

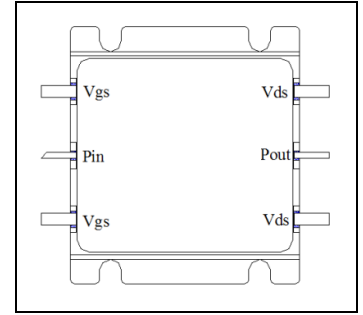


## 2.0-6.0GHz, 80W, GaN Fully matched PA Module

### Description

The XMAH2060-80H3 is a 80-watt Psat capable, single stage integrated IMFET, designed for broad band applications, with frequencies from 2.0 to 6.0GHz. The module is 50 Ω input/output matched and requires minimal external components.

The module implements multiple GaN active dice and its matching network within highly compact 30.8\*27.4mm metal RF package with excellent capability for heat dissipation.



**Pout at Vds=28V, Idq=200mA**

Freq(MHz)	Pin(dBm)	Pout(dBm)	Pout(W)	IDS(A)	Gain(dB)	Eff(%)	2nd Harmonic	3rd Harmonic
2000	42.83	50.50	112.2	6.23	7.67	64	-17.1	-13.0
2500	42.98	50.16	103.8	6.96	7.18	53	-20.2	-25.6
3000	43.00	50.21	105.0	9.13	7.21	41	-15.4	-37.3
3500	43.80	51.00	125.9	10.75	7.20	42	-25.0	-42.8
4000	43.13	50.23	105.4	8.68	7.10	43	-39.1	-36.9
4500	42.51	49.50	89.1	9.43	6.99	34		
5000	43.44	50.50	112.2	9.96	7.06	40		
5500	40.64	50.18	104.2	9.96	9.54	37		
6000	39.50	49.54	89.9	7.82	10.04	41		

### Applications

- Ultra Broadband Amplifiers within S/C band
- Test Instrumentation
- EMC Amplifier Drivers
- 2-way Radios

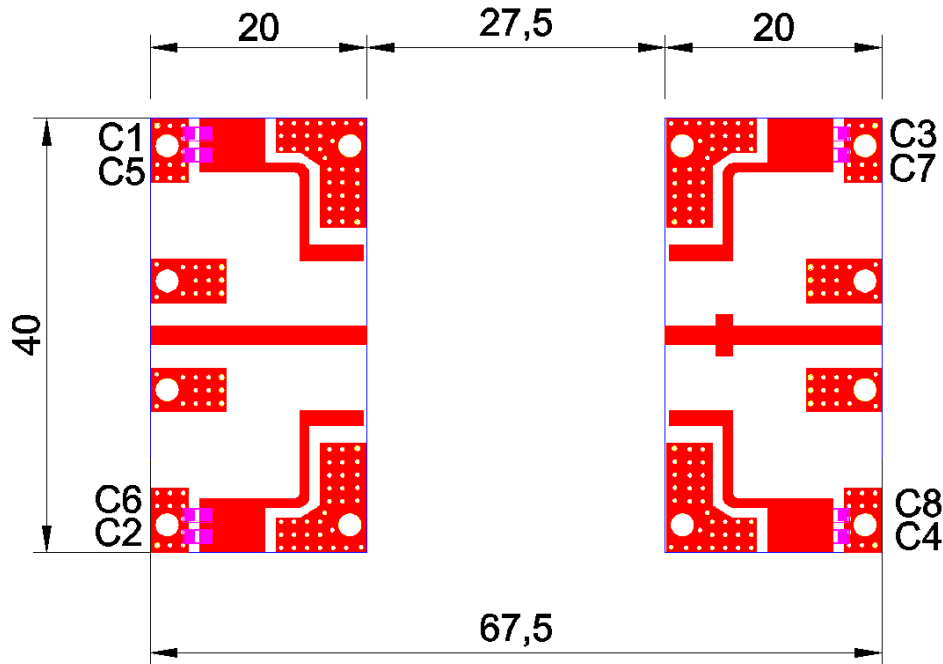
**Table 1. Maximum Ratings**

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

**Table 2. Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Case T <sub>c</sub> = 25°C, Pout=80W, FEA	R <sub>θJC</sub>	0.8	°C/W

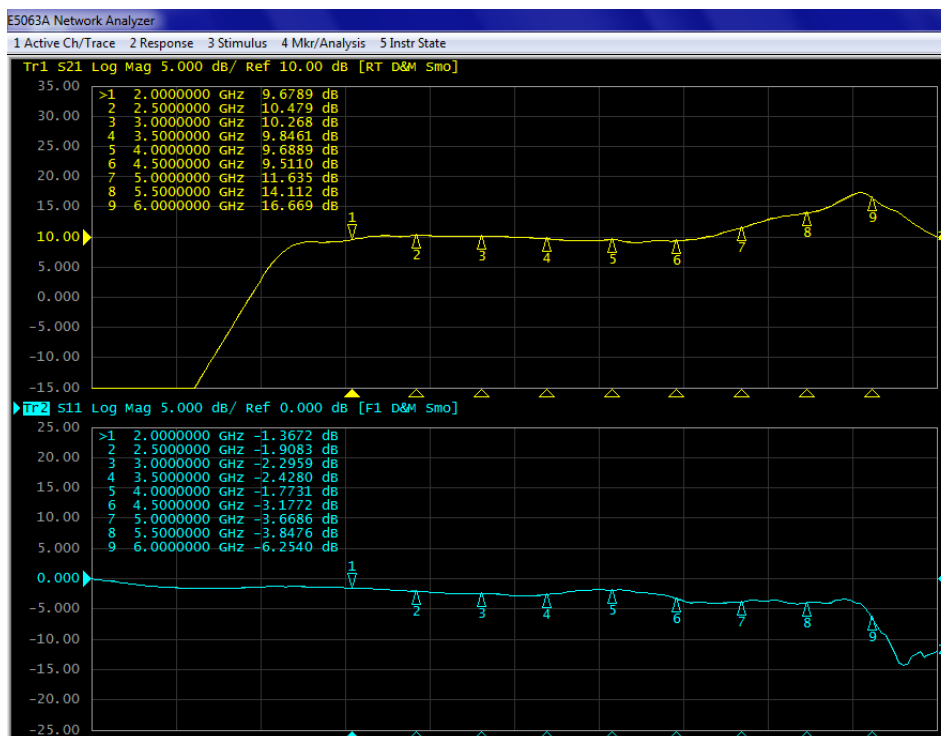
Typical application circuit



Component	Description	Suggestion
C1 C2 C3 C4	10 uF	1210
C5 C6 C7 C8	100 pF	MQ301111
PCB	30Mil Rogers 4350	

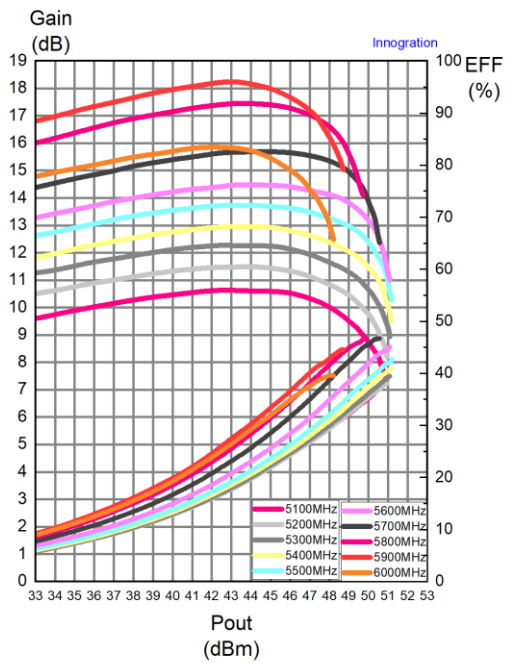
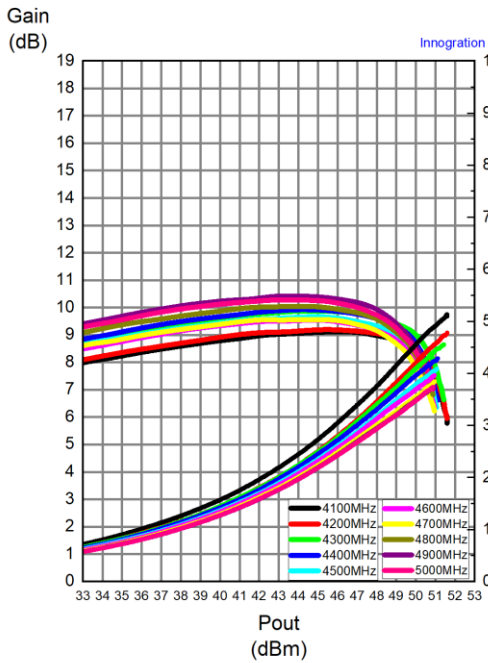
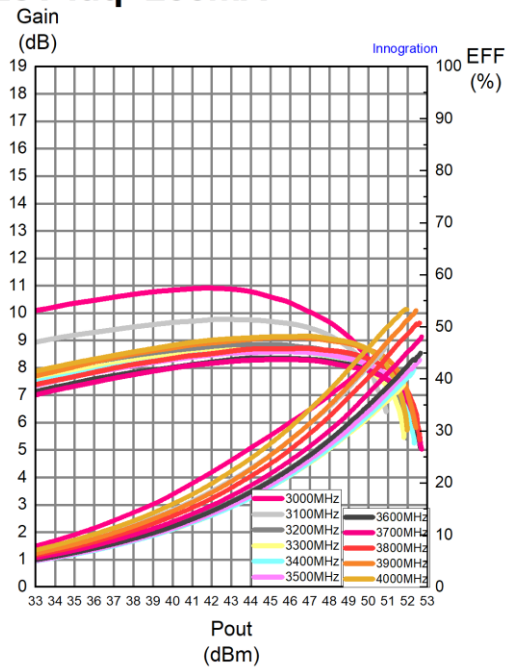
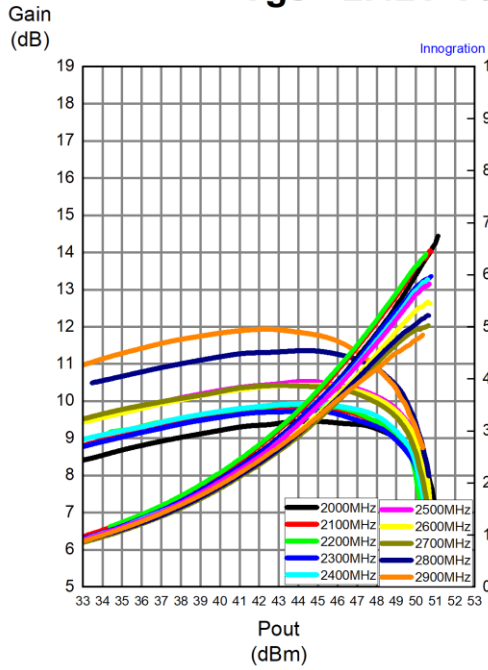
TYPICAL CHARACTERISTICS

Figure 1. Network analyzer output S11/S21 (Pin=0dBm, Idq=500mA)



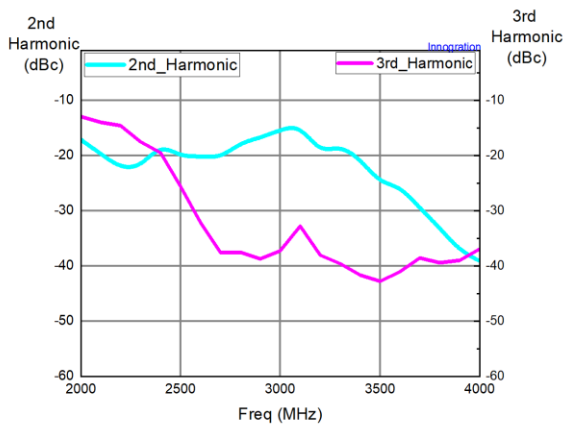
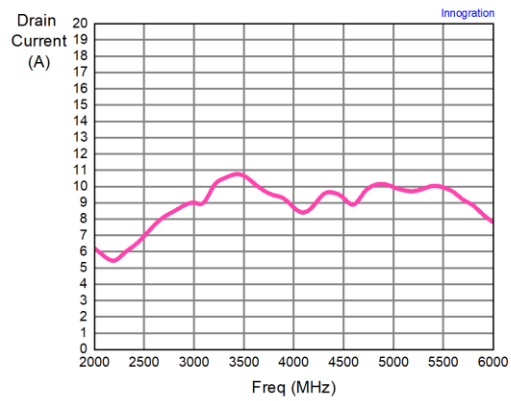
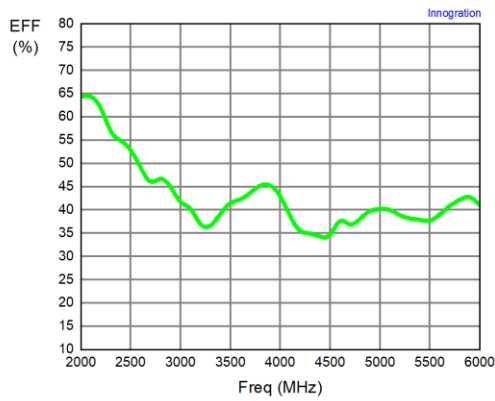
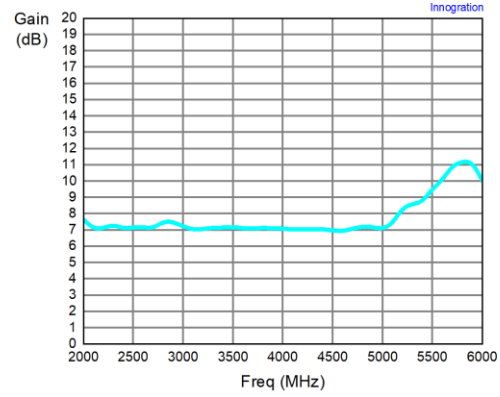
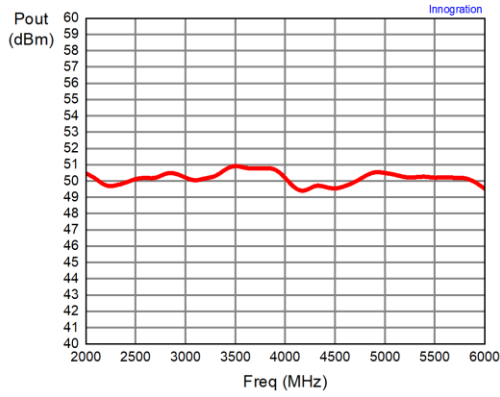


**XMAH2060-80H3\_rev6 Pulse 100us 10%**  
**Vgs=-2.42V Vds=28V Idq=200mA**



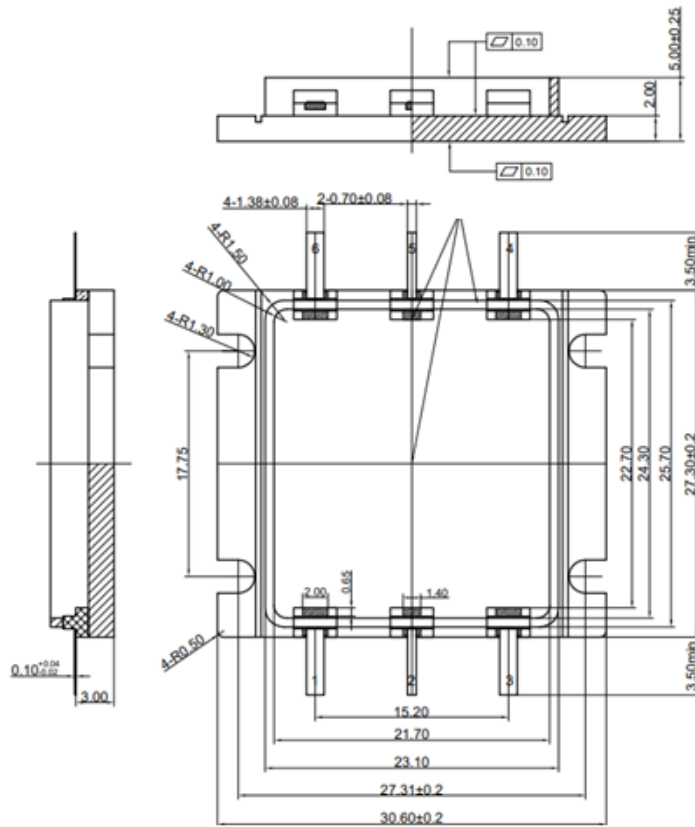


**XMAH2060-80H3\_Rev6 CW Test**  
**Vgs=-2.42V Vds=28V Idq=200mA**





### Package Dimensions (Unit:mm)



### Revision history

Table 6. Document revision history

Date	Revision	Datasheet Status
2025/8/19	Rev 1.0	Advanced Datasheet
2025/9/14	Rev 2.0	Modify the Rth
2026/1/29	Rev 3.0	Preliminary datasheet using the latest application result

Application data based on JF-25-18/26-04

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