



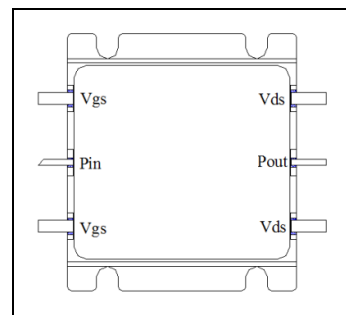
0.8-4.9GHz, 60W, GaN Fully matched PA Module

Description

The GMAH0849-60H3 is a 60-watt Psat capable, single stage integrated IMFET, designed for broad band applications, with frequencies from 0.8 to 4.9GHz. The module is 50 Ω input/output matched and requires minimal external components. In typical application at fixed pin at 10W, it can deliver >60W across the full band.

When used at higher voltage like 32V, it can deliver up to 80W Psat across the full band

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 28V and fixed input power, CW

Freq (MHz)	Pin (dBm)	Pout (dBm)	Pout (W)	IDS (A)	Gain (dB)	Eff (%)
800	40.00	48.91	77.8	5.41	8.91	51
1000	40.00	48.62	72.8	4.71	8.62	55
1500	40.00	49.41	87.3	5.56	9.41	56
2000	40.00	49.51	89.3	5.68	9.51	56
2500	40.00	48.67	73.6	5.72	8.67	46
3000	40.00	49.30	85.1	6.00	9.30	50
3500	40.00	48.67	73.6	7.47	8.67	35
4000	40.00	49.38	86.7	6.80	9.38	45
4500	40.00	48.83	76.4	6.94	8.83	39.
4900	40.00	48.13	65.0	5.8	8.13	40

Psat across the full band at different input power referred to later pages, 32V data upon request

Applications

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

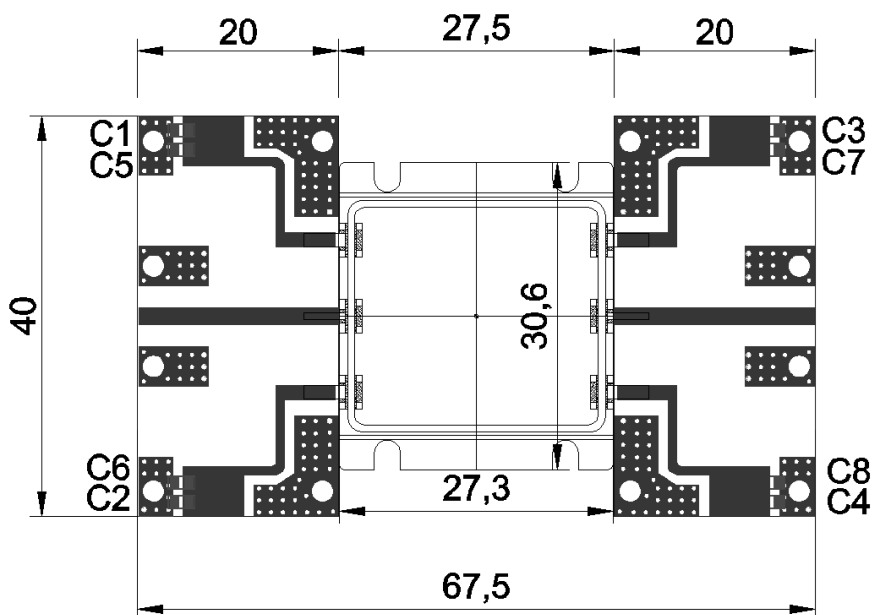
Table 1. Maximum Ratings

Rating	Symbol	Value	Unit
Drain--Source Voltage	V_{DS}	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

Table 2. Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Case $T_c = 25^\circ\text{C}$, Pout=60W, FEA	$R_{\theta JC}$	1.05	°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=200mA)

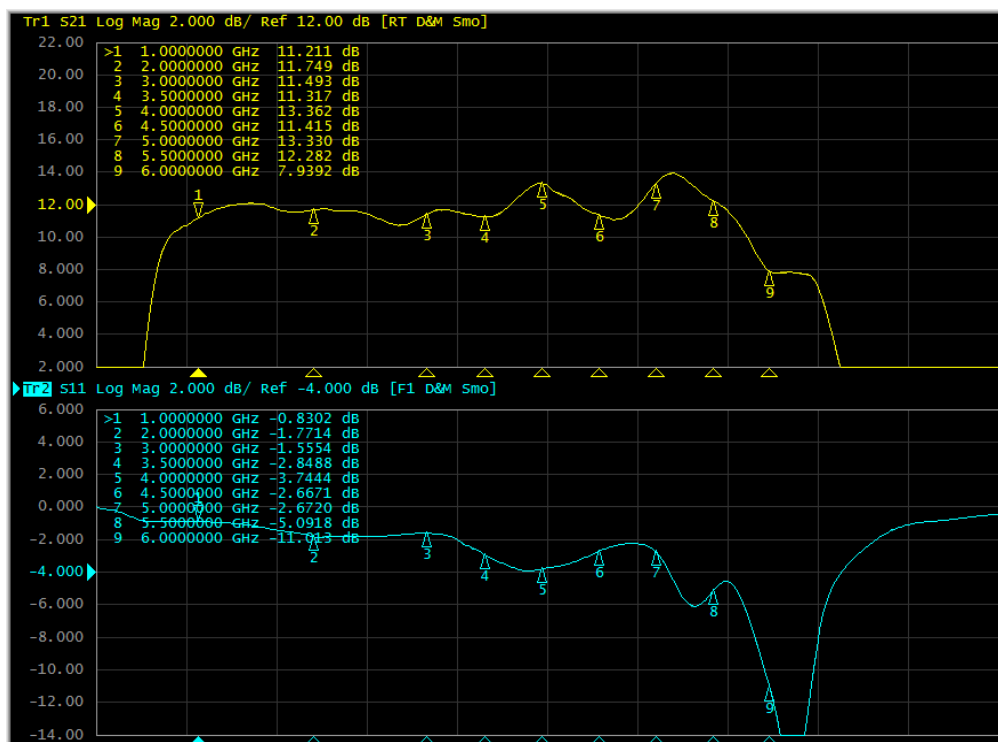
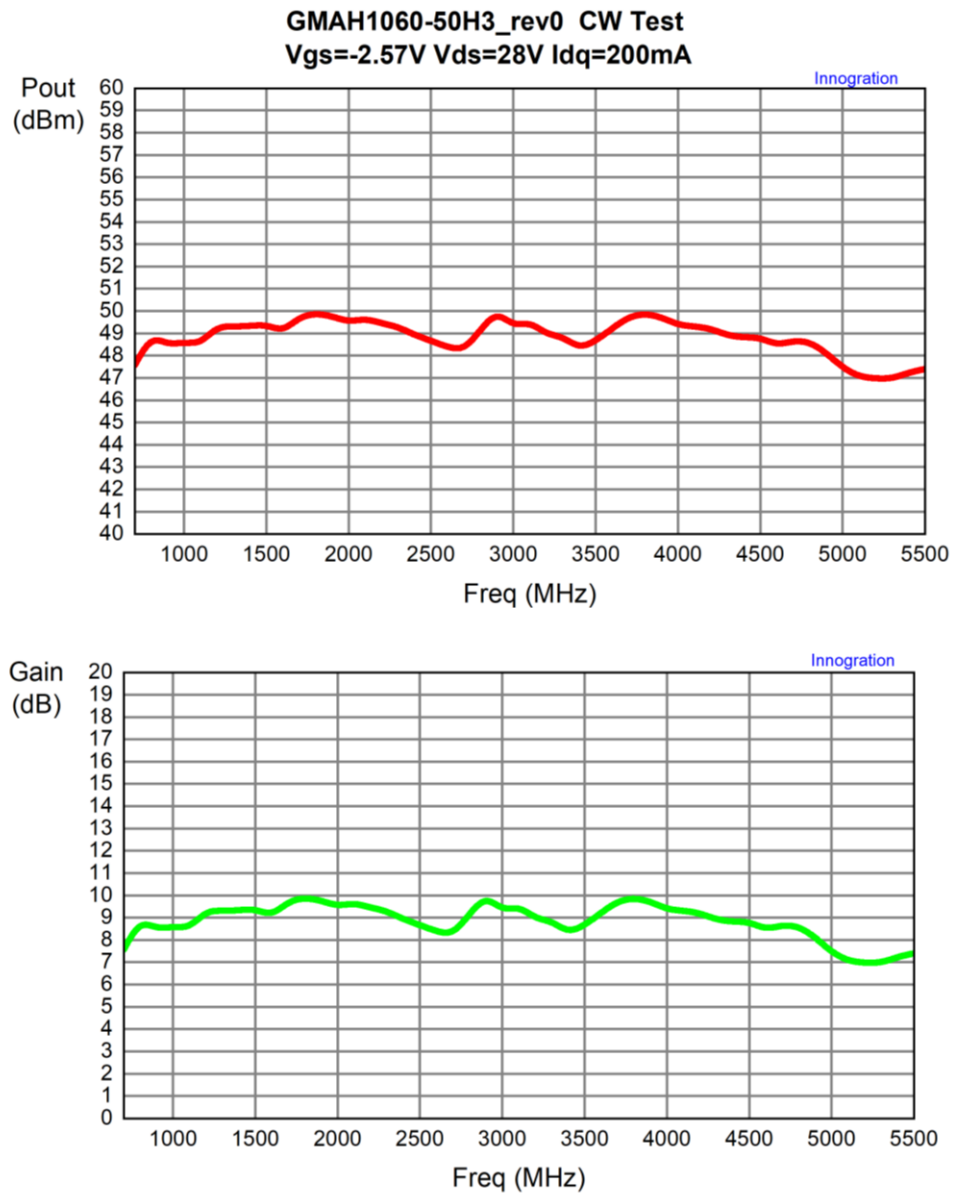


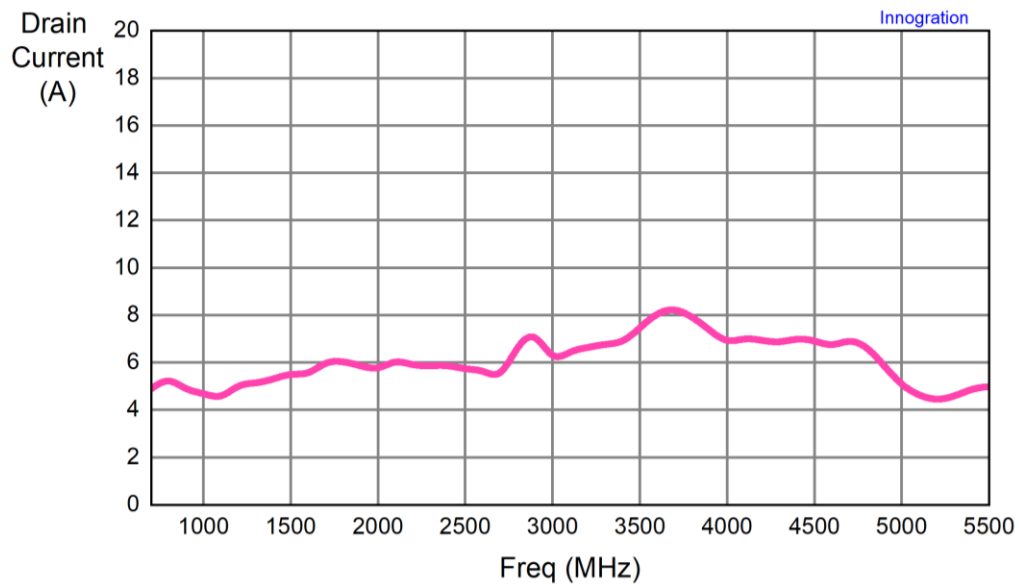
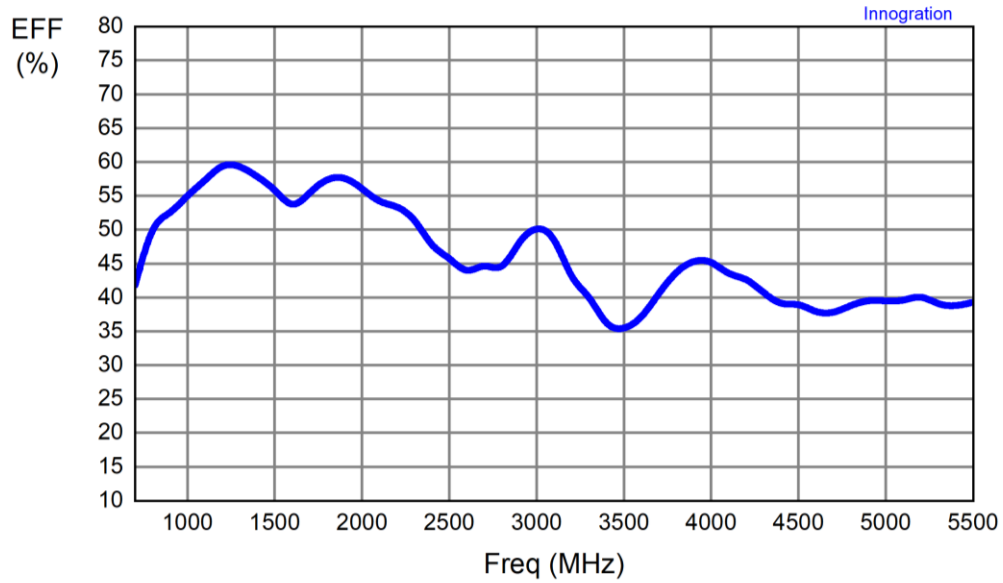


Figure 3. Pout, Eff, Gain, drain current Vs Frequency When fixed Pin @28V

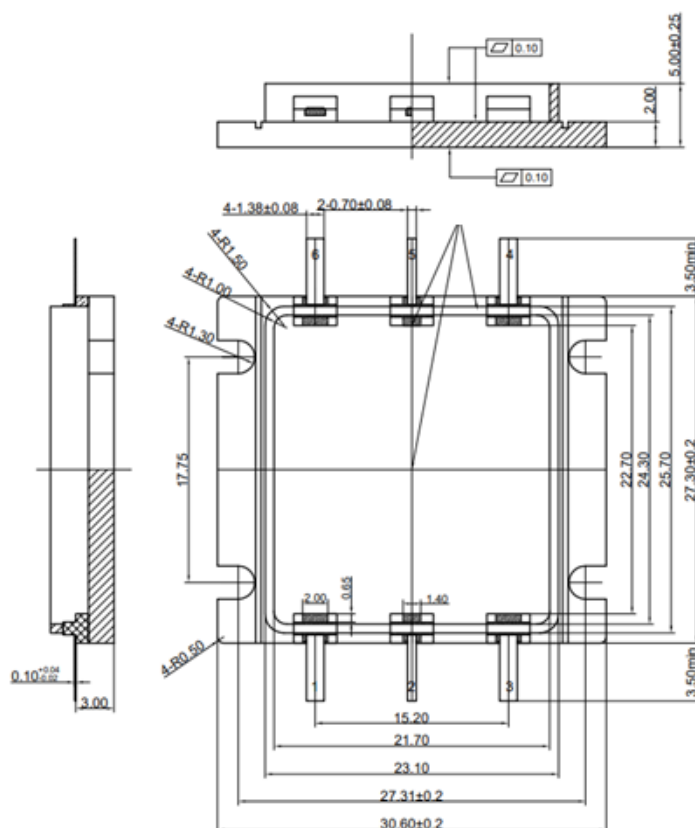




GMAH1060-50H3_rev0 CW Test
V_{gs}=-2.57V V_{ds}=28V I_{dq}=200mA



Package Dimensions (Unit:mm)



Revision history

Table 6. Document revision history

Date	Revision	Datasheet Status
2025/4/8	Rev 1.0	Advanced Datasheet

Application data based on JF-25-08

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