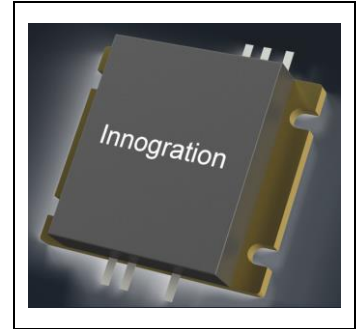




1.3-1.8GHz, 80W, 2 stages GaN Fully matched PA

Description

The X2MAH1318-80H3P is a 80-watt Psat capable, 2 stage integrated IMFET, designed for broad band applications, with frequencies from 1.3 to 1.8GHz. 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 100W 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} = -2.79V, I _{dq1} =200mA, V _{gs2} = -2.48V, I _{dq2} =20mA						
Freq (MHz)	P1(dBm)	P1 Gain (dB)	P3dB(dBm)	P3dB(W)	Eff (%)	2 nd (dBc)
1300	47.55	30.8	49.63	91.8	50.0	-22.4
1400	48.16	30.2	49.84	96.4	50.0	-20.6
1500	47.79	30.4	49.76	94.7	48.9	-35.2
1600	48.78	31.2	50.44	110.7	55.5	-36.8
1700	47.62	30.8	49.68	92.8	50.3	-47.4
1800	46.79	29.7	49.40	87.1	51.3	-51.4

Linearity tuning:

V _{DS} = 28V, V _{gs1} = -2.69V, I _{dq1} =530mA, V _{gs2} = -2.39V, I _{dq2} =70mA				
P _{out} =40dBm				
Freq (MHz)	P _{peak} (dBm)	ACPR (dBc)	Gain(dB)	EFF (%)
1340	49.11	-38.47	32.5	20.6
1440	49.40	-38.08	31.8	19.8
1540	49.03	-39.76	32.7	20.2
1640	49.26	-38.11	32.8	20.3

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	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)

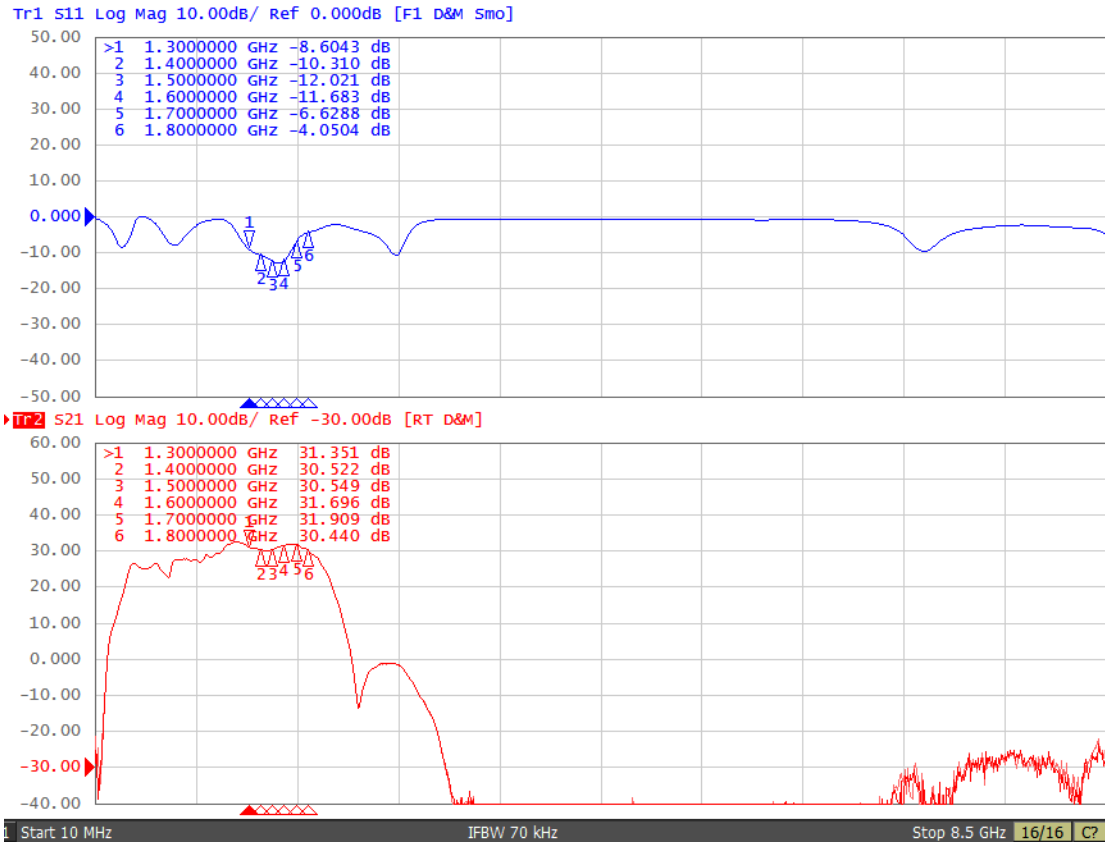
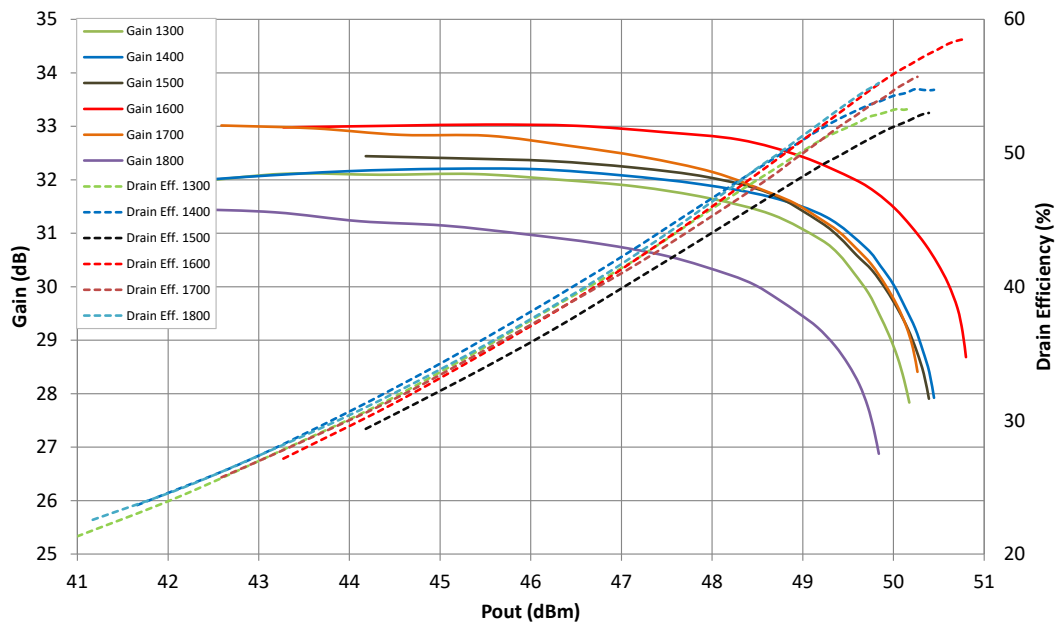
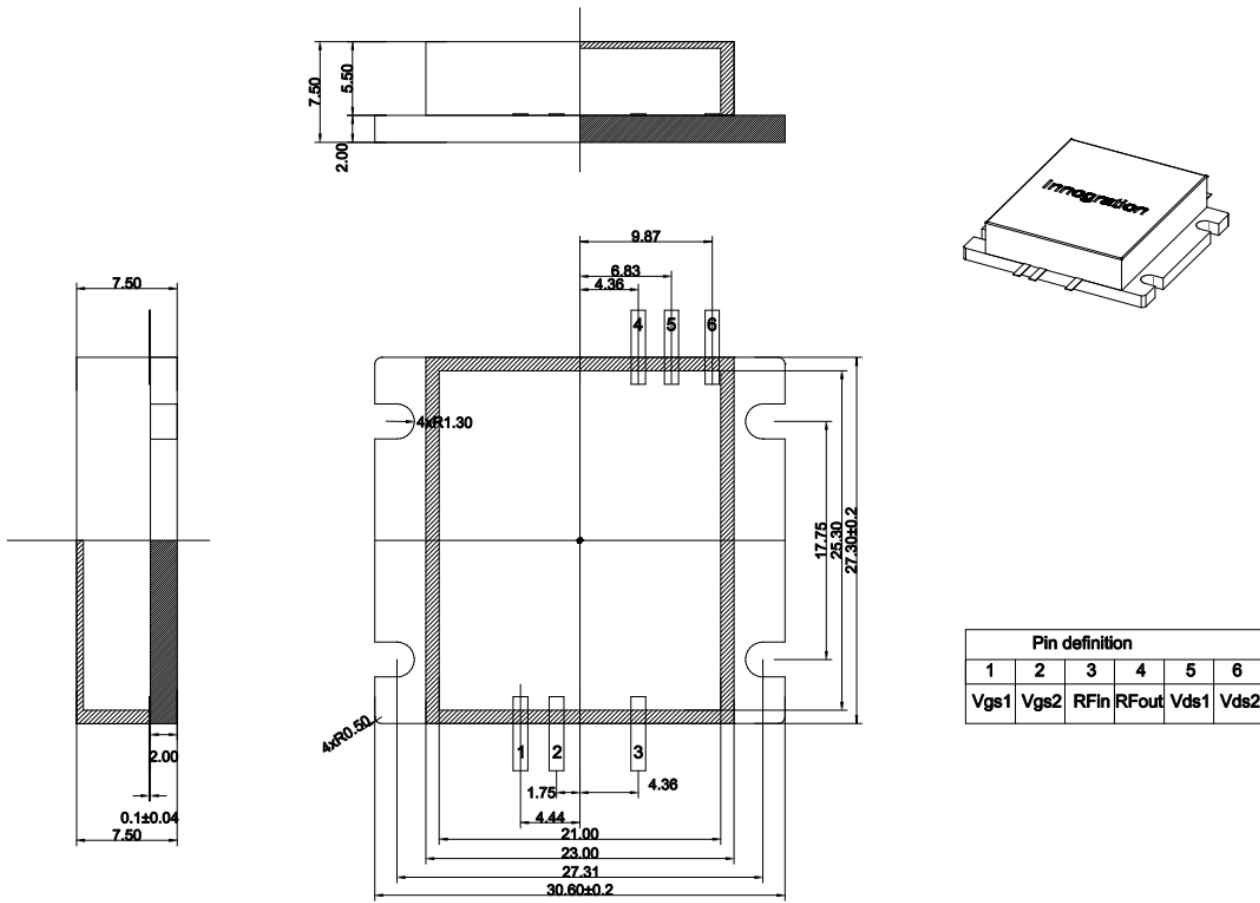


Figure 3. Pout, Eff, Gain, drain current Vs Frequency @28V under pulsed CW condition 10%,100us





Package Dimensions (Unit:mm)



Revision history

Table 6. Document revision history

Date	Revision	Datasheet Status
2025/11/10	Rev 1.0	Advanced Datasheet (XTAH80010PD+XU6012HS)

Application data based on HJ-25-16

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