Power Amplifier Module
6.5 – 8.0 GHz, 38dB, 25W

AM658043SF-5H
July 2017
Rev A

DESCRIPTION

AMCOM's AM658043SF-5H is a broadband GaN Power Amplifier module. It is designed for general purpose applications. It operates from 6.5GHz to 8GHz and typically delivers 25 watts (44dBm) of CW output power and 38dB small signal gain. It has a built-in TTL On/Off control, and a voltage detector to monitor the output power. The amplifier module has 8 holes for mounting to a heat sink. This amplifier module is compact and light weight at 6.0" (L) x 3.6" (W) x 0.75" (H).

FEATURES

- Bandwidth from 6.5 to 8 GHz
- 44dBm of saturated CW output power
- High gain, 38dB
- Input / Output matched to 50 Ohms

APPLICATIONS

- Radar
- Fixed microwave backhaul
- Instrumentation and measurements

TYPICAL PERFORMANCE * (Quiescent bias is +28V, I_{dq}= 1.6A)

Parameters	Minimum	Typical **	Maximum
Frequency		6.5 – 8.0 GHz	
Small Signal Gain	33 dB	38 dB	43 dB
Gain Ripple		± 2.5 dB	± 3.5 dB
P_{1dB}		41 dBm	
P_{5dB}	41.5 dBm	44 dBm	
Efficiency @ P_{5dB}		13%	
Noise Figure		8.5 dB	
IP3		51 dBm	
Input Return Loss		15 dB	
Output Return Loss		15 dB	
TTL ON/OFF Control		OFF < 1V, ON > 2.5V	
Detector Voltage @ Pout=42dBm		1V	

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

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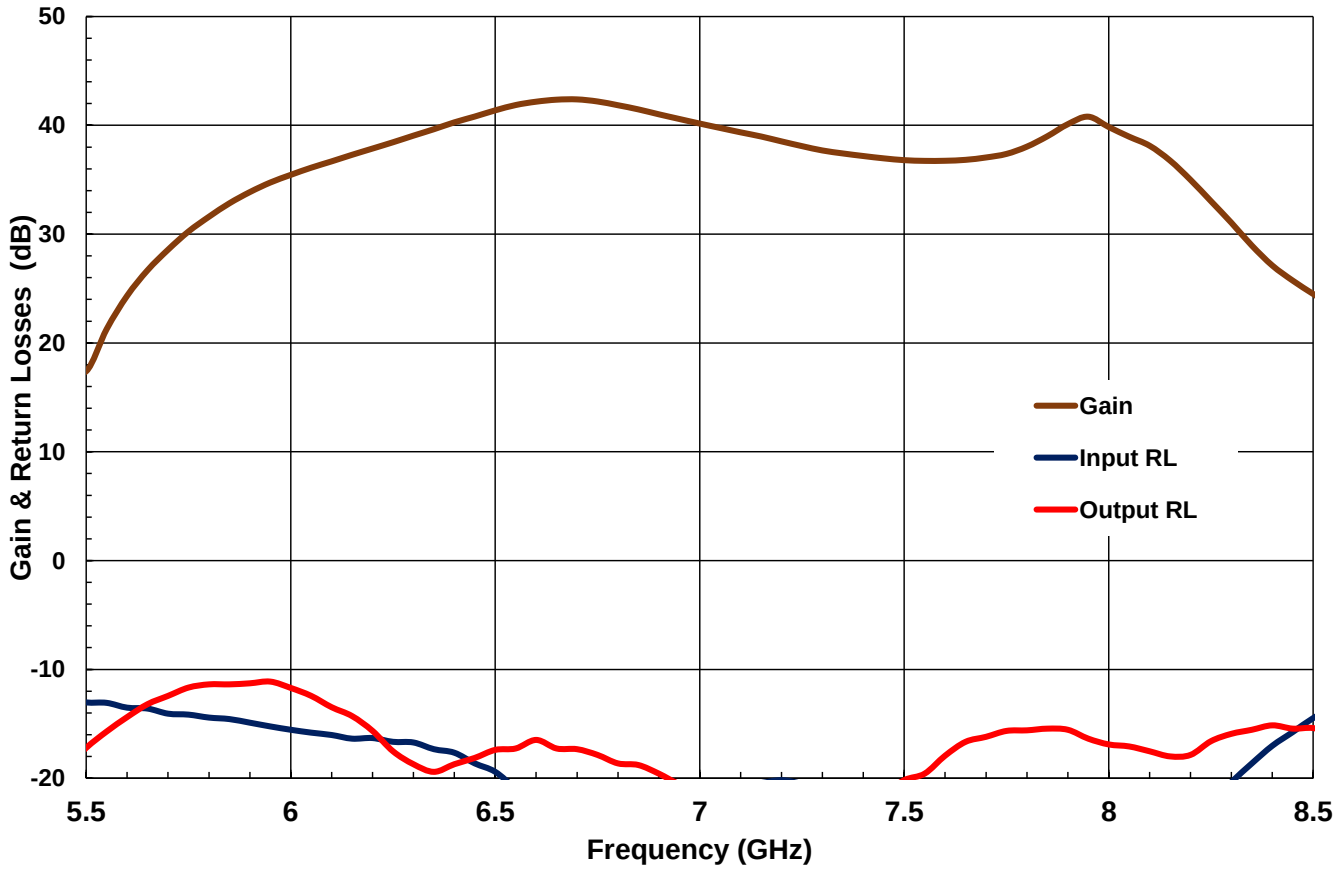
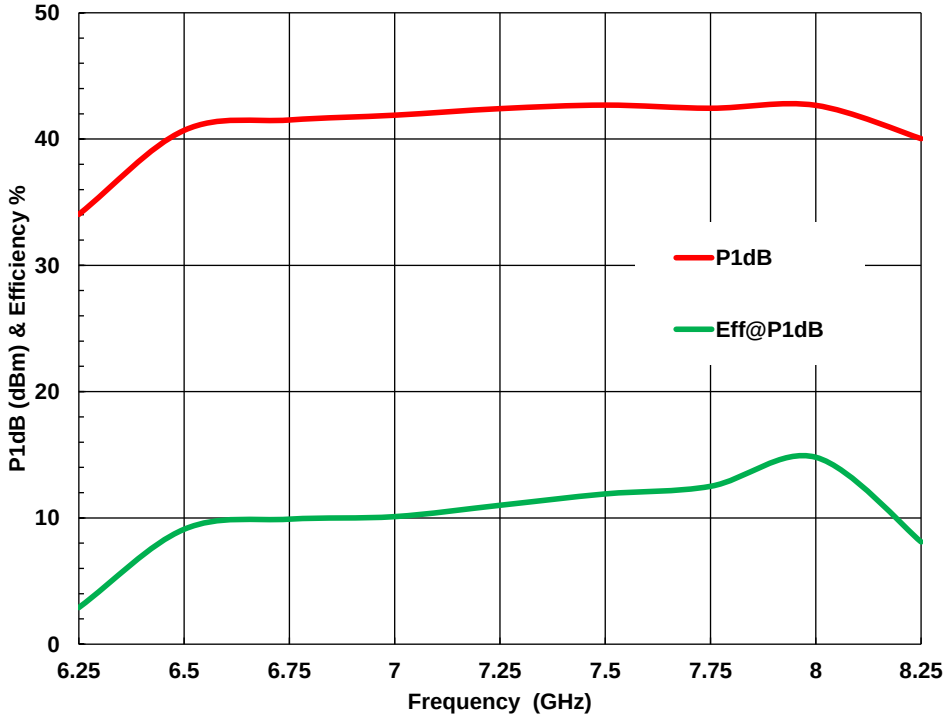
ABSOLUTE MAXIMUM RATING

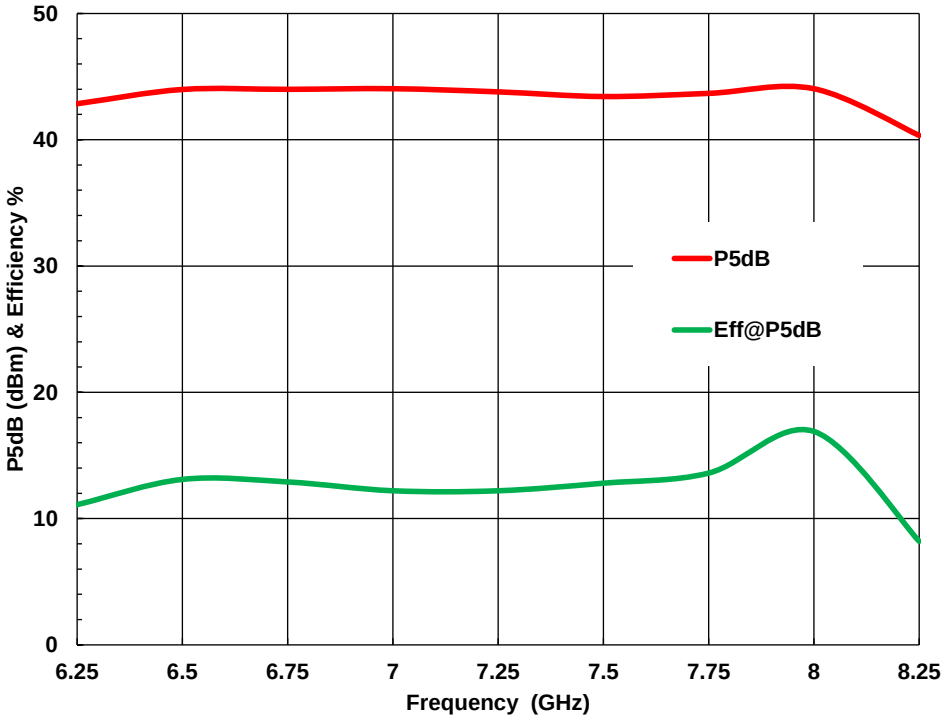
Parameters	Symbol	Rating
Drain source voltage	V_{ddq}	30V
Continuous dissipation at 25ºC	P_t	170W
Operating temperature	T_{op}	-40°C to +85°C
Storage temperature	T_{sto}	-55°C to +135°C

SMALL SIGNAL DATA



POWER DATA *


50
40
30
20
10
0
P1dB (dBm) & Efficiency %
P1dB
Eff@P1dB
6.25
6.5
6.75
7
7.25
7.5
7.75
8
8.25
Frequency (GHz)


50
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P5dB (dBm) & Efficiency %
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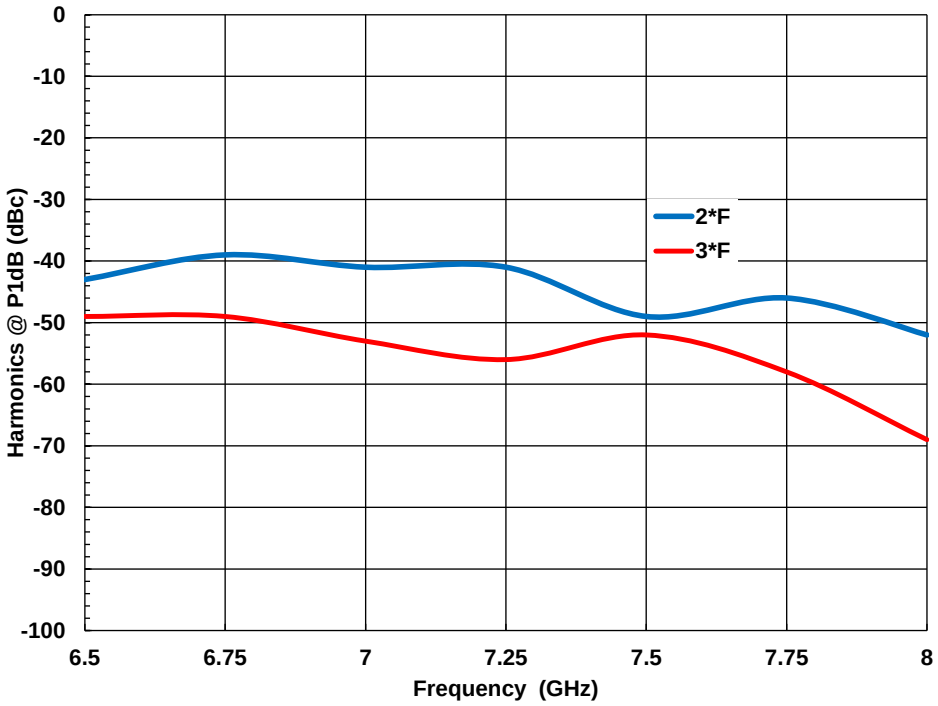
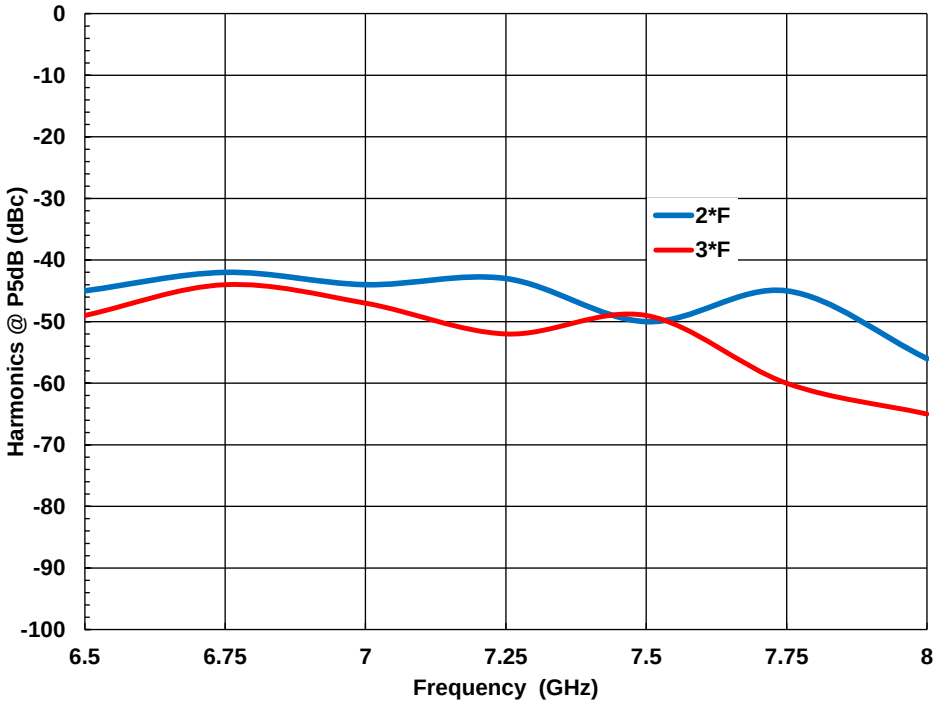
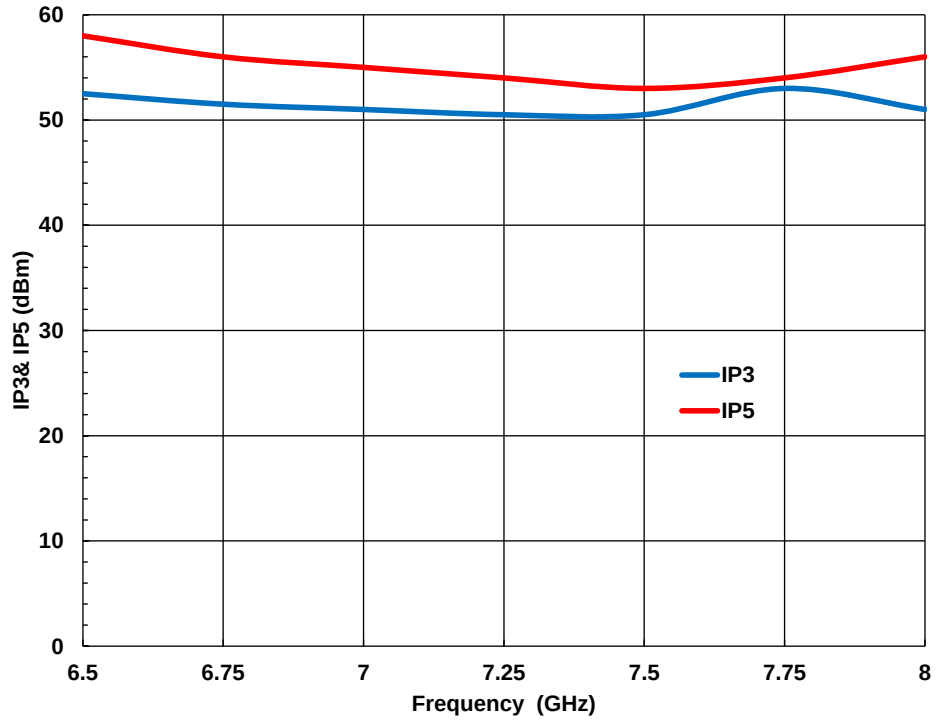
7
7.25
7.5
7.75
8
8.25
Frequency (GHz)

HARMONICS

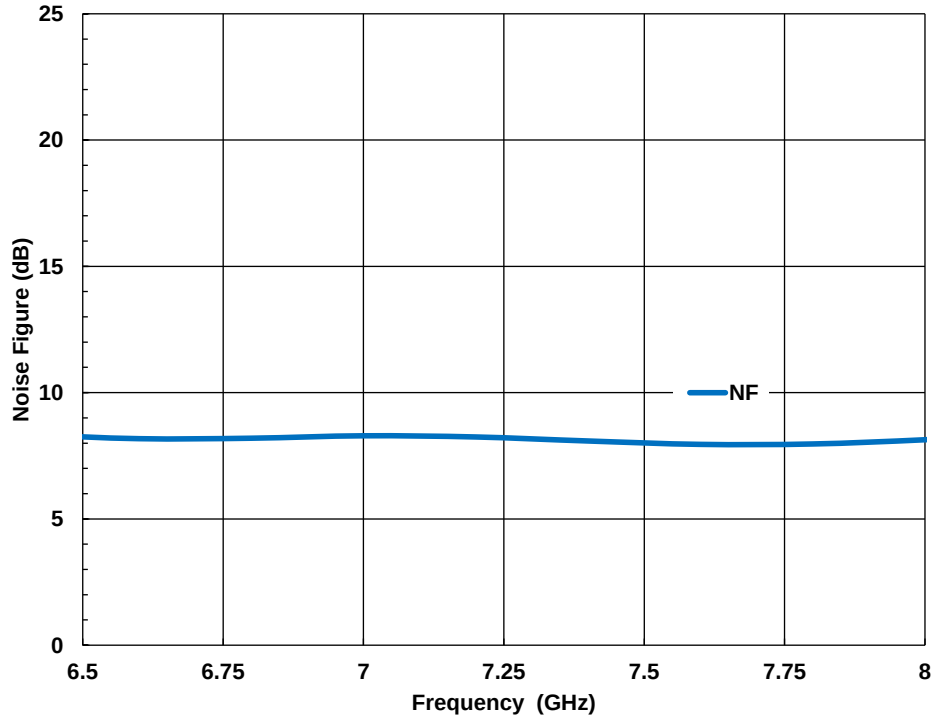

0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
Harmonics @ P1dB (dBc)
2*F
3*F
6.5
6.75
7
7.25
7.5
7.75
8
Frequency (GHz)


0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
Harmonics @ P5dB (dBc)
2*F
3*F
6.5
6.75
7
7.25
7.5
7.75
8
Frequency (GHz)

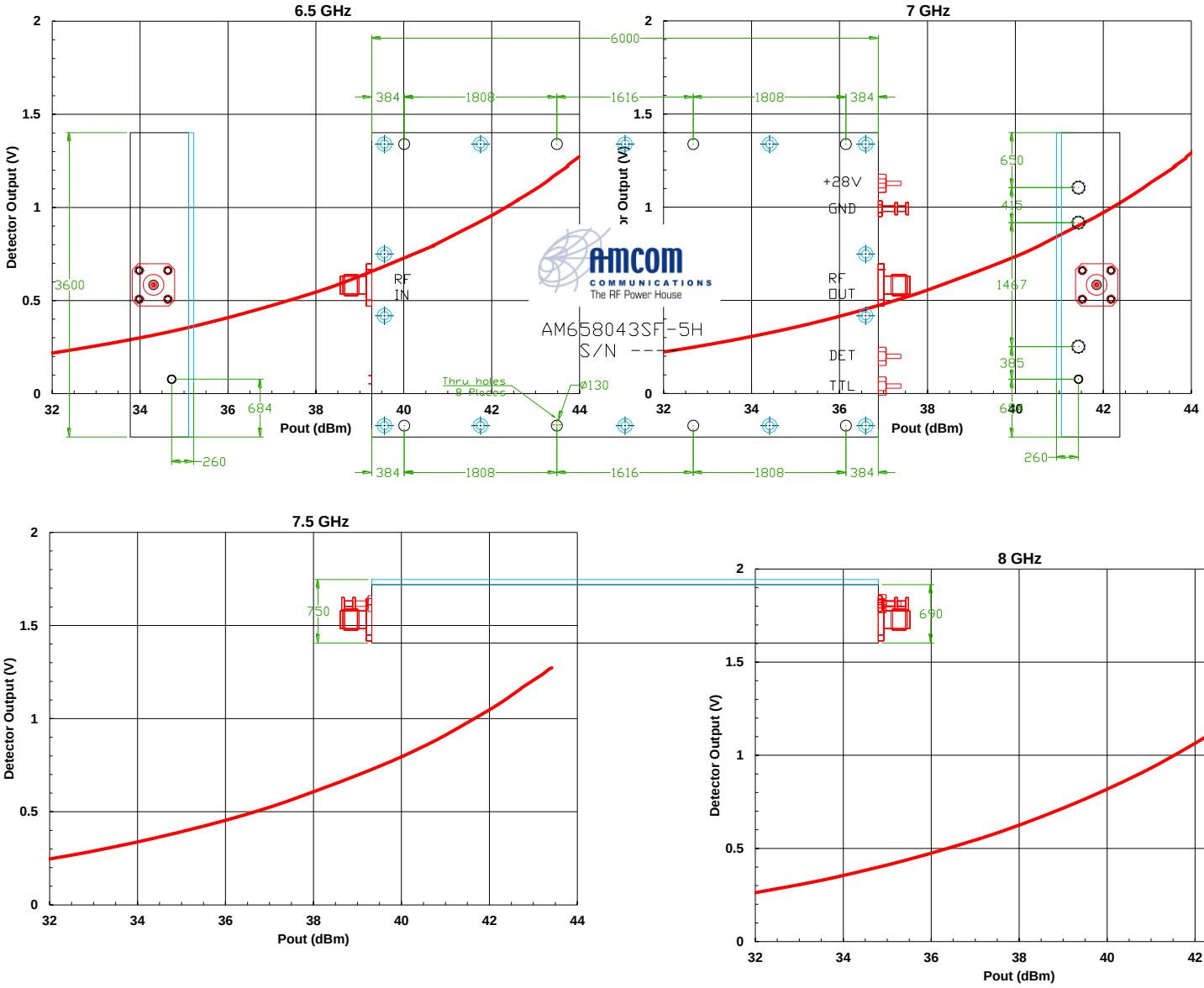
INTERMODULATION DISTORTION



NOISE FIGURE



DETECTOR VOLTAGE LEVEL



PACKAGE OUTLINE

NOTES:

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

3- Dimensions in mils.