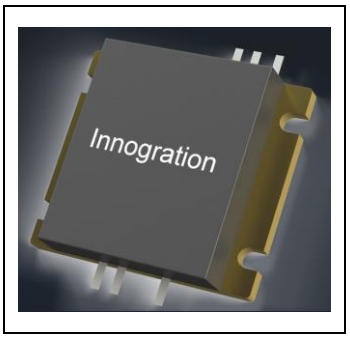
0.4-0.7GHz, 70W, 2 stages GaN Fully matched PA



Description

The S2MAH0407-70H3P is a 70-watt Psat capable，2 stage integrated IMFET, designed for broad band applications, with frequencies from 0.4 to 0.7GHz. The module is 50 Ω input/output matched and requires minimal external components，with DC block capacitor integrated inside 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.

V_{DS}= 28V, V_{gs1}= -3.2V, I_{dq1}=200mA, V_{gs2}= -2.6V, I_{dq2}=10mA ,Device screwed down

Freq (MHz)	P1(dBm)	P1 Gain (dB)	P3dB (dBm)	P3dB (W)	EFF (%)
400	47.29	33.8	48.14	65.2	51.7
450	48.00	34.1	48.61	72.7	50.7
500	47.79	33.2	48.59	72.3	47.5
550	48.26	33.1	49.22	83.5	49.9
600	48.94	34.3	49.83	96.2	57.1
650	47.44	34.8	48.34	68.2	52.1
700	48.20	33.7	49.42	87.6	68.5

Applications

- P band power amplifier
- UHF power amplifier

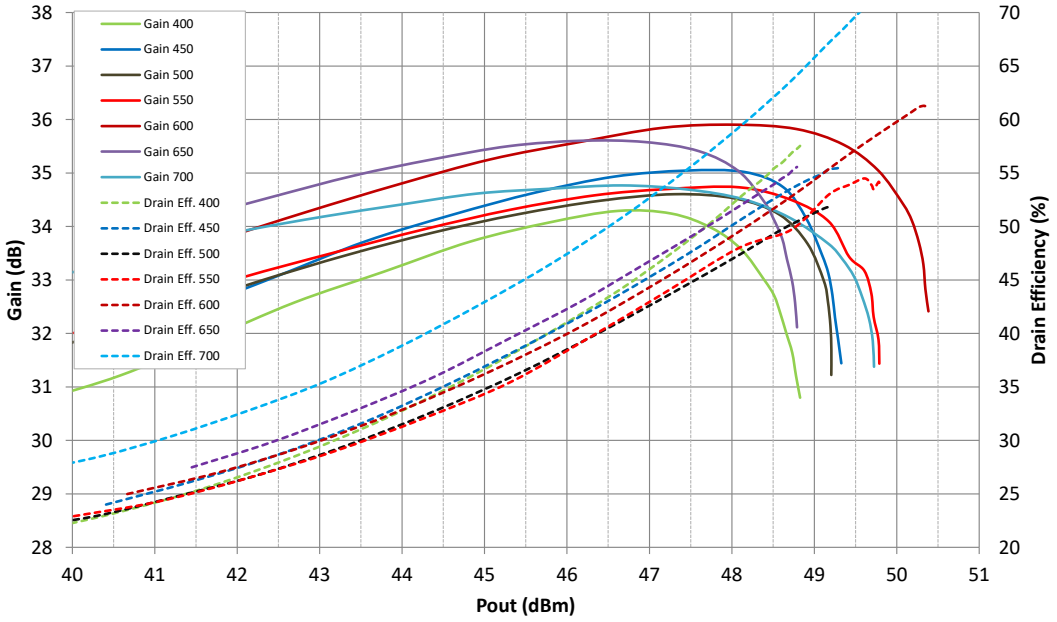
Table 1. Maximum Ratings

Rating	Symbol	Value	Unit
Drain--Source Voltage	V_{DSS}	150	Vdc
Gate--Source Voltage	V_{GS}	-10 to +2	Vdc
Operating Voltage	V_{DD}	+36	Vdc
Storage Temperature Range	Tstg	-65 to +150	°C
Case Operating Temperature	T_C	+150	°C
Operating Junction Temperature	T_J	+225	°C

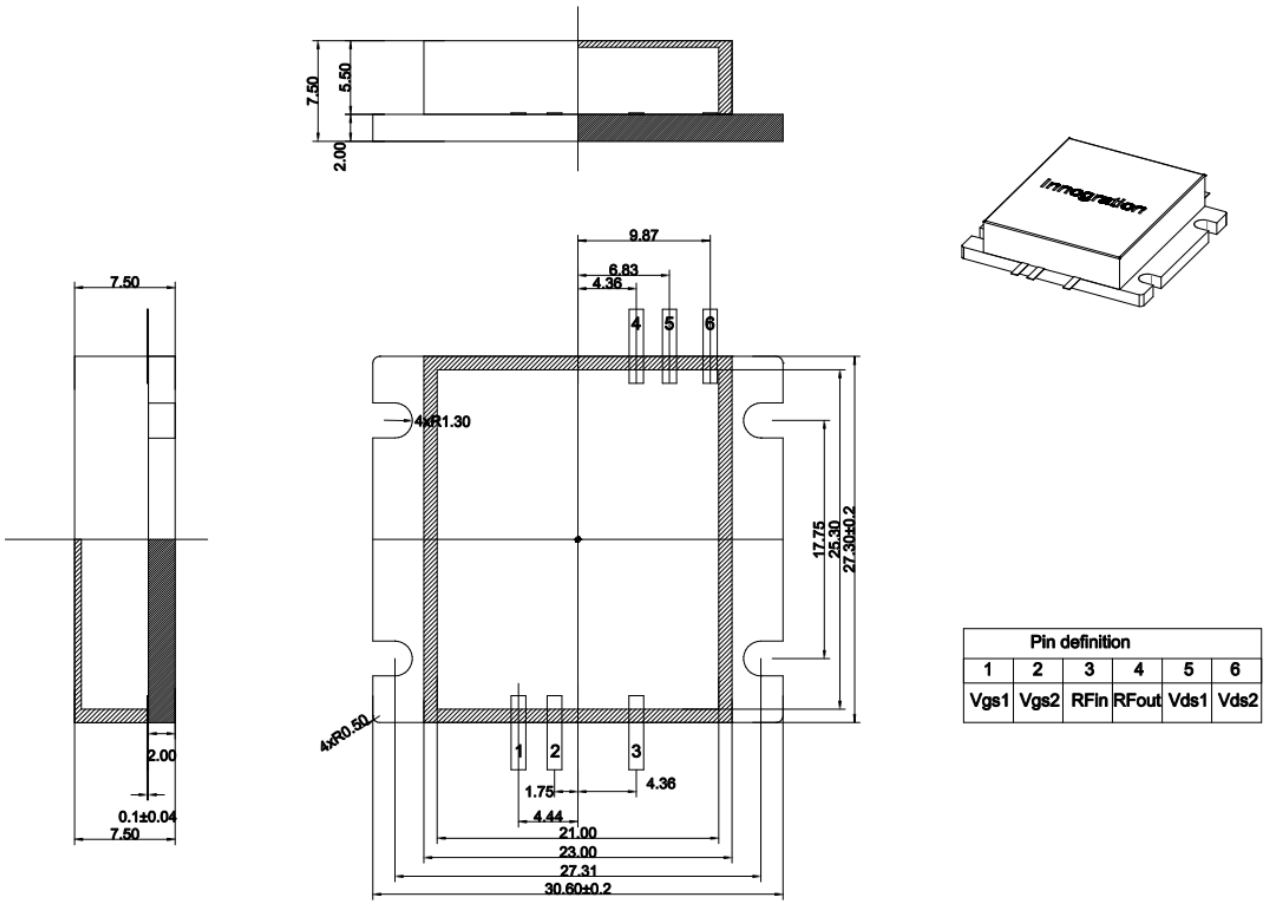
TYPICAL CHARACTERISTICS

Figure 1. Network analyzer output S11/S21 (Pin=0dBm, Idq=200mA)

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



Package Dimensions （Unit:mm）



Pin definition					
1	2	3	4	5	6
Vgs1	Vgs2	RFin	RFout	Vds1	Vds2

Revision history

Table 6. Document revision history

Date	Revision	Datasheet Status
2025/6/20	Rev 1.0	Advanced Datasheet

Application data based on HJ-25-07

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