

DESCRIPTION

AMCOM's AM018033UM-2H is a broadband GaN power module. It has 17dB small signal gain, and 33dBm output power over 0.1 to 5.0GHz band at +28V bias. Because of high DC power dissipation, we strongly recommend to mount the module on a heat sink.



FEATURES

- Ultra-Broadband from DC to 8GHz
- Saturated output power P_{sat} is 33dBm
- Gain 17dB
- Input & output matched to 50 Ohms

APPLICATIONS

- Instrumentation
- Commercial telecom transmission equipment
- Fixed microwave backhaul

TYPICAL PERFORMANCE * ($V_{ds1,2} = +28V$, $I_{ds1} = 100mA$, $I_{ds2} = 150mA$, $V_{gs1,2} = -2.5V$ **)

Parameters	Minimum	Typical **	Maximum
Frequency	0.2 – 5GHz	0.1 – 8.0GHz	
Small Signal Gain	10dB	17dB	24dB
Gain Ripple		± 5dB	± 7dB
P_{1dB} **	-	27dBm	
P_{5dB} **	30dBm	33dBm	
Efficiency @ P_{5dB}		15%	
Noise Figure		11dB	
IP3 @ 2GHz		47dBm	
Input Return Loss		12dB	
Output Return Loss		5dB	
Thermal Resistance		5°C/W	

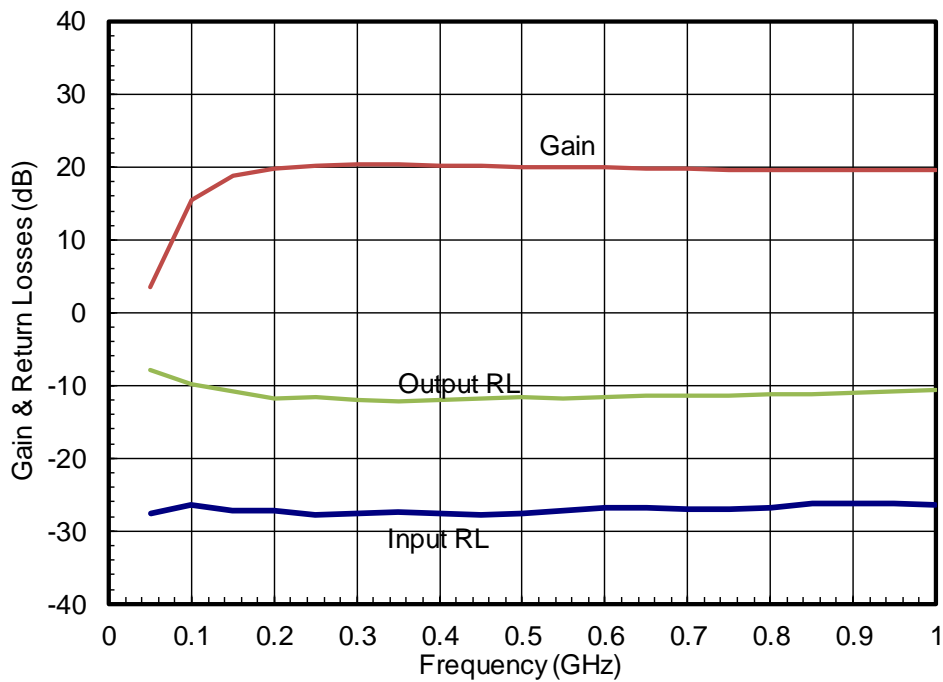
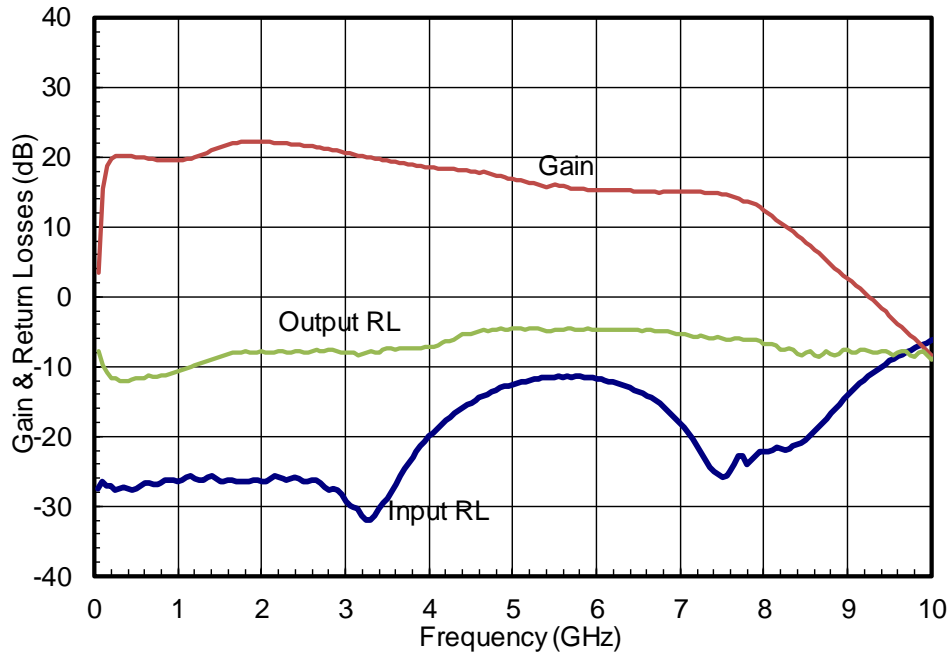
* Specifications subject to change without notice.

** Current may change from lot to lot. Adjust V_{gs1} to get $I_{ds1q} = 100mA$ & V_{gs2} to get $I_{ds2q} = 150mA$.

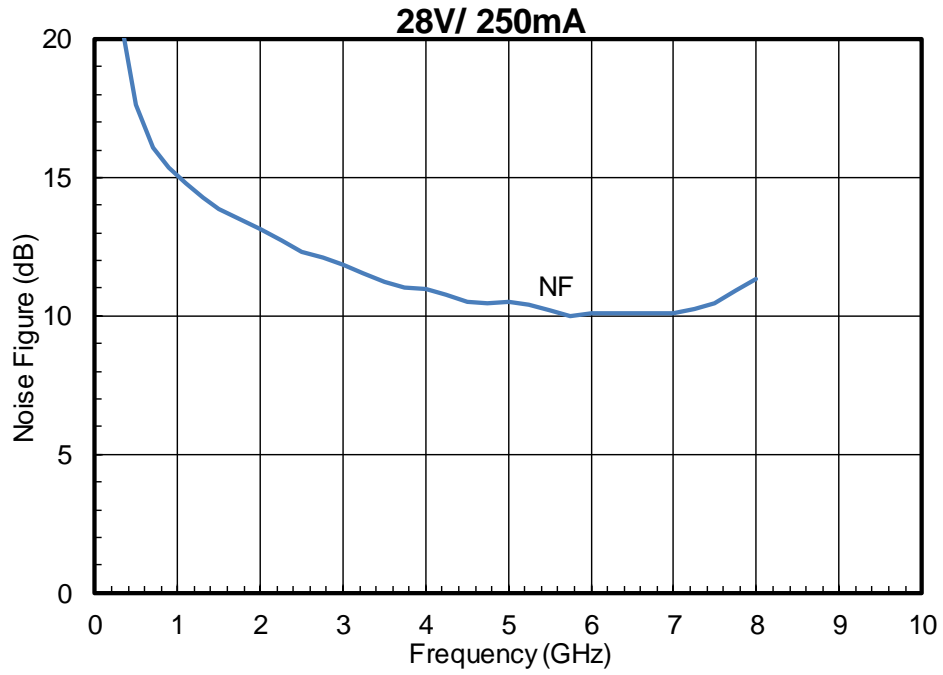
ABSOLUTE MAXIMUM RATING

Parameters	Symbol	Rating
Drain source voltage	V_{ds}	+40V
Gate source voltage	V_{gs}	-5V
Drain source current	I_{dsq}	0.5A
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

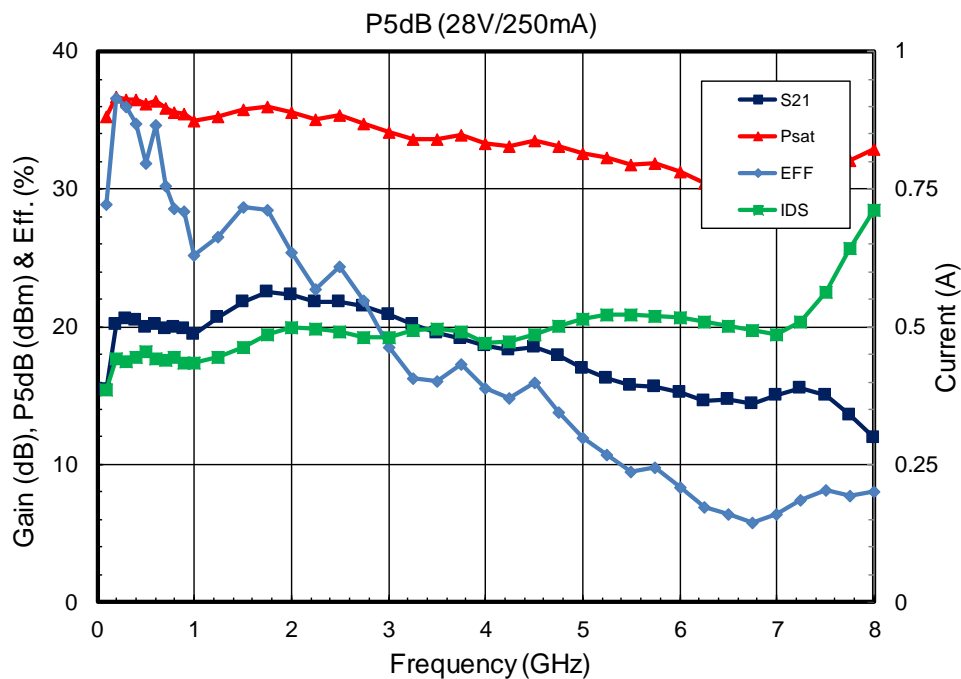
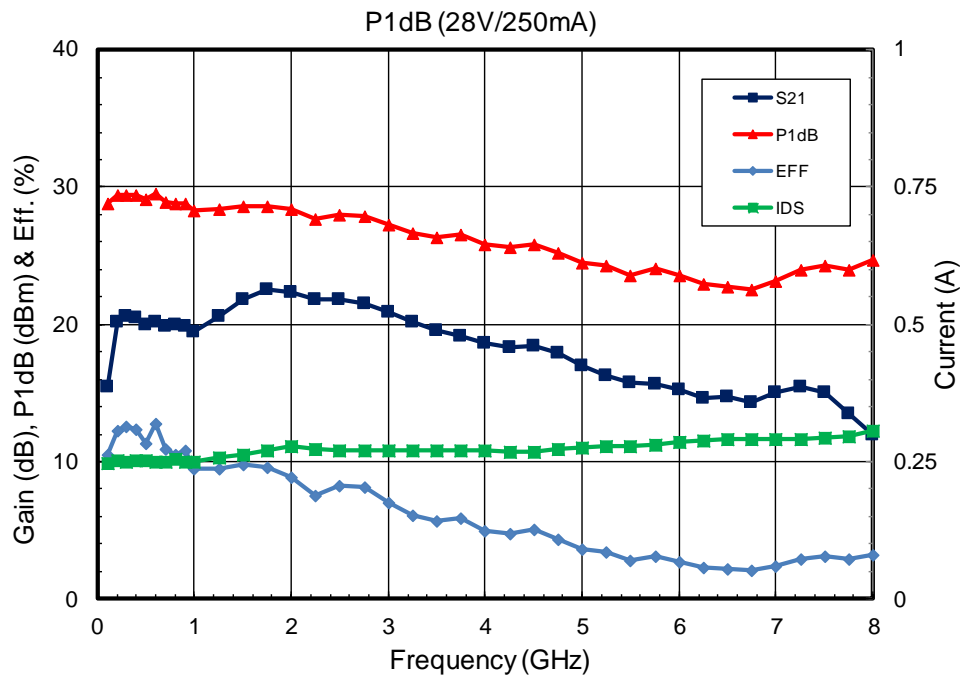
SMALL SIGNAL DATA



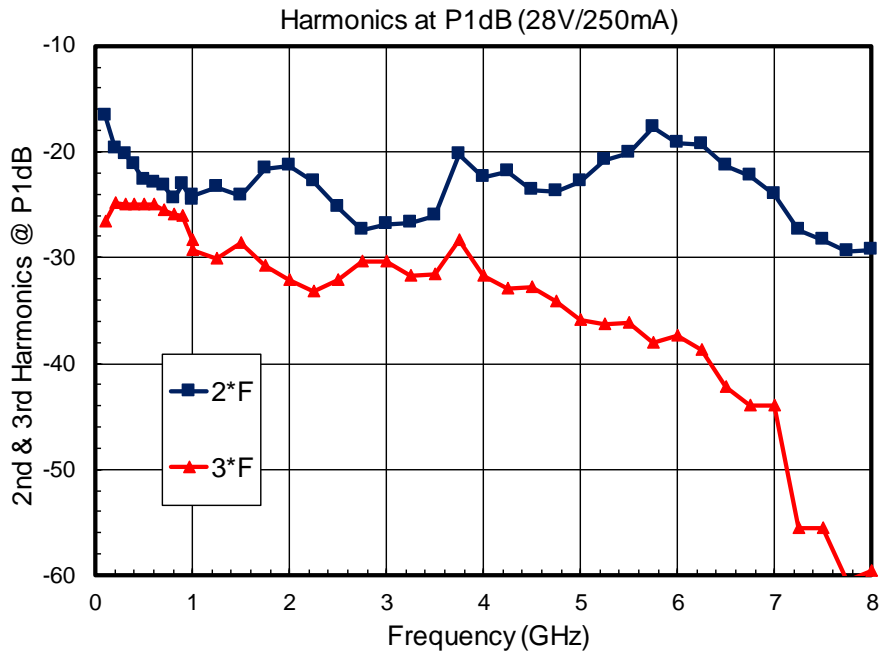
NOISE FIGURE



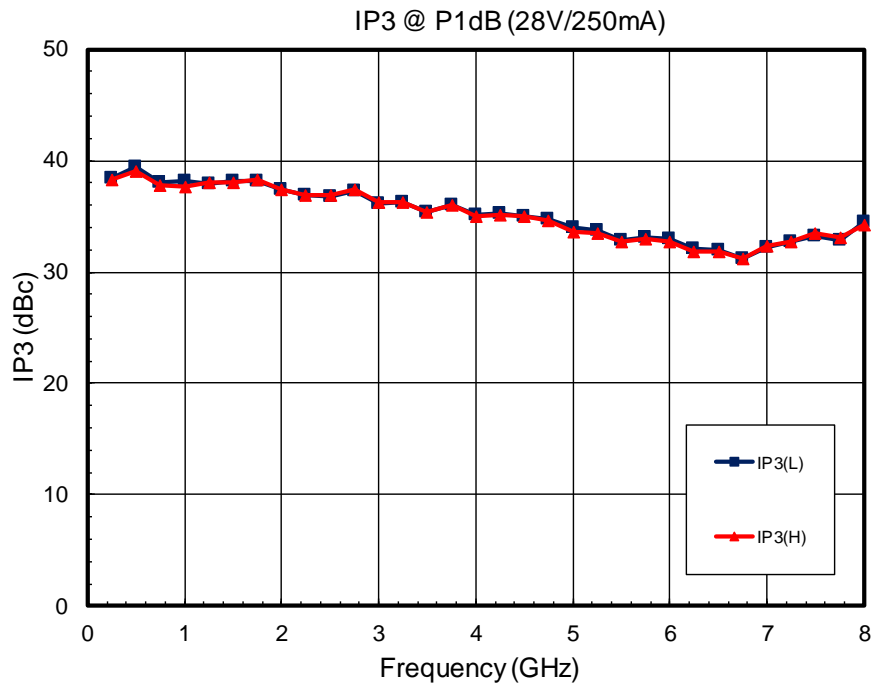
POWER DATA ($V_{ds1,2} = +28V$, $I_{ds1} = 100mA$, $I_{ds2} = 150mA$)



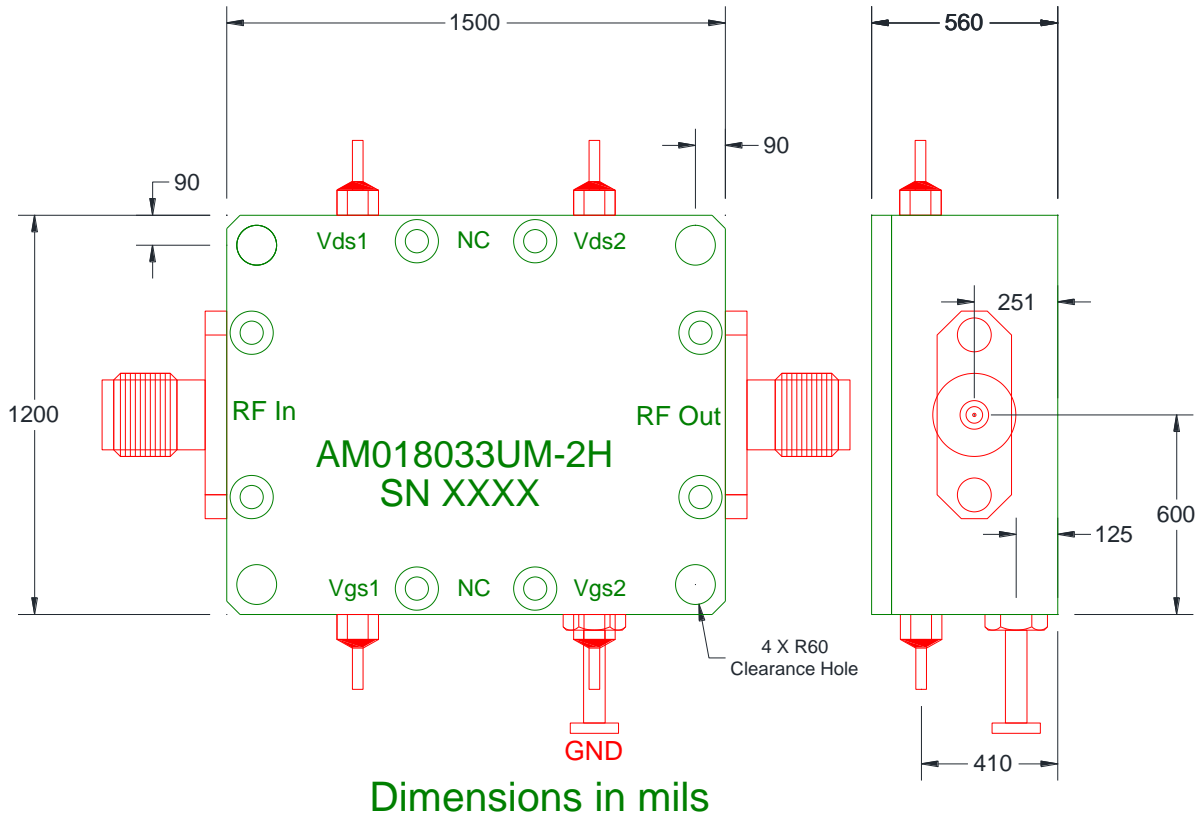
HARMONICS



INTERMODULATION



PACKAGE OUTLINE



Pin Layout

Pin No.	Function	Bias
1	Vgs1	-2.5V
2	NC	-
3	Vgs1	-2.5V
4	Vds1	+28V
5	NC	-
6	Vds2	+28V

Important Notes:

- 1- Recommended current biases are 100mA & 150mA for I_{ds1} & I_{ds2} respectively. Gate bias of -2.5V for V_{gs1} & V_{gs2} are for reference only and should be adjusted to get the recommended currents.
- 2- Do not apply V_{ds1} or V_{ds2} without proper negative voltage.
- 3- Use heat sink under module to dissipate heat.