



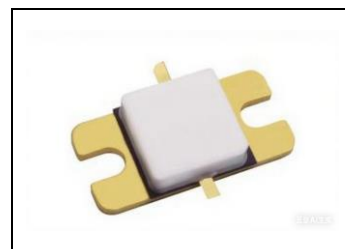
4-8GHz, 30W, GaN Fully matched PA Module

Description

The XMAH4080-30A2T is a 30-watt, single stage integrated Power Amplifier Module, designed for Full band application from 4 to 8GHz. At 32V, it can deliver 40W across the full band

The module is 50 Ω input/output matched and requires minimal external components.

Vgs=-2.3V Idq=100mA, Vds=28V Signal: CW



Freq(MHz)	Pin(dBm)	Pout(dBm)	Pout(W)	IDS(A)	Gain(dB)	Eff(%)	2 nd Harmonic	3 rd Harmonic
4000	36.90	45.57	36.1	2.33	8.67	55.3	-8.7	-32.0
4100	37.60	45.72	37.3	2.30	8.12	58.0	-9.5	-41.0
4200	37.62	45.78	37.8	2.47	8.16	54.7	-10.9	-30.0
4500	37.84	46.70	46.8	2.91	8.86	57.4	-16.1	-46.7
5000	38.69	46.43	44.0	3.47	7.74	45.2	-43.5	-39.2
5500	37.81	46.57	45.4	3.82	8.76	42.4		
6000	38.14	46.47	44.4	3.85	8.33	41.2		
6500	36.72	46.00	39.8	3.14	9.28	45.3		
7000	36.81	45.10	32.4	2.32	8.29	49.8		
7500	38.05	45.14	32.7	2.61	7.09	44.7		
8000	37.06	45.32	34.0	3.12	8.26	39.0		
8500	38.67	45.32	34.0	3.20	6.65	38.0		

Recommended driver: GMAH3080-10C9

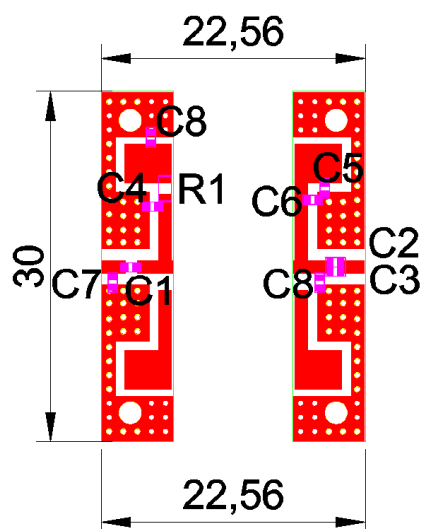
Applications

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

Table 1. Maximum Ratings

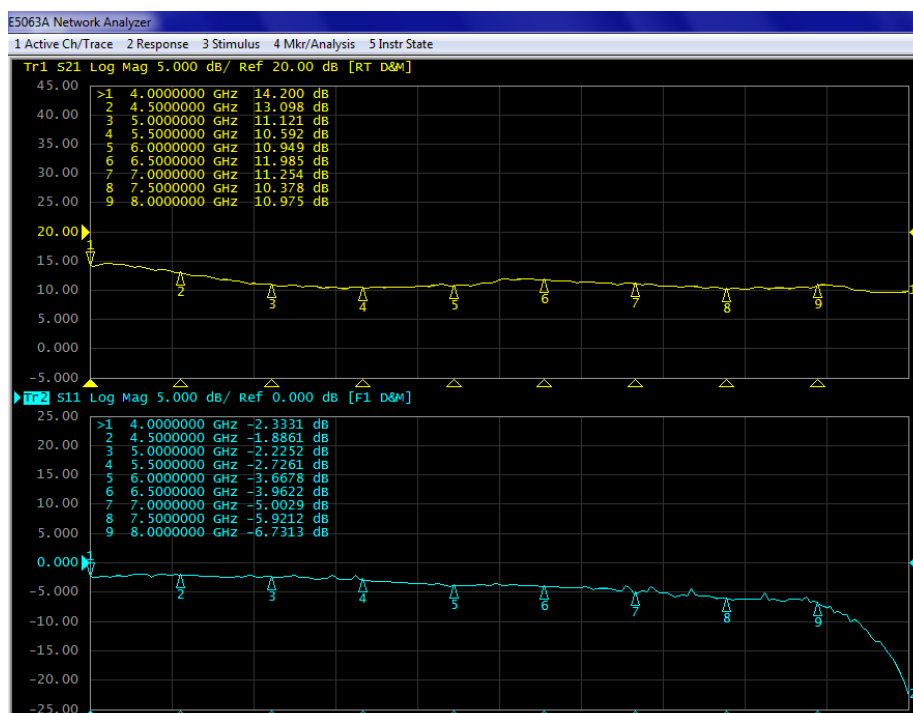
Rating	Symbol	Value	Unit
Drain--Source Voltage	V _{DSS}	150	Vdc
Gate--Source Voltage	V _{GS}	-10 to +2	Vdc
Operating Voltage	V _{DD}	+32	Vdc
Storage Temperature Range	T _{stg}	-65 to +150	°C
Case Operating Temperature	T _c	+150	°C
Operating Junction Temperature	T _j	+225	°C

Typical application circuit



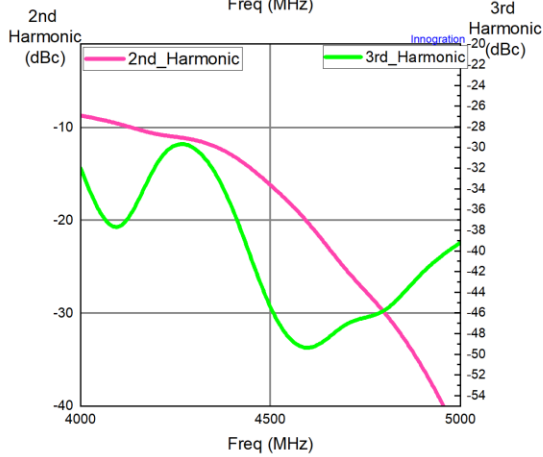
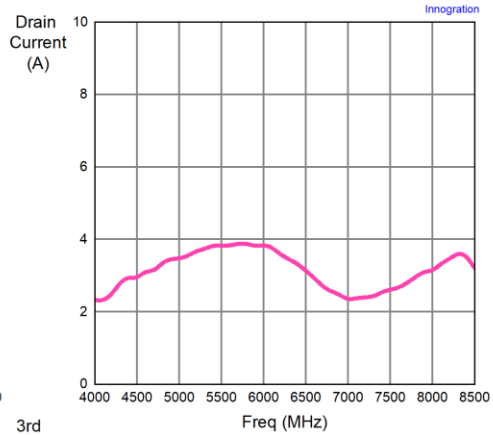
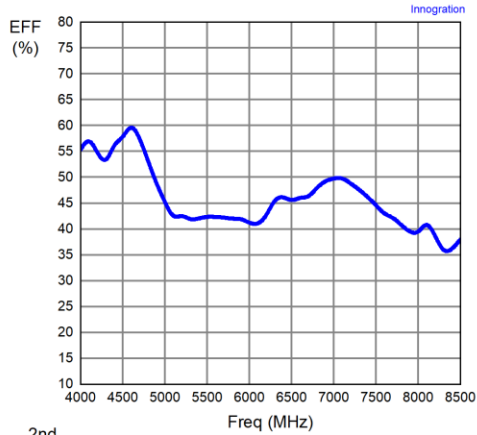
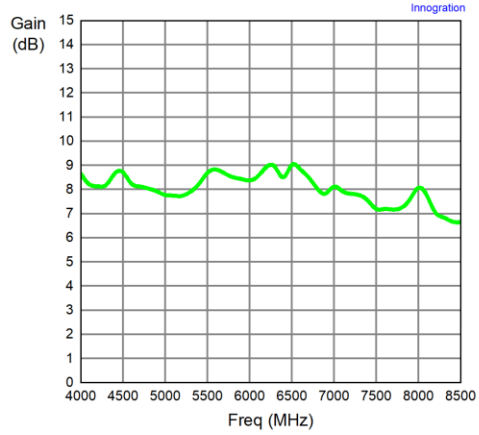
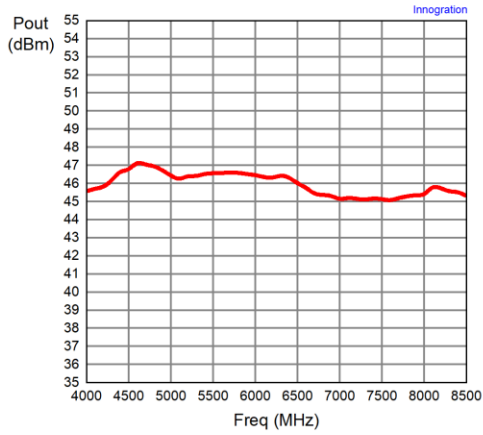
Component	Description	Suggested Manufacturer / Series Number
C1	2.2 pF	ATC600F
C2 C3 C4	2 pF	ATC600F
C5 C8	1 uF	MQ400805 BEIJING YUANLU HONGYUAN ELECTRONICTECHNOLOGYCO., LTD
C6	56 pF	MQ400805 BEIJING YUANLU HONGYUAN ELECTRONICTECHNOLOGYCO., LTD
C7 C8	0.2 pF	ATC600F
R1	10 Ohm	Open suppliers. 1206 SMD Resistor
PCB	20Mil Rogers 4350	Rogers

Typical RF Performance



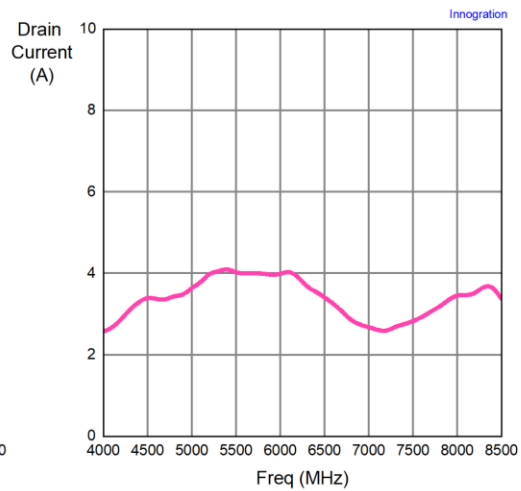
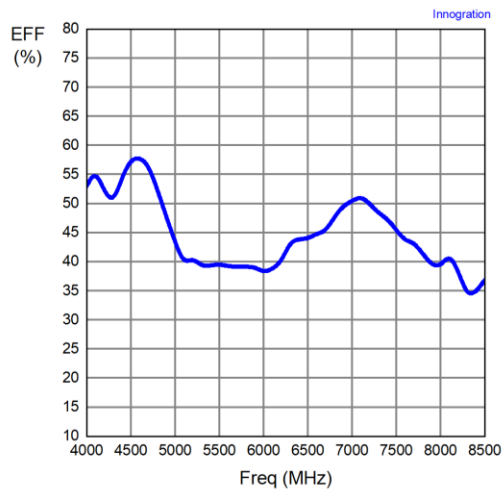
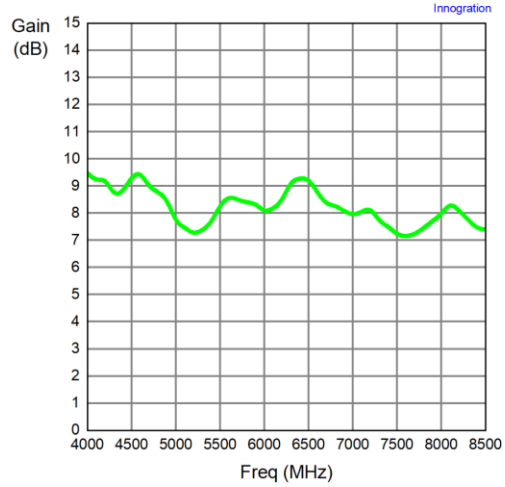
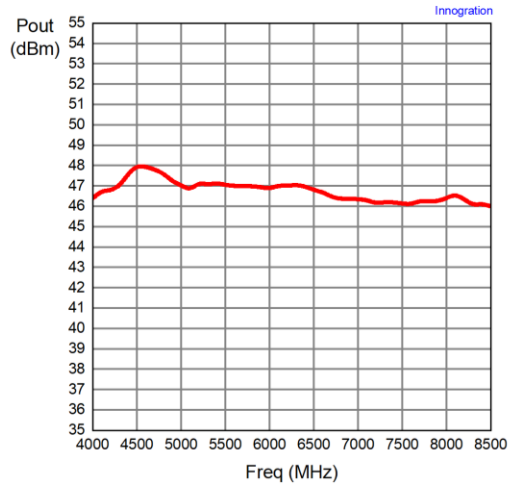


XMAH4080-30A2T_rev3-v1 CW Test
Vgs=-2.34V Vds=28V Idq=100mA



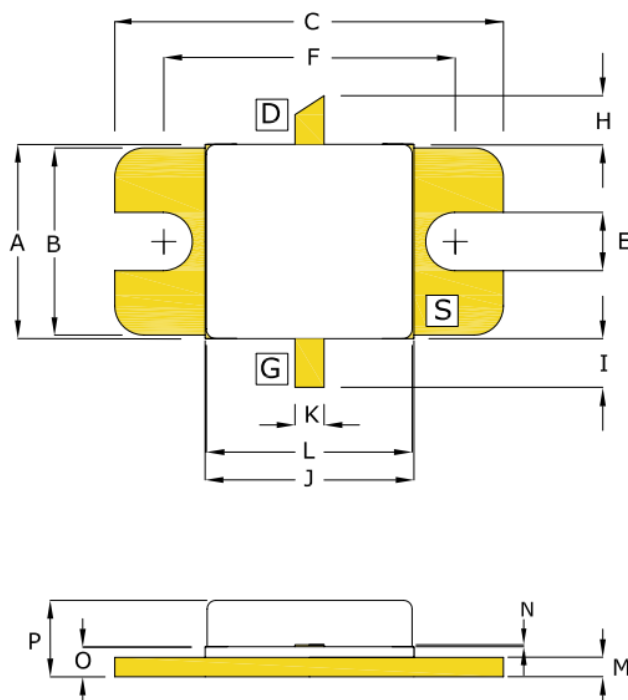


XMAH4080-30A2T_rev3-v1 CW Test
V_{gs}=-2.34V V_{ds}=32V I_{dq}=100mA





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
2025/8/8	Rev 1.0	Advanced Datasheet

Application data based on JF-25-14 (B10*2 V1, B20 V2)

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