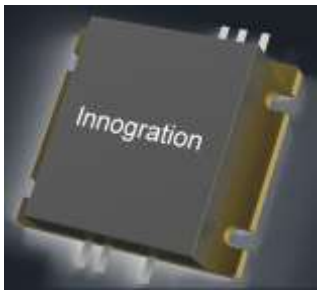
0.9-1.5GHz, 50W, 2 stages GaN Fully matched PA



Description

The S2MBH0915-50H3P is a 50-watt Psat capable，2 stage integrated IMFET, designed for broad band applications, with frequencies from 0.9 to 1.5GHz. 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 70W 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.

VDS= 28V, Vgs1= -2.76V, Idq1=200mA, Vgs2= -2.57V, Idq2=20mA							
Freq(MHz)	P1dB(dBm)	P1dB(W)	P1dB Eff(%)	P1dB Gain(dB)	P3dB(dBm)	P3dB(W)	P3dB Eff(%)
900	47.69	58.7	49.2	29.9	48.48	70.5	52.1
1000	48.20	66.0	53.0	30.9	49.37	86.6	58.9
1100	47.25	53.1	46.5	30.8	48.65	73.3	52.3
1200	47.82	60.5	49.4	30.1	49.22	83.6	55.2
1300	47.77	59.8	52.1	29.8	48.84	76.6	55.1
1400	47.59	57.4	52.7	29.5	48.89	77.4	56.3
1500	46.62	46.0	50.3	29.2	48.33	68.0	57.3

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	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=220mA)

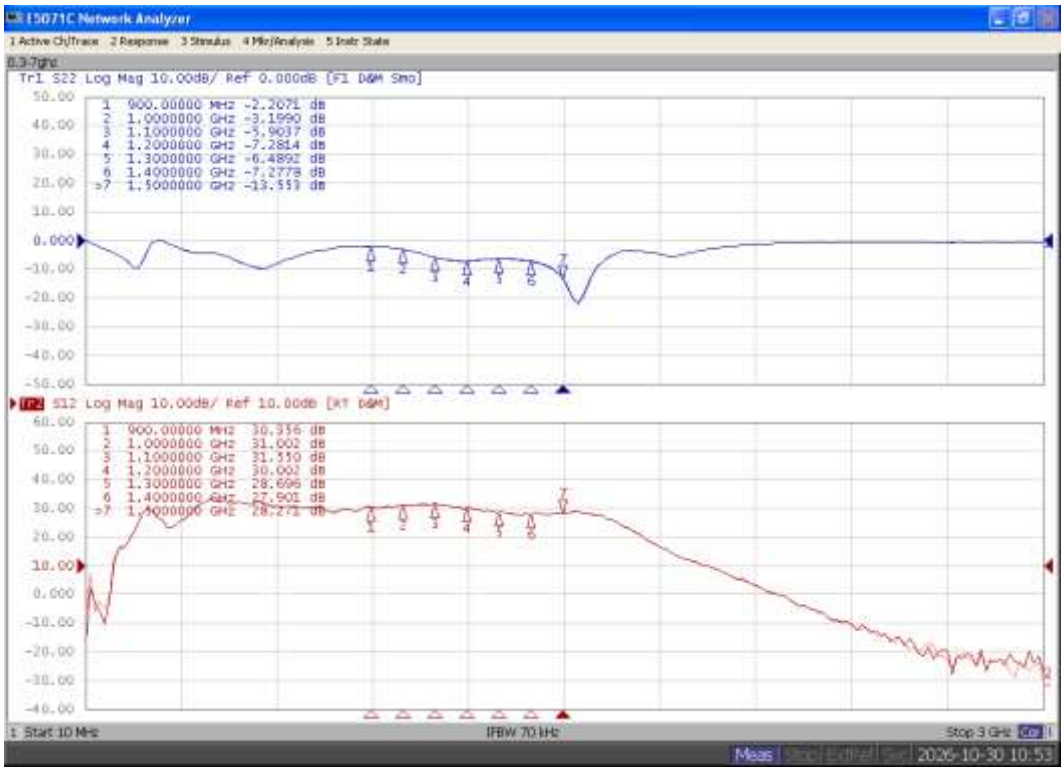
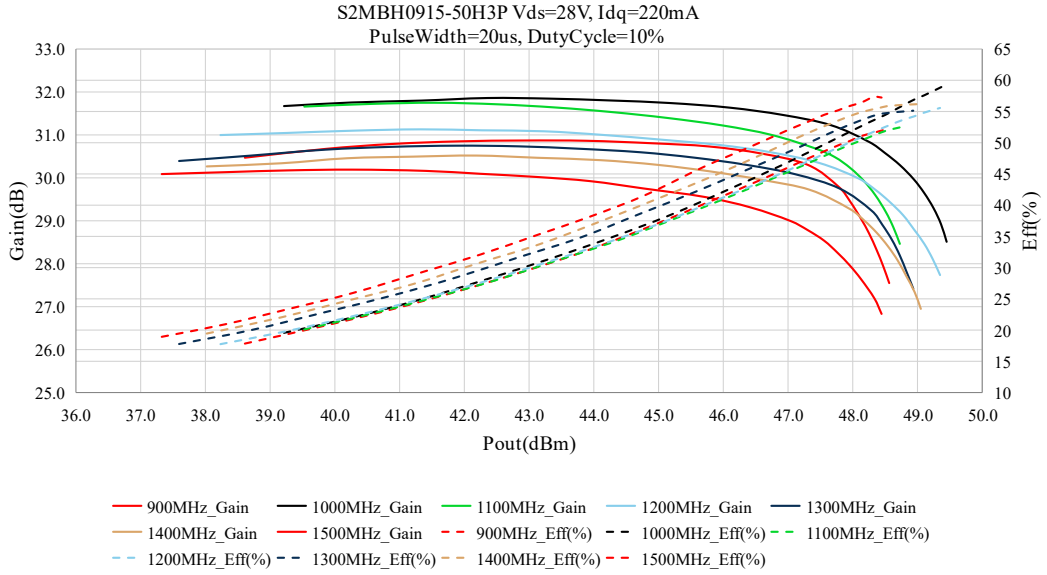
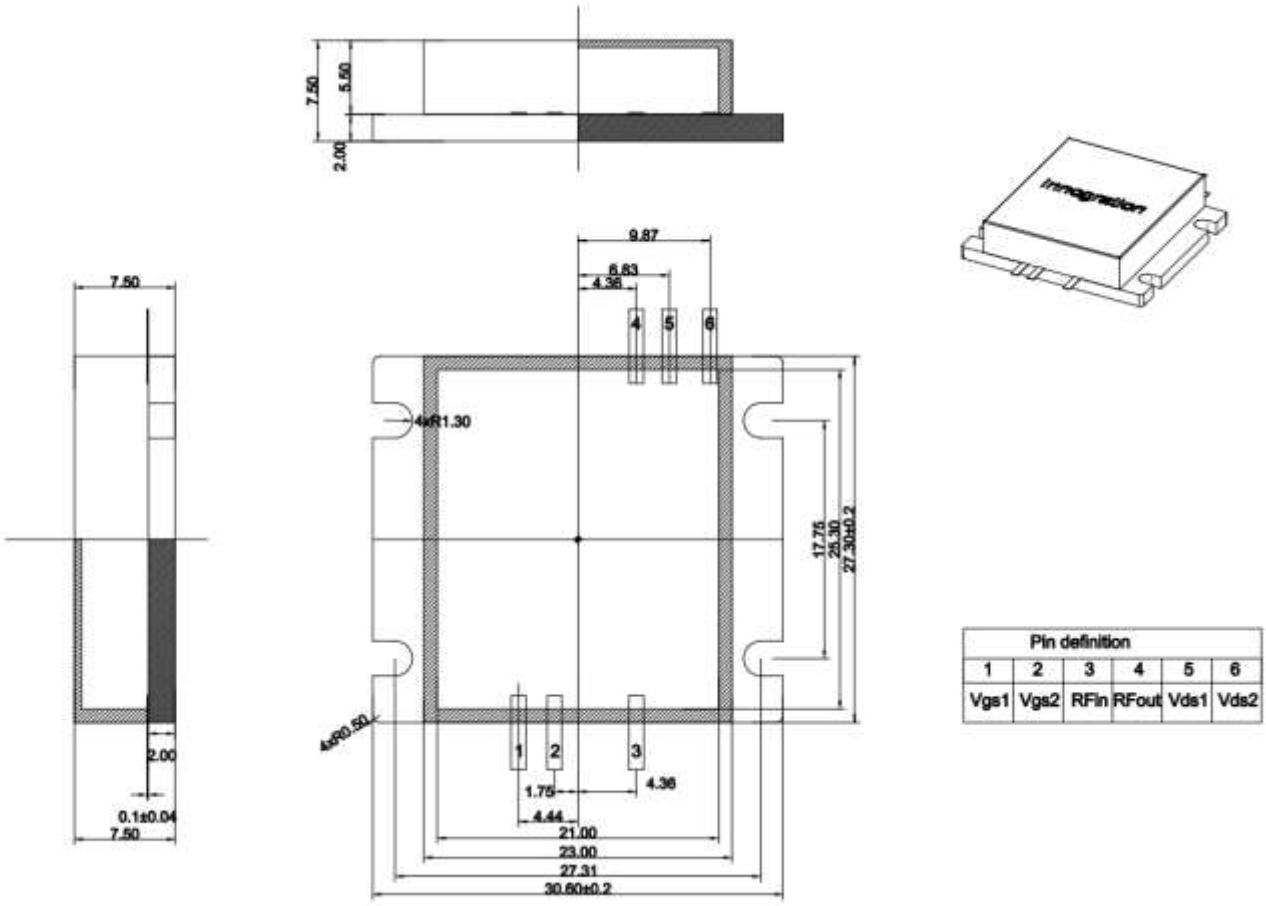


Figure 3. Pout, Eff, Gain，drain current Vs Frequency @28V under pulsed CW condition 10%,100us



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
2025/11/10	Rev 1.0	Advanced Datasheet （GTAH35012PD +STCH15076G2）

Application data based on HJ-25-16

Disclaimers

Specifications are subject to change without notice. Innogration believes the information contained within this data sheet to be accurate and reliable. However, no responsibility is assumed by Innogration for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Innogration . Innogration makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose.“Typical” parameters are the average values expected by Innogration in large quantities and are provided for information purposes only. These values can and do vary in different applications and actual performance can vary over time. All operating parameters should be validated by customer’s technical experts for each application. Innogration products are not designed, intended or authorized for use as components in applications intended for surgical implant into the body or to support or sustain life, in applications in which the failure of the Innogration product could result in personal injury or death or in applications for planning, construction, maintenance or direct operation of a nuclear facility. For any concerns or questions related to terms or conditions, pls check with Innogration and authorized distributors

Copyright © by Innogration (Suzhou) Co.,Ltd.