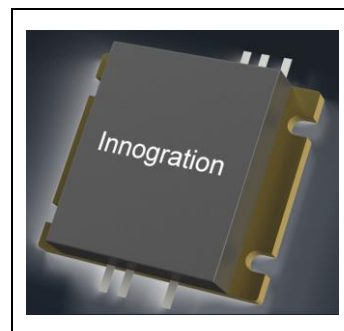




## 1.1-1.6GHz, 70W, 2 stages GaN Fully matched PA

### Description

The S2MAH1116-70H3P is a 70-watt Psat capable, 2 stage integrated IMFET, designed for broad band applications, with frequencies from 1.1 to 1.6GHz. The module is 50  $\Omega$  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.



$V_{DS}= 28V$ ,  $V_{gs1}= -3.24V$ ,  $I_{dq1}=200mA$ ,  $V_{gs2}= -2.63V$ ,  $I_{dq2}=10mA$

Freq (MHz)	P1(dBm)	P1 Gain (dB )	P3dB (dBm)	P3dB (W)	EFF (%)
1100	47.3	29.7	48.08	64.2	52
1200	48.43	32.5	48.85	76.7	57
1300	47.41	31.9	48.56	71.8	52
1400	47.48	30.6	48.73	74.7	53
1500	47.29	30.3	48.66	73.5	55
1600	47.10	31.2	48.27	67.1	55

### Applications

- L band power amplifier
- GPS/Beidou 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	$T_{stg}$	-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)

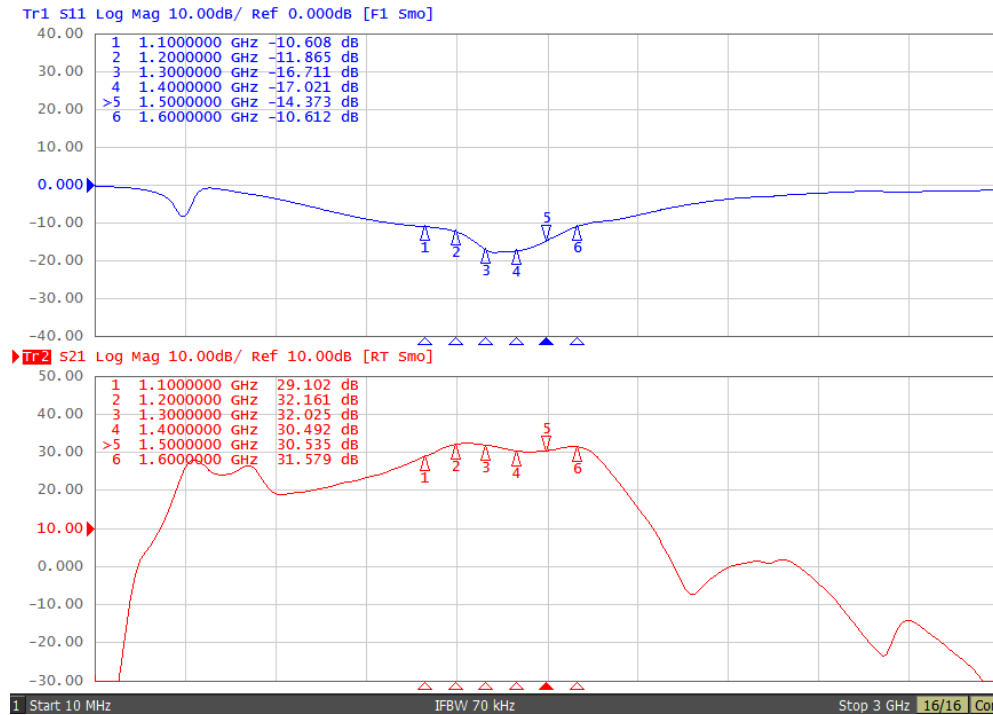
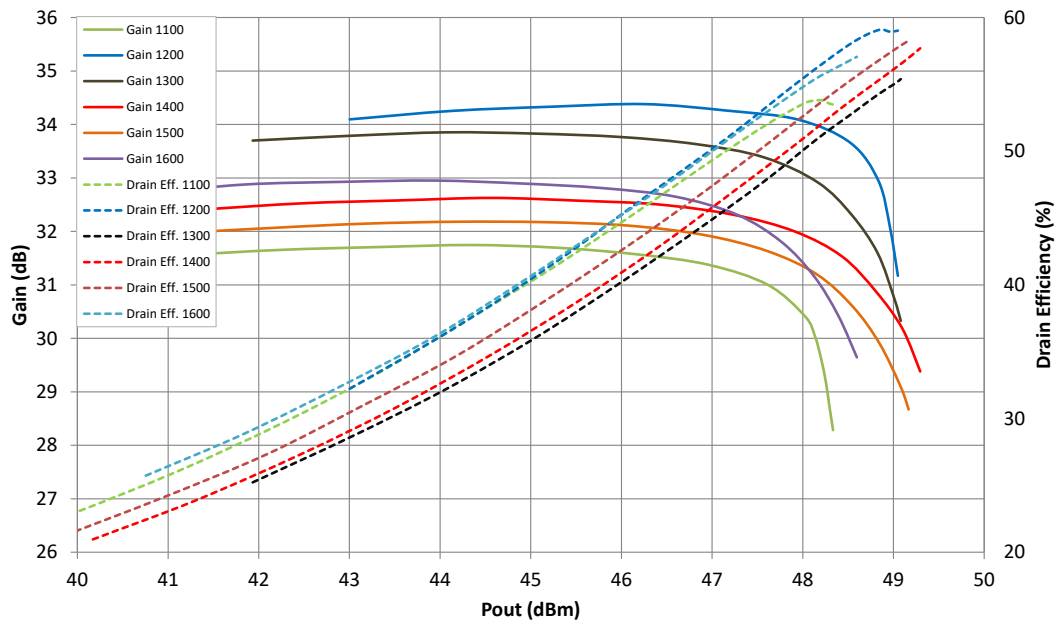
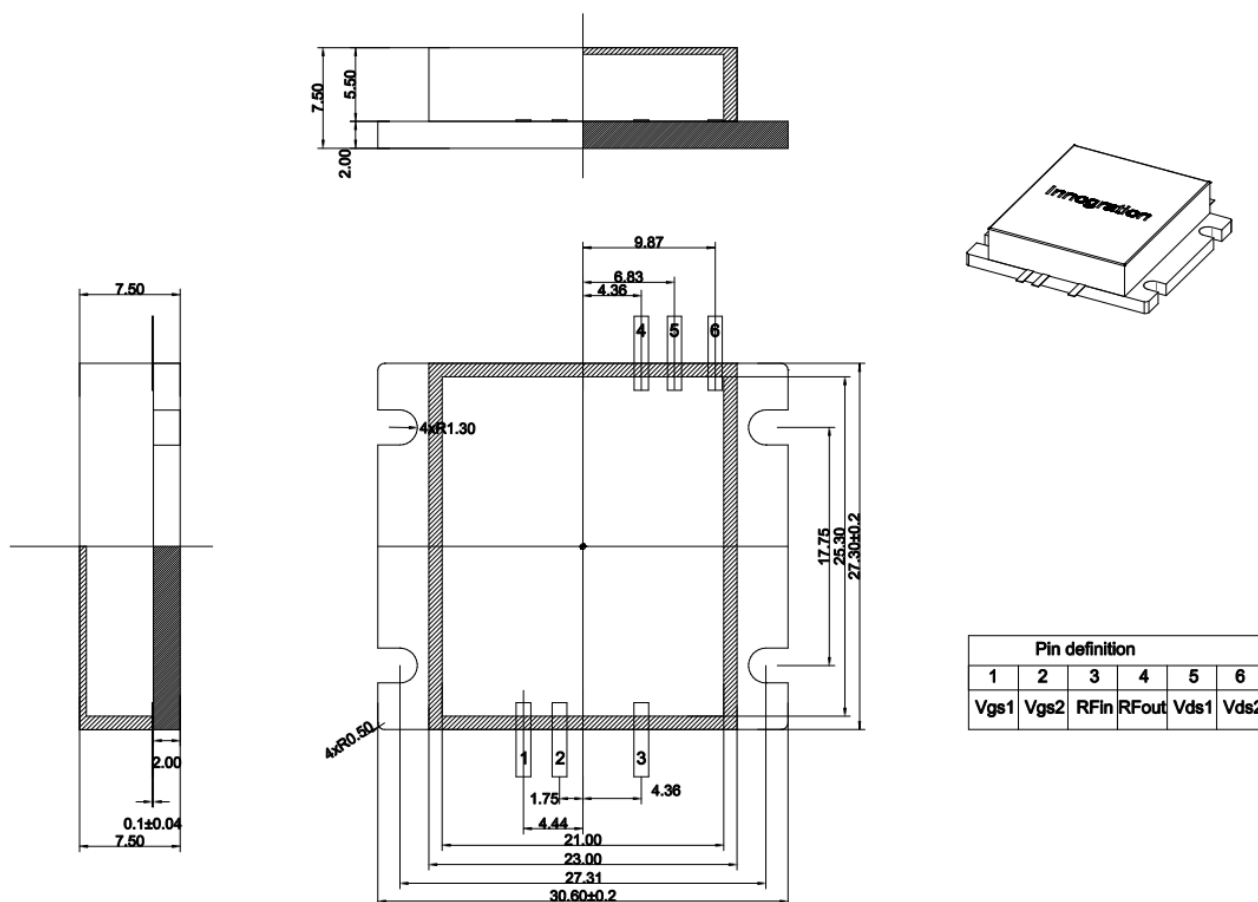


Figure 3. Pout, Eff, Gain, drain current Vs Frequency @28V





## Package Dimensions (Unit:mm)



## Revision history

Table 6. Document revision history

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

Application data based on HJ-25-05

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