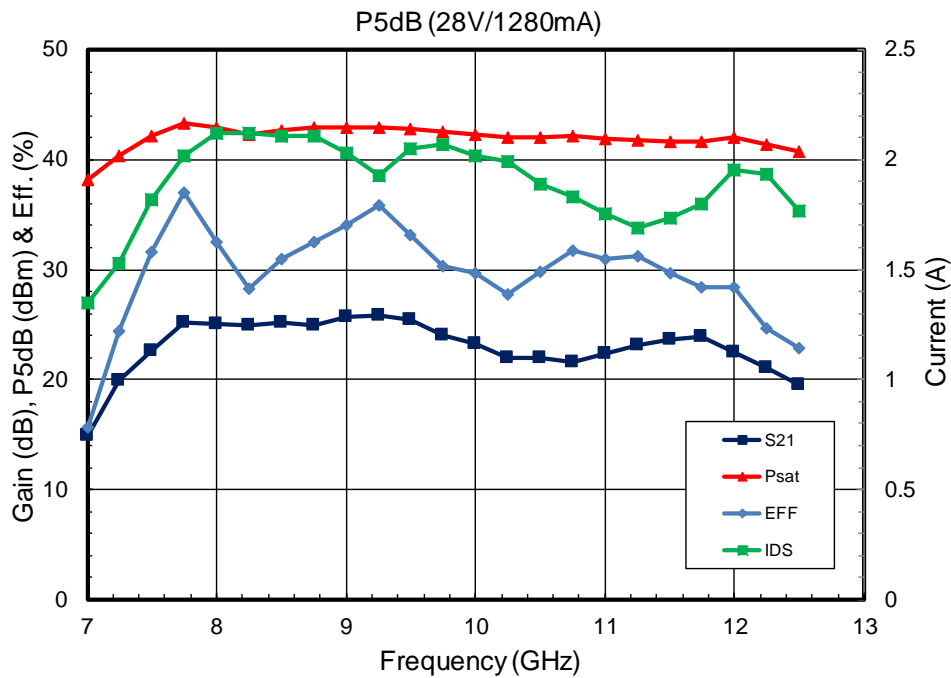
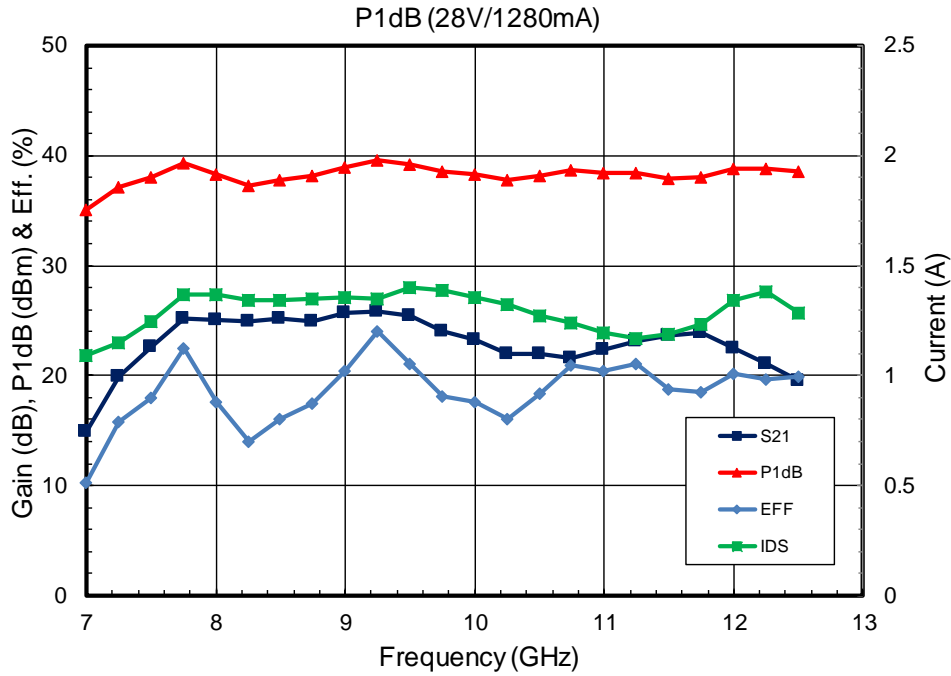
SMALL SIGNAL DATA*



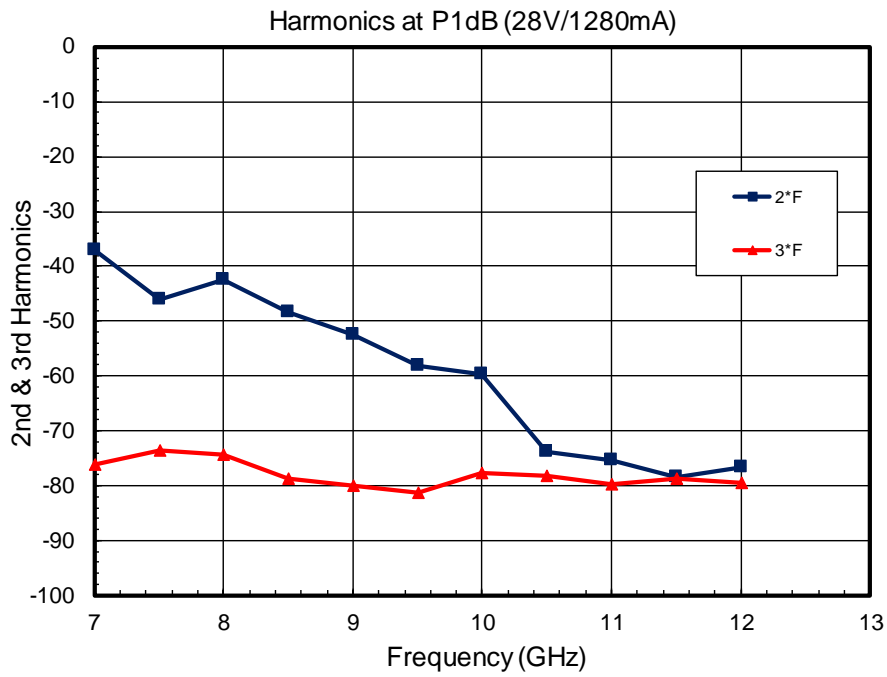
NOISE FIGURE



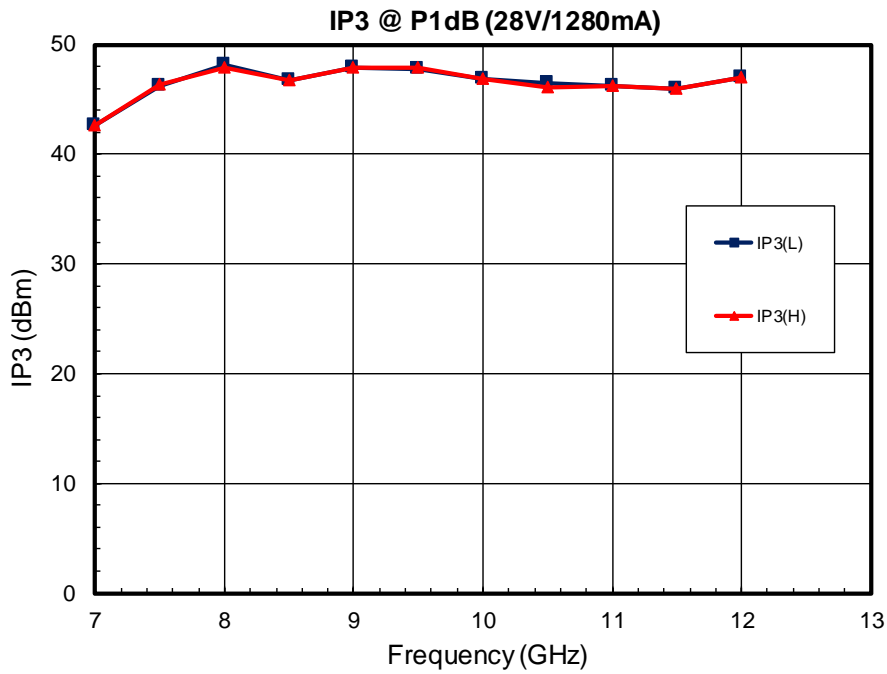
POWER DATA ($V_{ds1,2} = +28V$, $I_{ds1} = 0.38A$, $I_{ds2} = 0.9A$)



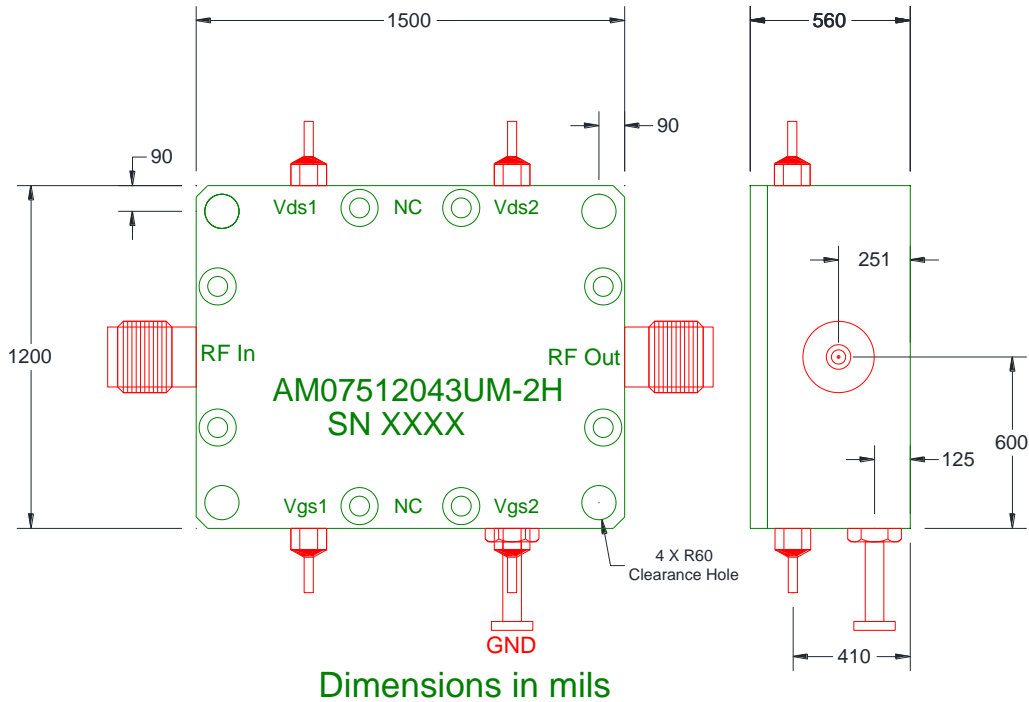
HARMONICS



INTERMODULATION



PACKAGE OUTLINE



Pin Layout

Pin No.	Function	Bias
1	Vgs1	-2.3V
2	NC	-
3	Vgs2	-2.3V
4	Vds2	+28V
5	NC	-
6	Vds1	+28V

Important Notes:

- 1- Recommended current biases are 0.36A and 0.9A for the first stage and second stage currents respectively. Gate biases of -2.3V for V_{gs1} and -2.3V for V_{gs2} are for reference only and should be adjusted to get the recommended currents.
- 2- Do not apply V_{ds1} & V_{ds2} without proper negative voltages.
- 3- Use heat sink under module to dissipate heat.