Power Amplifier Module
7.5 – 12GHz, 19dB, 20W

AM07512043SF-2H
October 2015
Rev 0

DESCRIPTION

AMCOM's AM07512043SF-2H is a broadband GaN Power Amplifier module. AM07512043SF-2H is a wideband power amplifier designed for general purpose applications. It operates from 7.5GHz to 12GHz and typically delivers 20 watts (43dBm) CW output power and 19dB small signal gain. The amplifier module has 6 screw slots for mounting to a heat sink. This amplifier module is compact and light weight at 4" (L) x 3.08" (W) x 0.56" (H) and 8.5oz (240g).

FEATURES

- Wide bandwidth from 7.5 to 12GHz
- 43dBm of saturated CW output power
- High gain, 19dB
- Input / Output matched to 50 Ohms

APPLICATIONS

- Radar
- Fixed microwave backhaul
- Instrumentation and measurements

TYPICAL PERFORMANCE * (Quiescent bias is +32V, I_{ddq}= 2.5A)

Parameters	Minimum	Typical **	Maximum
Frequency		7.5 – 12 GHz	
Small Signal Gain	15 dB	19 dB	23 dB
Gain Ripple		± 2.0 dB	± 3.0 dB
P_{1dB}		40 dBm	
P_{3dB}	41 dBm	43 dBm	
Efficiency @ P_{3dB}		15%	
Noise Figure		9dB	
IP3		47dBm	
Input Return Loss		> 11 dB	
Output Return Loss		> 8 dB	
Thermal Resistance		1 °C/W	

* Notes:
1- Specifications are subject to change without notice.
2- Proper heat sink should be used to remove heat from bottom of package

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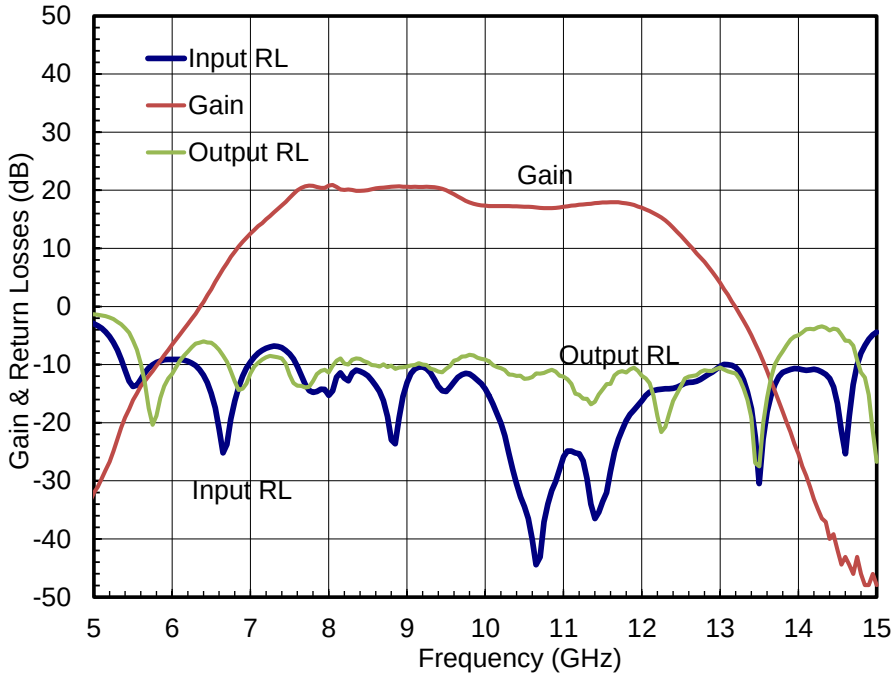
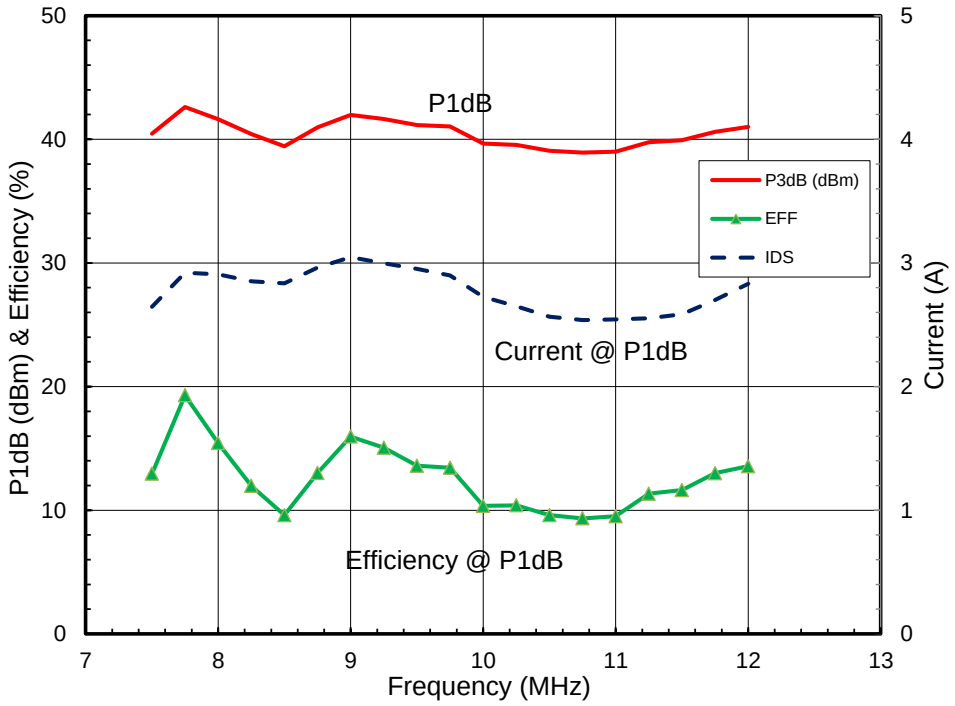
ABSOLUTE MAXIMUM RATING

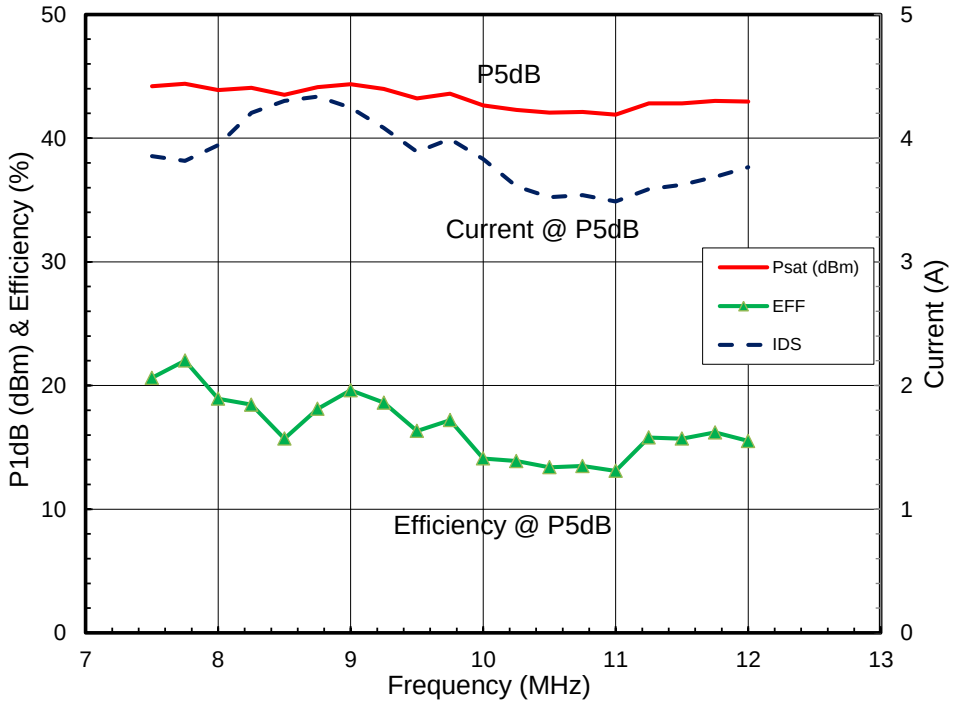
Parameters	Symbol	Rating
Drain source voltage	$V_{dd1,2}$	40V
Continuous dissipation at 25ºC	P_t	200W
Operating temperature	T_{op}	-40°C to +85°C
Storage temperature	T_{sto}	-55°C to +135°C

SMALL SIGNAL DATA



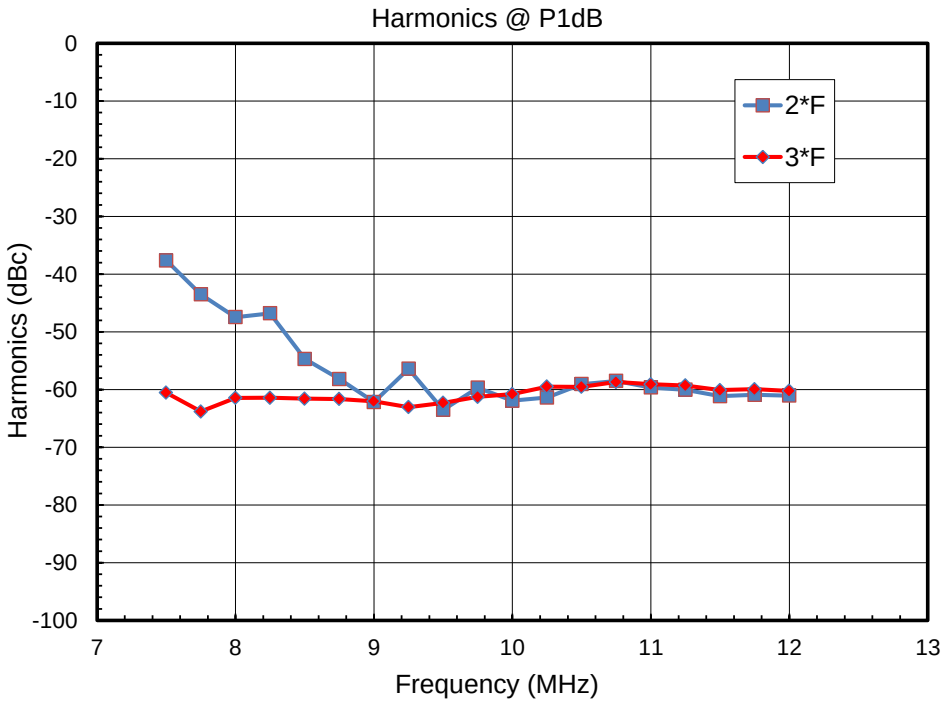
POWER DATA *

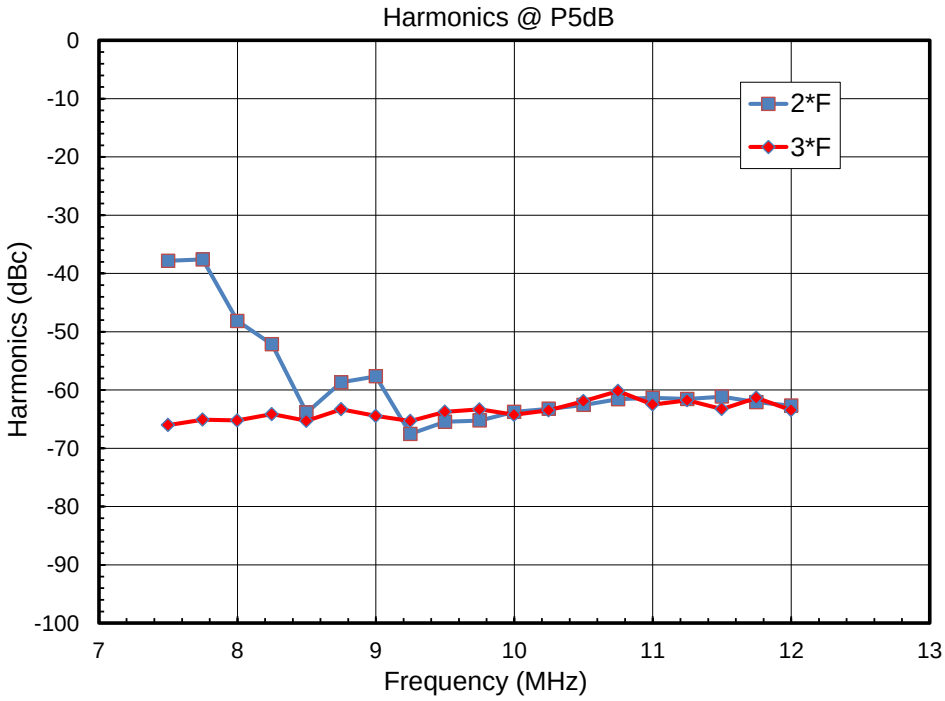




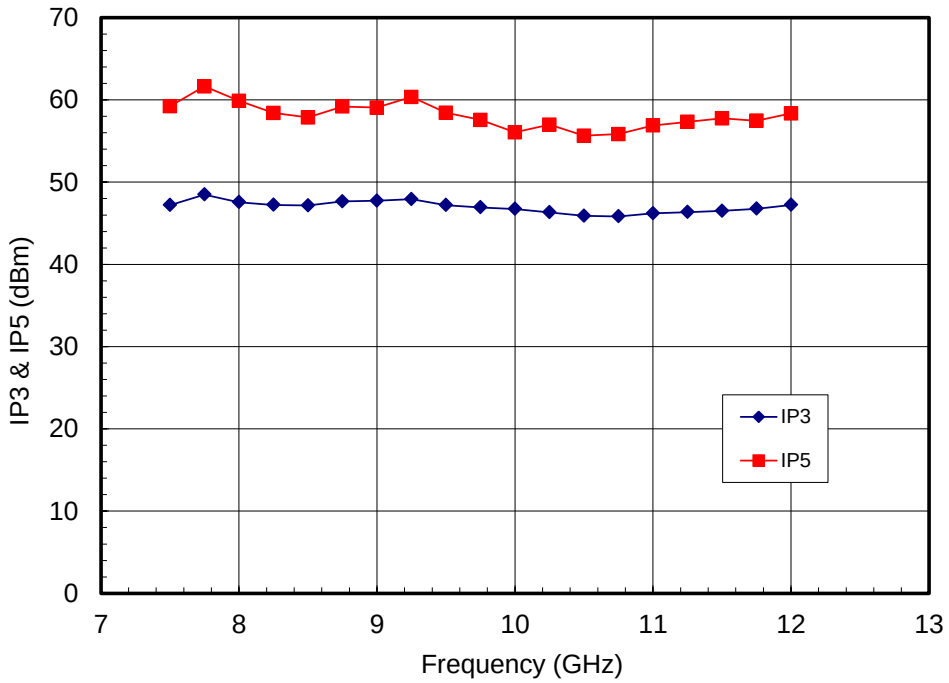
* Data shown is for V_{dd}=+32V

HARMONICS

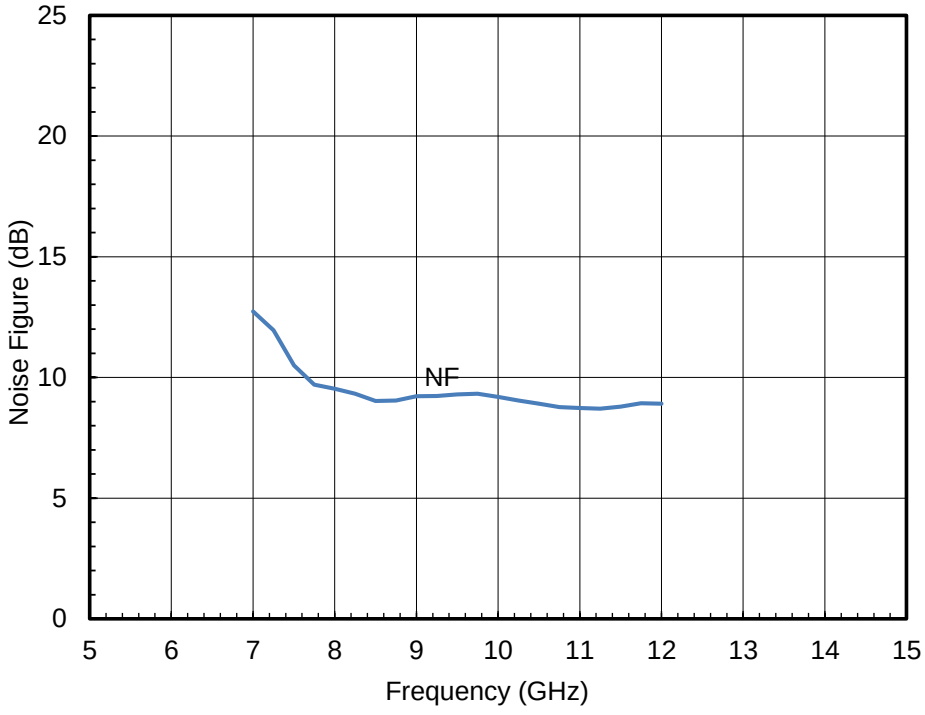

Harmonics @ P1dB
Harmonics (dBc)
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
7
8
9
10
11
12
13
Frequency (MHz)
2*F
3*F


Harmonics @ P5dB
Harmonics (dBc)
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
7
8
9
10
11
12
13
Frequency (MHz)
2*F
3*F

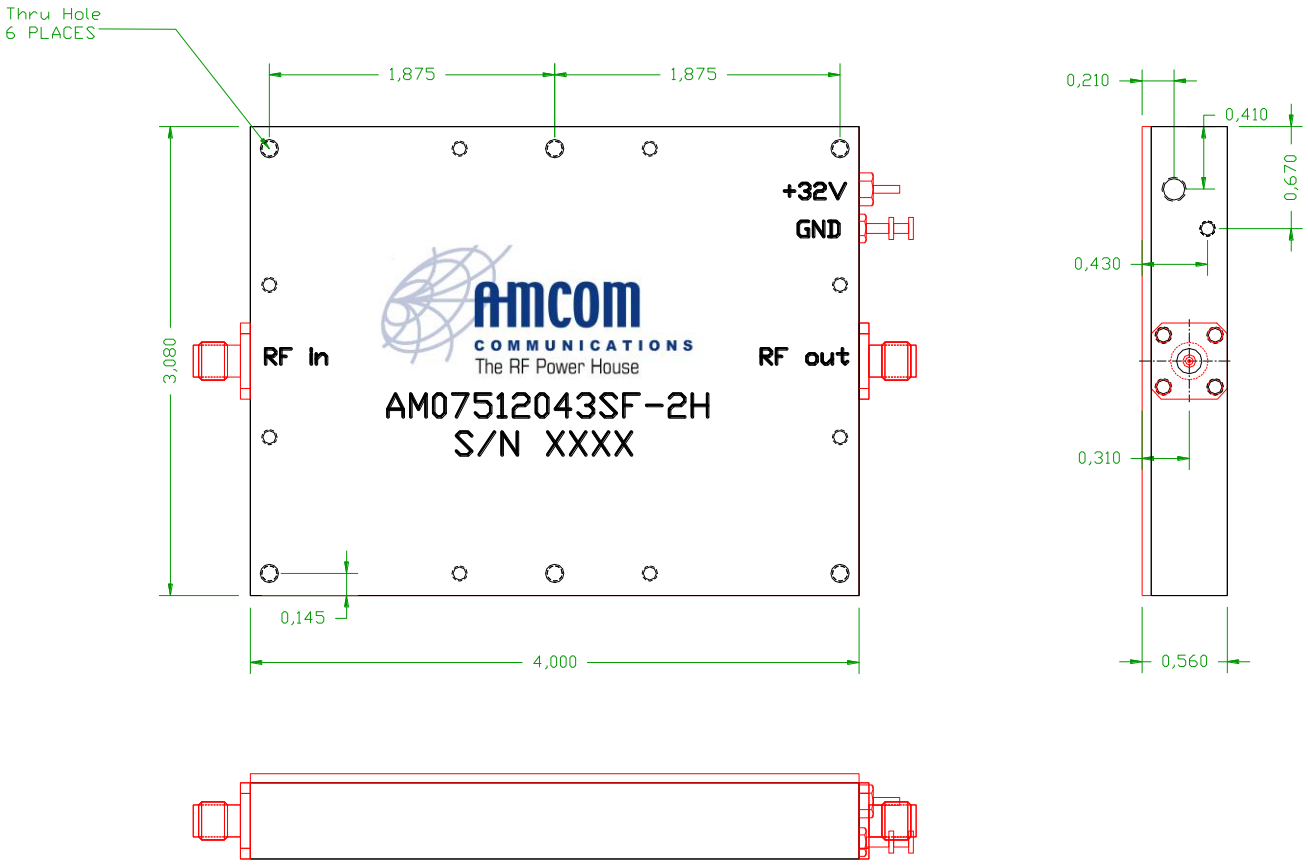
INTERMODULATION DISTORTION



NOISE FIGURE



PACKAGE OUTLINE



Notes:

1- Use a heat sink to remove heat from the package bottom
2- Female SMA for RF input and output