Power Amplifier Module
2.0 – 4.4GHz, 32dB, 5W

AM204437UM-3H
January 2014
Rev B

DESCRIPTION

AMCOM's AM204437UM-3H is a broadband GaAs Power Amplifier module designed for Wireless Internet Access, Wireless Local Loop, and Two Way Radio. It operates from 2.0GHz to 4.4GHz and typically delivers more than 5 watts (37dBm) output power with 32 dB small signal gain. The amplifier module has 4 screw slots for mounting to a heat sink. This amplifier module is very small and light weight at 1.5" (L) x 1.2" (W) x 0.56" (H) and 1.6 oz (45g).

FEATURES

- Wide bandwidth from 2.0 to 4.4GHz
- 37dBm of saturated output power
- High gain, 32dB
- Input /Output matched to 50 Ohms

APPLICATIONS

- Wireless Internet Access
- Wireless Local Loop
- Fixed microwave backhaul
- Commercial 2-way radio

TYPICAL PERFORMANCE * ($V_{ds1,2,3}$ = +8V, I_{dsq1} = 0.1A, I_{dsq2} = 0.3A, I_{dsq3} = 1.4A, $V_{gs1,2}$ = -0.80V)

Parameters	Minimum	Typical **	Maximum
Frequency	2.4 – 4.0GHz	2.0 – 4.4 GHz	
Small Signal Gain	26 dB	32 dB	
Gain Ripple		± 1.0 dB	± 3.0 dB
P_{1dB}		36 dBm	
P_{3dB}	35 dBm	37 dBm	
Efficiency @ P_{3dB}		25%	
Noise Figure		-	10 dB
IP3 @ 1.5GHz		TBD	
Input Return Loss	9dB	15 dB	
Output Return Loss	10 dB	12 dB	
Thermal Resistance		4.0 °C/W	

* Specifications are subject to change without notice.

** $V_{gs1,2,3}$ should be adjusted to -0.80V approximately to get the specified currents, and will vary slightly from one unit to another.

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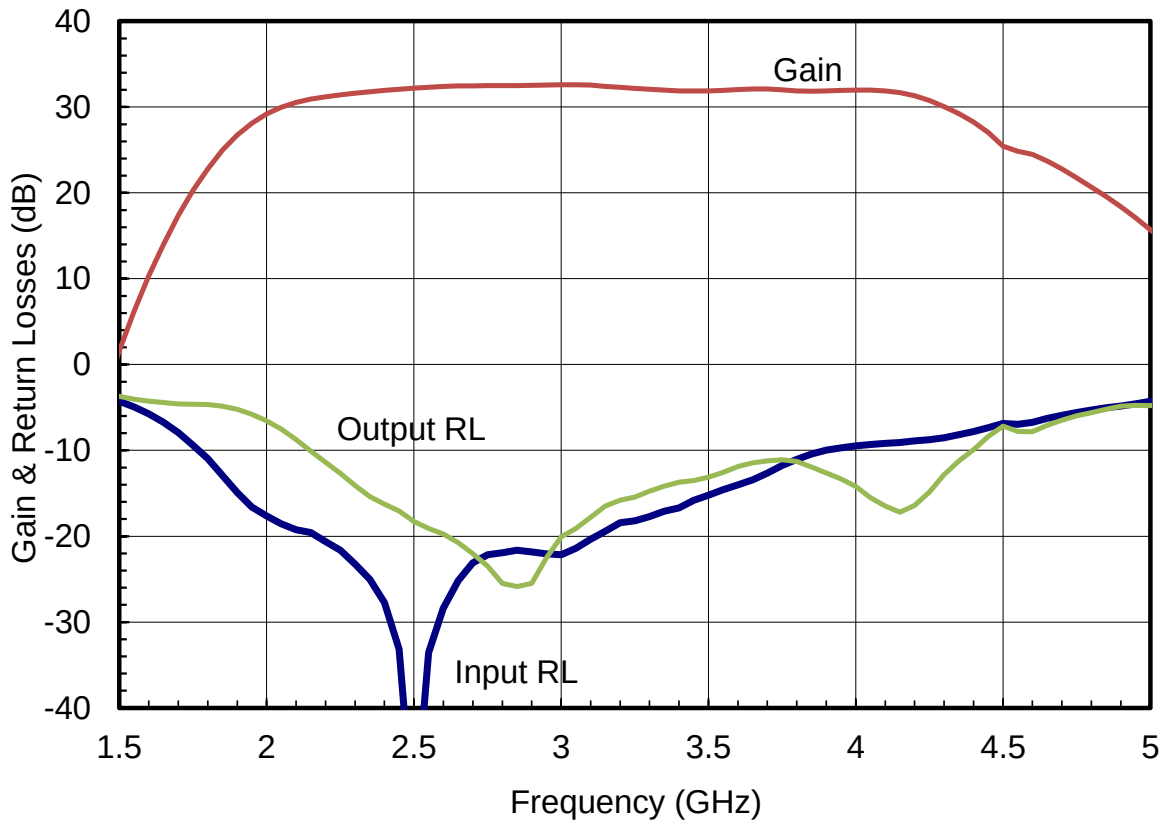
ABSOLUTE MAXIMUM RATING

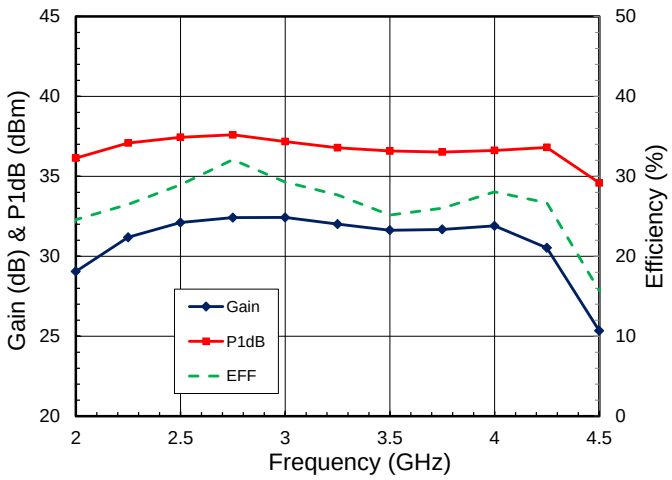
Parameters	Symbol	Rating
Drain source voltage	$V_{dd1,2}$	10V
Gate source voltage	$V_{gs1,2}$	-5V
Drain source current	I_{dsq1}	0.15A
Drain source current	I_{dsq2}	0.45A
Drain source current	I_{ds3}	2.1A
Continuous dissipation at 25ºC	P_t	30W
Channel temperature	T_{ch}	175°C
Operating temperature	T_{op}	-40°C to +85°C
Storage temperature	T_{sto}	-55°C to +135°C

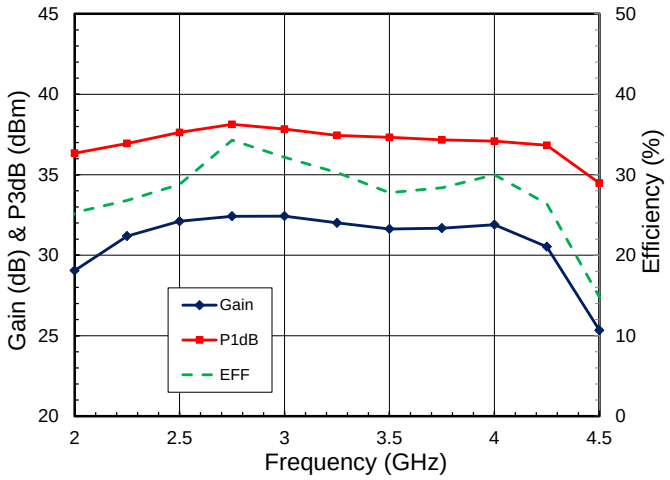
SMALL SIGNAL DATA*



* Bias is $V_{ds1,2,3}$=+8V, I_{dsq1}=0.1A, I_{dsq2}=0.3A, , I_{dsq3}=1.4A , $V_{gs1,2,3}$=-0.80V.

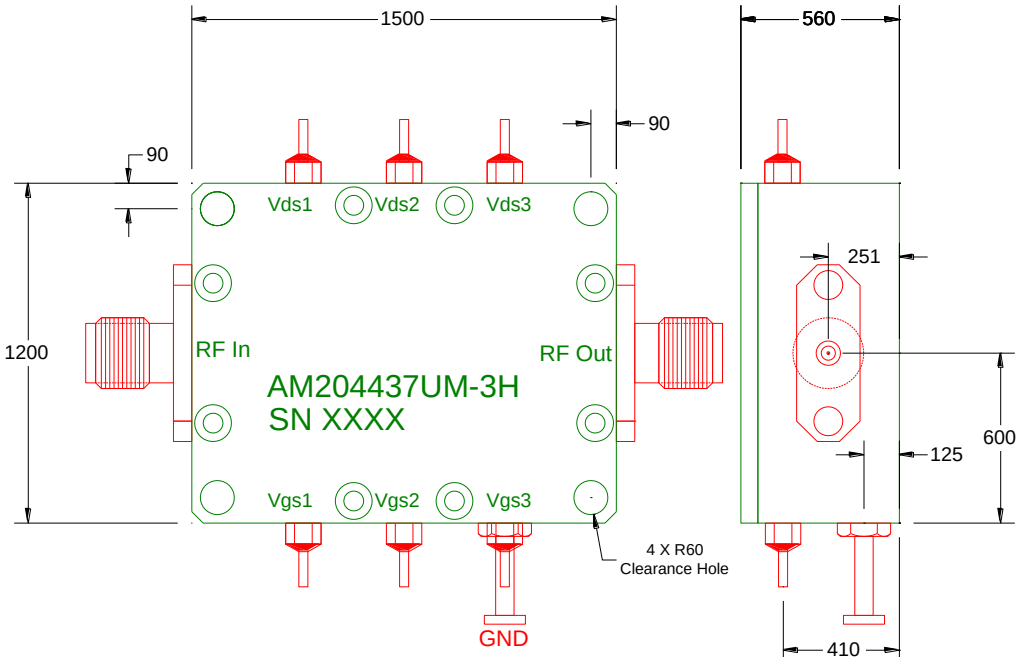
POWER DATA *





* Bias is $V_{ds1,2,3}$=+8V, I_{dsq1}=0.1A, I_{dsq2}=0.3A, , I_{dsq3}=1.4A , $V_{gs1,2,3}$=-0.80V.

PACKAGE OUTLINE



Dimensions in mils

Pin No.	Function	Bias
1	V_{gs1}	-0.80V
2	V_{gs2}	-0.80V
3	V_{gs3}	-0.80V
4	V_{ds3}	+8V
5	V_{ds2}	+8V
6	V_{ds1}	+8V

Important Notes:

1- Recommended current biases are 100mA, 300mA & 1400mA for the first, second and third stages respectively.

2- Do not apply V_{ds1} , V_{ds2} & V_{ds3} without proper negative voltages on V_{gs1} , V_{gs2} & V_{gs3}.

3- The currents flowing out of the V_{gs1} , V_{gs2} & V_{gs3} pins are less than 100µA, 600µA & 12mA at P_{1dB}.