



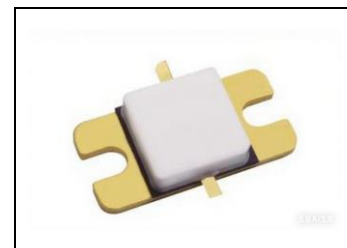
## 4-8GHz, 30W, GaN Fully matched PA Module

### Description

The GMAH4080-31A2T is a 30-watt, single stage integrated Power Amplifier Module, designed Full band application from 4 to 8GHz.

The module is 50  $\Omega$  input/output matched and requires minimal external components.

Vgs=-2.45V Idq=100mA, Vds=28V Signal: CW



Freq(MHz)	Pin(dBm)	Pout(dBm)	Pout(W)	IDS(A)	Gain(dB)	Eff(%)	2 <sup>nd</sup> Harmonic	3 <sup>rd</sup> Harmonic
3500	38.45	45.81	38.1	3.39	7.36	40.2	-8.8	-39.2
4000	38.47	47.16	52.0	3.83	8.69	48.5	-11.3	-23.8
4500	38.20	47.41	55.1	3.88	9.21	50.7	-22.0	-44.6
5000	38.44	47.22	52.7	3.31	8.78	56.9	-34.0	-40.5
5500	38.18	46.96	49.7	3.44	8.78	51.6		
6000	37.50	46.42	43.9	3.10	8.92	50.5		
6500	37.22	45.41	34.8	3.05	8.19	40.7		
7000	36.79	45.54	35.8	3.07	8.75	41.7		
7500	37.07	45.21	33.2	2.82	8.14	42.0		
8000	37.37	45.65	36.7	3.28	8.28	40.0		

Recommended driver: GMAH2080-10C9

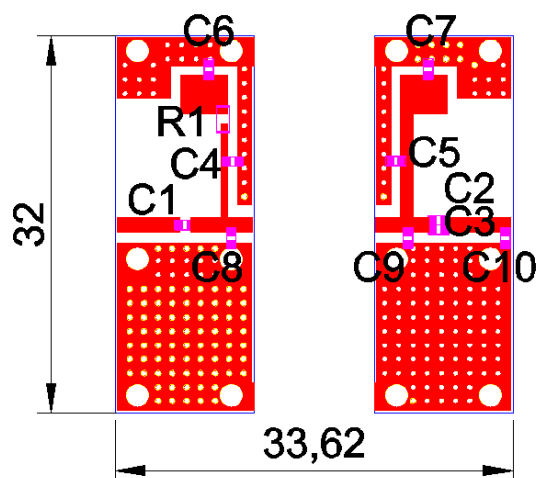
### Applications

- Power Amplifiers within S and C band
- Test Instrumentation
- EMC Amplifier Drivers
- 2-way Radios

Table 1. Maximum Ratings

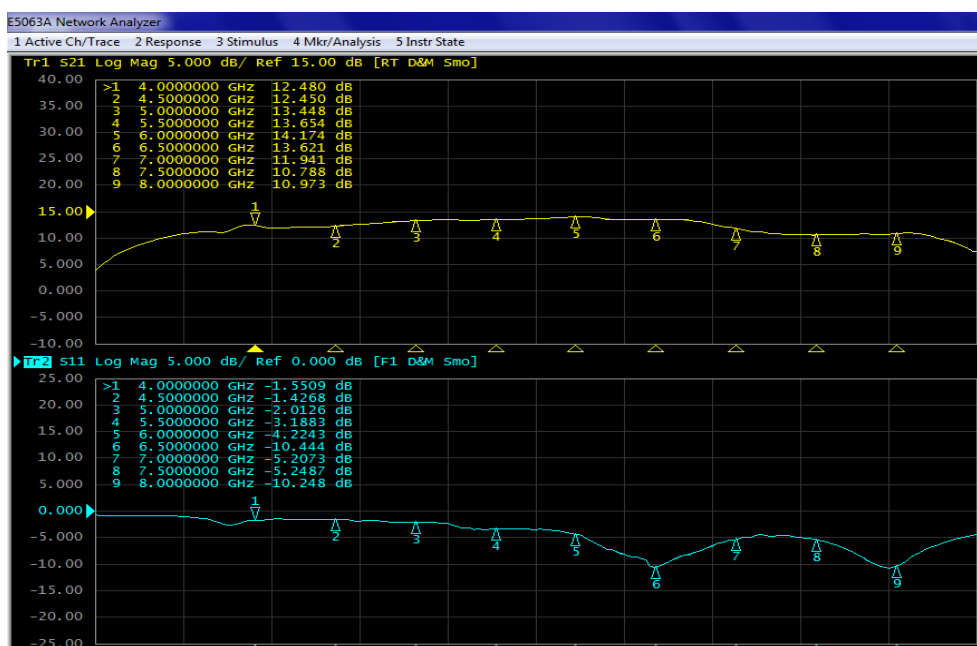
Rating	Symbol	Value	Unit
Drain--Source Voltage	V <sub>DSS</sub>	150	Vdc
Gate--Source Voltage	V <sub>GS</sub>	-10 to +2	Vdc
Operating Voltage	V <sub>DD</sub>	+32	Vdc
Storage Temperature Range	T <sub>stg</sub>	-65 to +150	°C
Case Operating Temperature	T <sub>C</sub>	+150	°C
Operating Junction Temperature	T <sub>J</sub>	+225	°C

## Typical application circuit



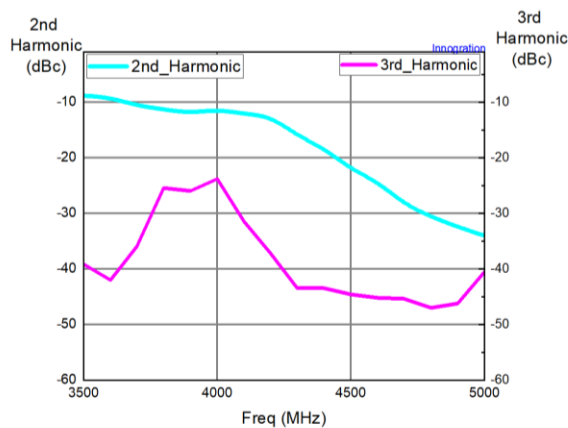
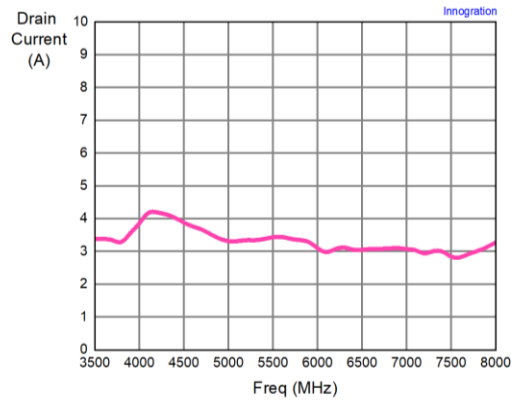
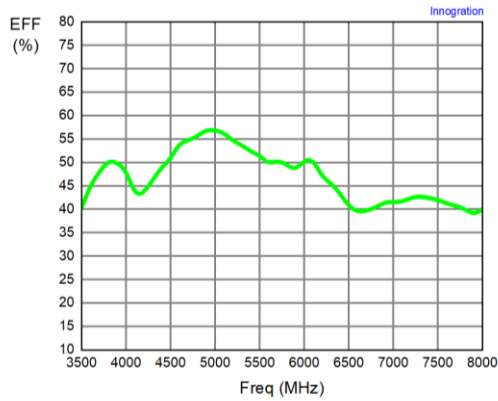
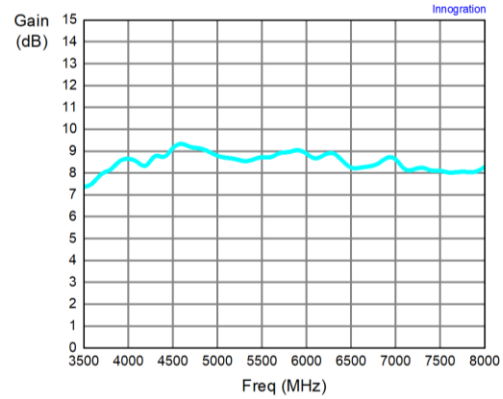
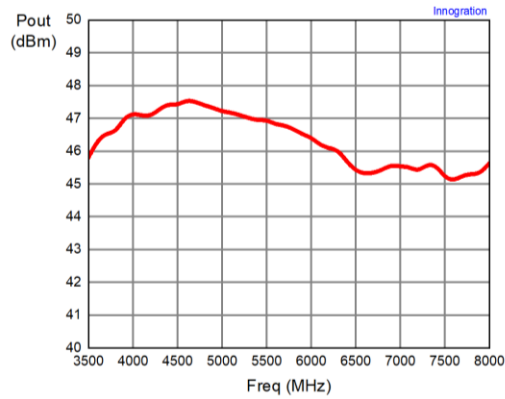
Component	Description	Suggested Manufacturer / Series Number
C1	2.2 pF	
C2 C3	2 pF	ATC600S
C4	56 pF	
C5	120 pF	
C6 C7	10 uF	TDK
C8	0.2 pF	
C9	0.3 pF	
C10	0.1 pF	
R1	10 Ohm	Open suppliers. 1206 SMD Resistor
PCB	20Mil Rogers 4350	Rogers

## Typical RF Performance



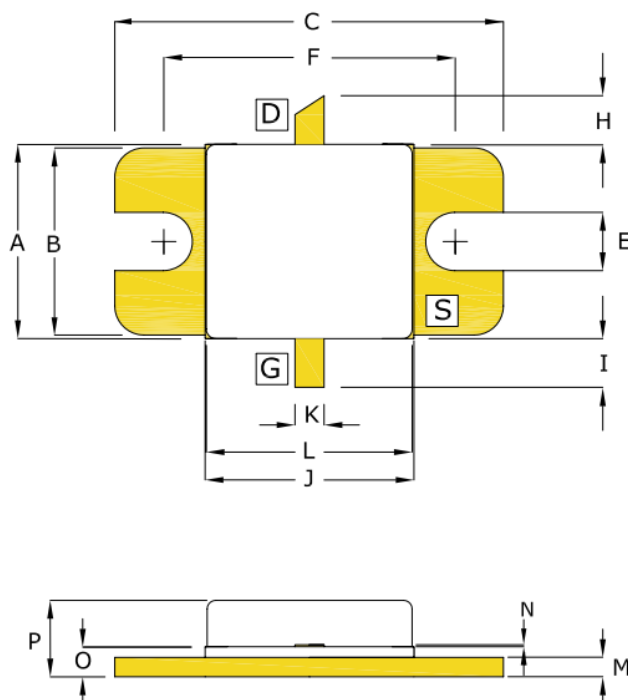


**XMAH4080-31A2T\_rev5 CW Test**  
**Vgs=-2.24V Vds=28V Idq=200mA**





## Package Dimensions



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.395	0.405	10.03	10.29
B	0.380	0.390	9.65	9.91
C	0.795	0.805	20.19	20.45
E	0.115	0.125	2.92	3.18
F	0.595	0.605	15.11	15.37
H	0.090	0.110	2.29	2.79
I	0.090	0.110	2.29	2.79
J	0.425	0.435	10.80	11.05
K	0.055	0.065	1.40	1.65
L	0.420	0.428	10.67	10.87
M	0.035	0.045	0.89	1.14
N	0.004	0.007	0.10	0.18
O	0.053	0.067	1.35	1.70
P	0.143	0.179	3.63	4.55

PIN SCHEDULE	
D	DRAIN
S	SOURCE
G	GATE

## Revision history

Table 6. Document revision history

Date	Revision	Datasheet Status
2026/1/29	Rev 1.0	Preliminary Datasheet

Application data based on JF-26-07 (Rev5)

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