Power Amplifier Module
1.5 – 3.5GHz, 20dB, 9W

AM153540UM-2H
January 2014
Rev1

DESCRIPTION

AMCOM's A153540UM-2H is a broadband GaAs Power Amplifier module designed for Wireless Internet Access, Wireless Local Loop, and Two Way Radio. It operates from 1.5GHz to 3.5GHz and typically delivers 39.5dBm (9W) output power and 21 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 1.5 to 3.5GHz
- 39dBm of saturated output power
- High gain, 21dB
- Input /Output matched to 50 Ohms

APPLICATIONS

- PCS Pico Cell Base Station
- GPS Applications
- WLAN Repeaters
- 10 – 16V Application

TYPICAL PERFORMANCE * ($V_{dd1,2}$ = +14V, I_{ddq1} = 0.25A, I_{ddq2} = 1.05A, $V_{gs1,2}$ = -0.97V)

Parameters	Minimum	Typical **	Maximum
Frequency	2.0 – 3.0GHz	1.5 – 3.5 GHz	
Small Signal Gain	16.0 dB	21.0 dB	
Gain Ripple		± 3.0 dB	± 5.0 dB
P_{1dB}	36 dBm	38 dBm	
P_{3dB}	37 dBm	39.5 dBm	
Efficiency @ P_{1dB}		35%	
Noise Figure		12 dB	15 dB
IP3		45 dBm	
Input Return Loss	10 dB	14 dB	
Output Return Loss	5 dB	8 dB	
Thermal Resistance		6 °C/W	

* Notes:
1- Specifications are subject to change without notice.
2- $V_{gs1,2}$ should be adjusted to -0.95V approximately to get the specified currents, and will vary slightly from one unit to another.

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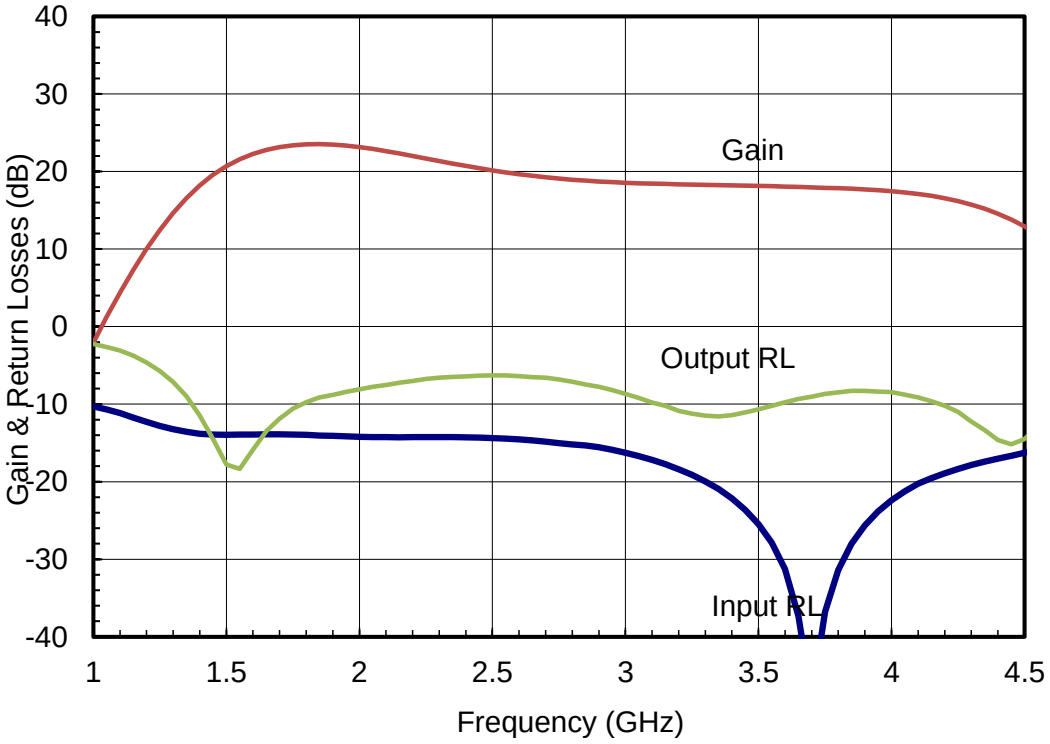
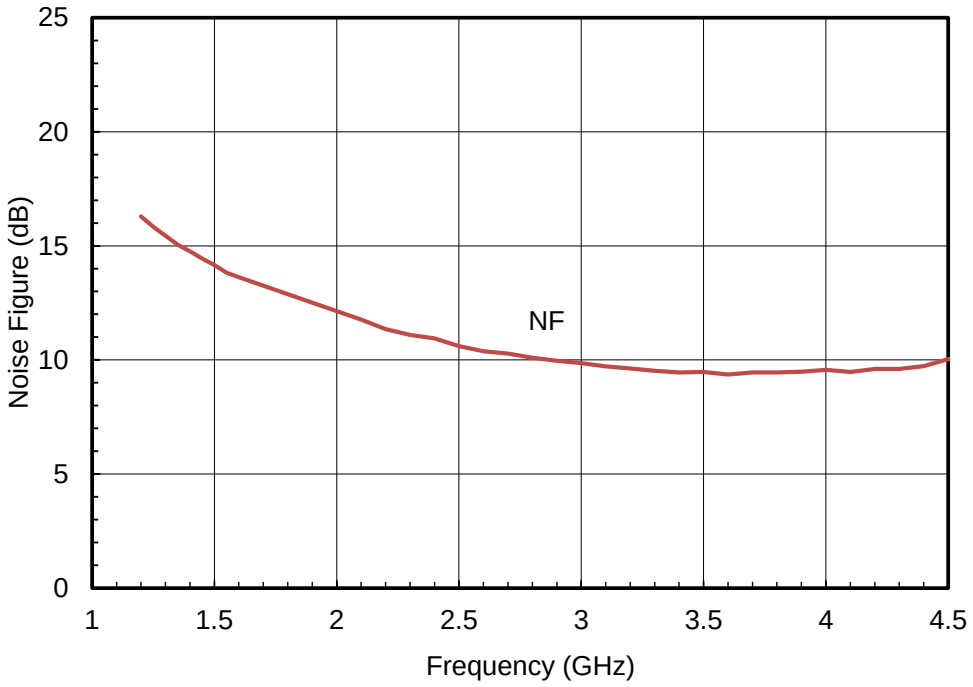
ABSOLUTE MAXIMUM RATING

Parameters	Symbol	Rating
Drain source voltage	$V_{dd1,2}$	+16V
Gate source voltage	$V_{gs1,2}$	-5V
Drain source current	I_{ddq1}	0.38A
Drain source current	I_{ddq2}	1.5A
Continuous dissipation at 25ºC	P_t	32W
Channel temperature	T_{ch}	175°C
Operating temperature	T_{op}	-40°C to +85°C
Storage temperature	T_{sto}	-55°C to +135°C

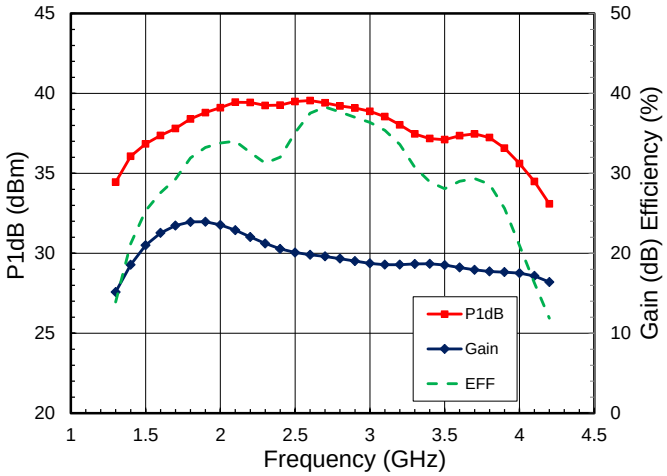
SMALL SIGNAL DATA*

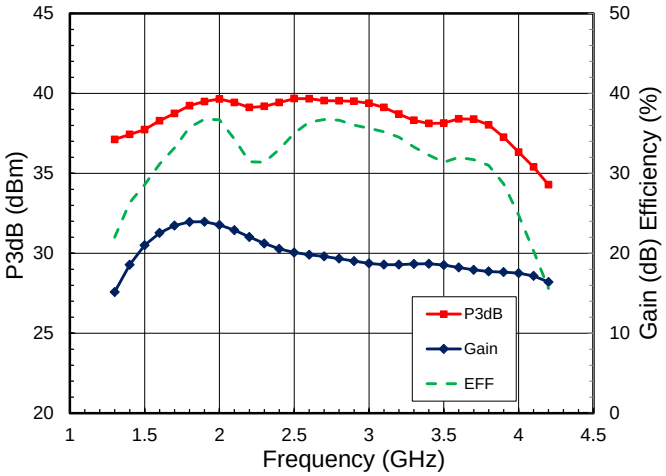


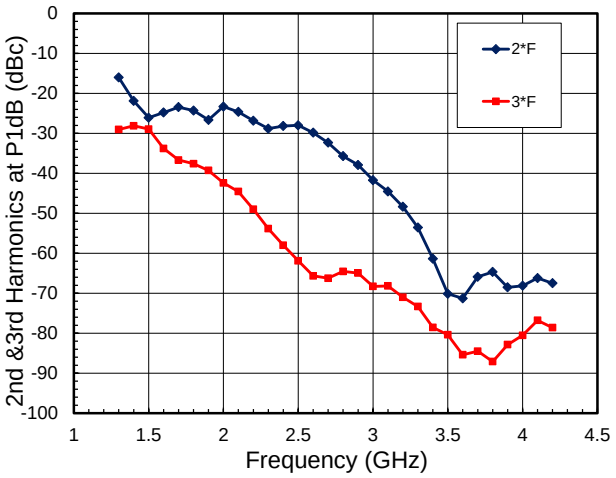
* Data shown is for $V_{dd1,2}$=+14V, I_{ddq1}=0.25A, I_{ddq2}=1.05A, $V_{gs1,2}$=-0.97V.

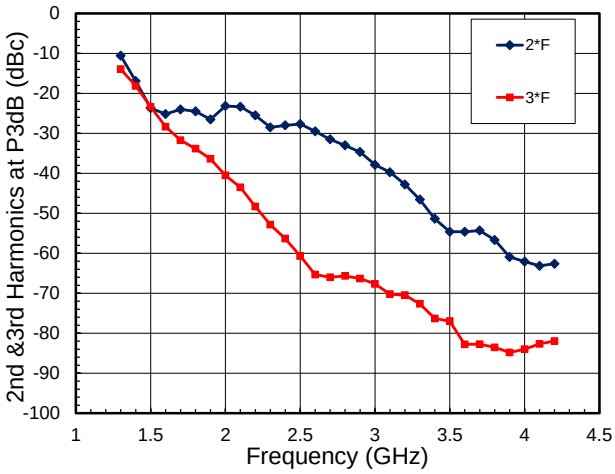


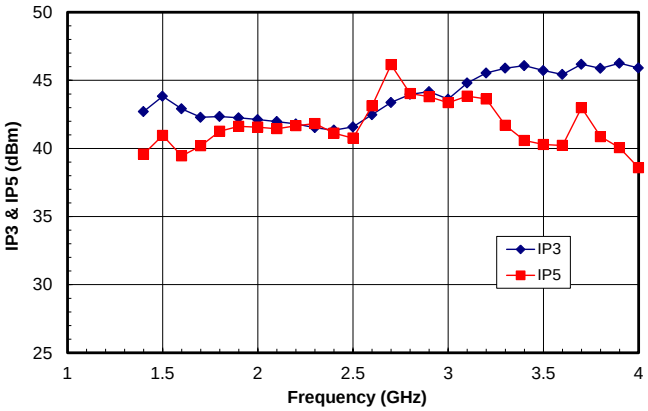
POWER DATA *











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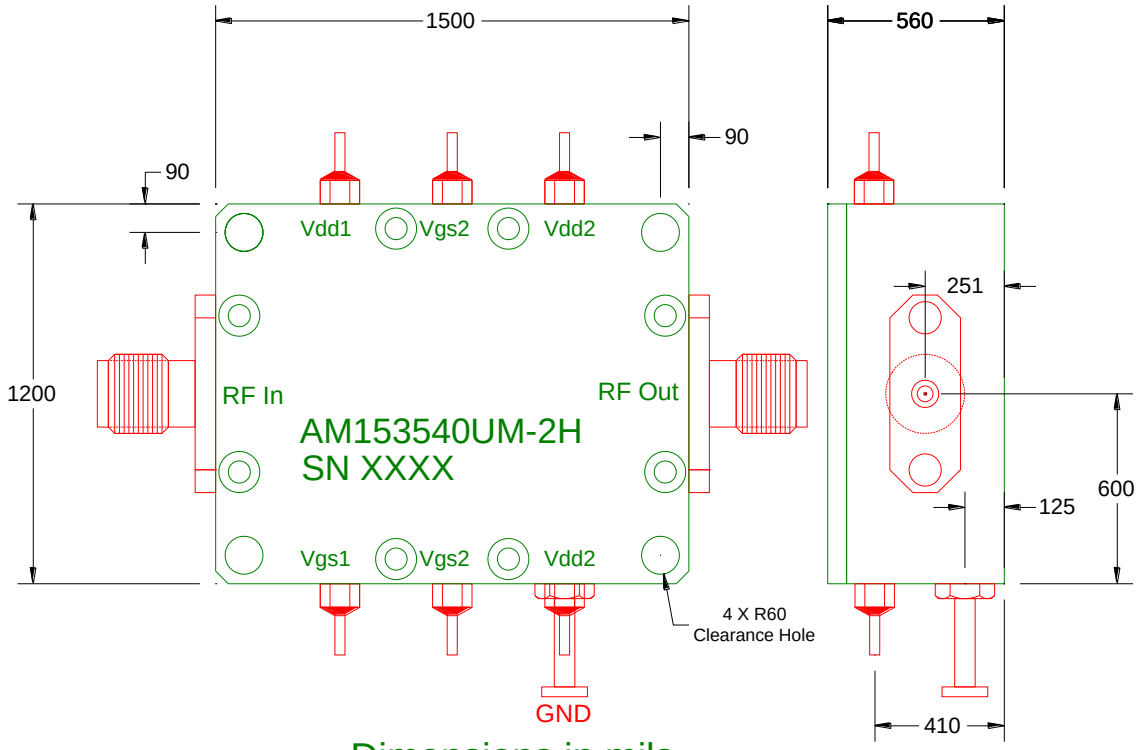
PACKAGE OUTLINE



Dimensions in mils

Pin No.	Function	Bias
1	V_{gs1}	-0.97V
2	V_{gs2}	-0.97V
3	V_{dd2}	+14V
4	V_{dd2}	+14V
5	V_{gs2}	-0.97V
6	V_{dd1}	+14V

Important Notes:

1- Recommended bias currents are bias are: I_{dsq1}=0.25A, I_{dsq2}= 1.05A, for the first stage, and second stage currents respectively.

2- Gate $V_{gs1,2,}$ bias of -0.97V are for reference only. $V_{gs1,2}$ could be adjusted to vary the currents going thru the module.

3- Do not apply V_{dd1} &, V_{dd2} without proper negative voltages.