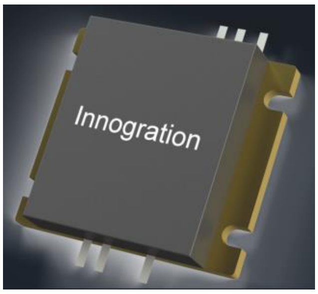
0.8-1GHz, 100W, 2 stages GaN Fully matched PA



Description

The G2MAH0810-100H3P is a 100-watt Psat capable，2 stage integrated IMFET, designed for broad band applications, with frequencies from 0.8 to 1GHz. The module is 50 Ω input/output matched and requires minimal external components，with DC block capacitor integrated inside 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}= -2.76V, I_{dq1}=200mA, V_{gs2}= -2.57V, I_{dq2}=20mA， CW

Freq (MHz)	P1dB (dBm)	P1dB (W)	P1dB Eff(%)	P1dB Gain(dB)	P3dB (dBm)	P3dB (W)	P3dB Eff(%)
800	49.58	90.8	46.9	30.87	50.65	116.1	51.6
850	49.89	97.6	50.5	30.77	51.08	128.3	56.1
900	49.89	97.4	54.4	30.89	51	125.9	59.7
950	49.97	99.3	59.0	30.25	51.24	133.2	65.9
1000	49.22	83.5	58.6	29.62	50.66	116.5	66.5

Applications

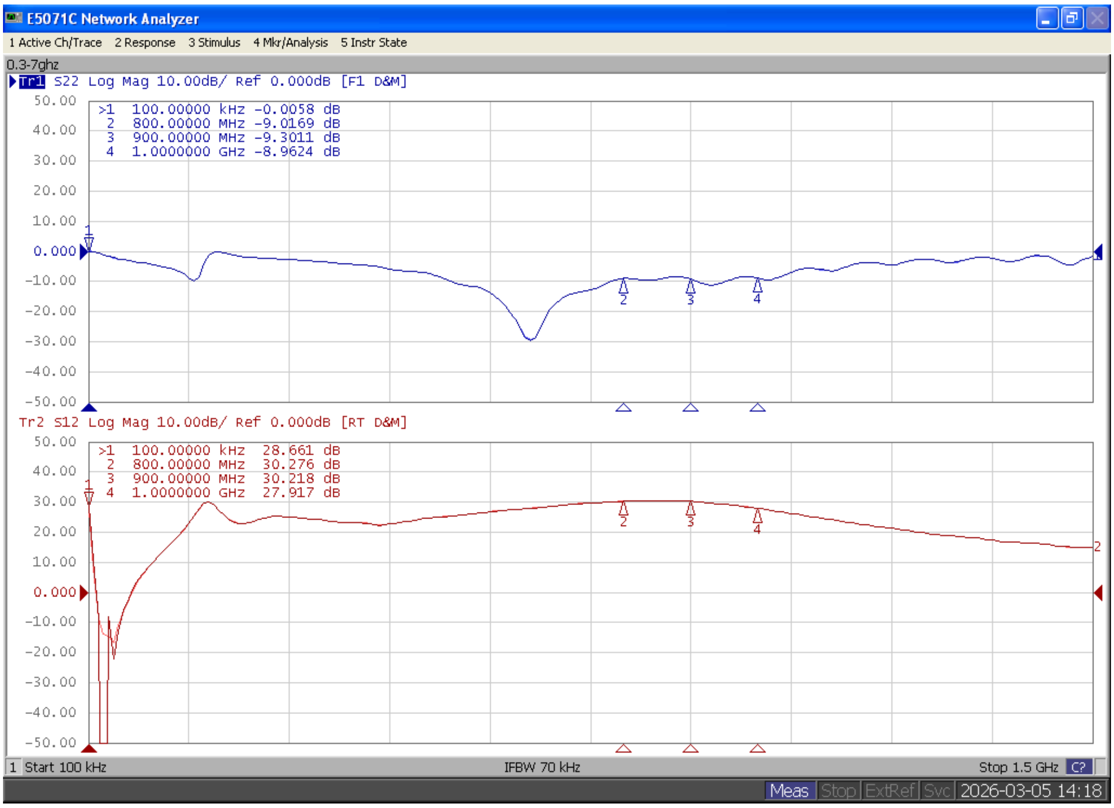
- P band power amplifier
- ISM power amplifier

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)



```
Tr1 S22 Log Mag 10.00dB/ Ref 0.000dB [F1 D&M]
 >1  100.00000 kHz -0.0058 dB
  2  800.00000 MHz -9.0169 dB
  3  900.00000 MHz -9.3011 dB
  4  1.0000000 GHz -8.9624 dB
Tr2 S12 Log Mag 10.00dB/ Ref 0.000dB [RT D&M]
 >1  100.00000 kHz  28.661 dB
  2  800.00000 MHz  30.276 dB
  3  900.00000 MHz  30.218 dB
  4  1.0000000 GHz  27.917 dB
1  Start 100 kHz          IFBW 70 kHz          Stop 1.5 GHz
2026-03-05 14:18
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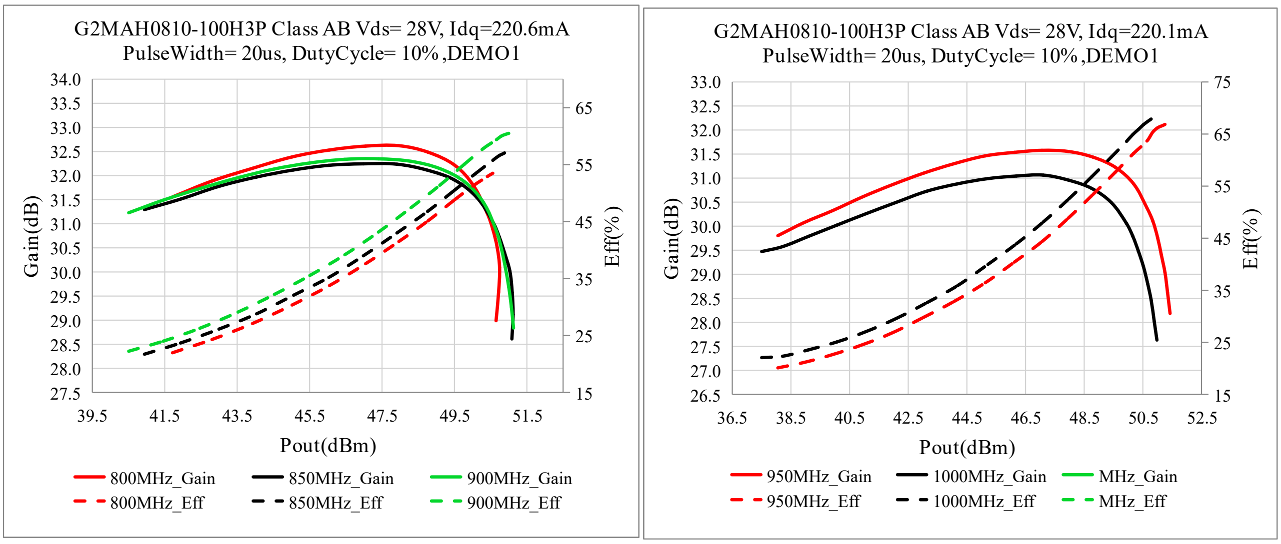
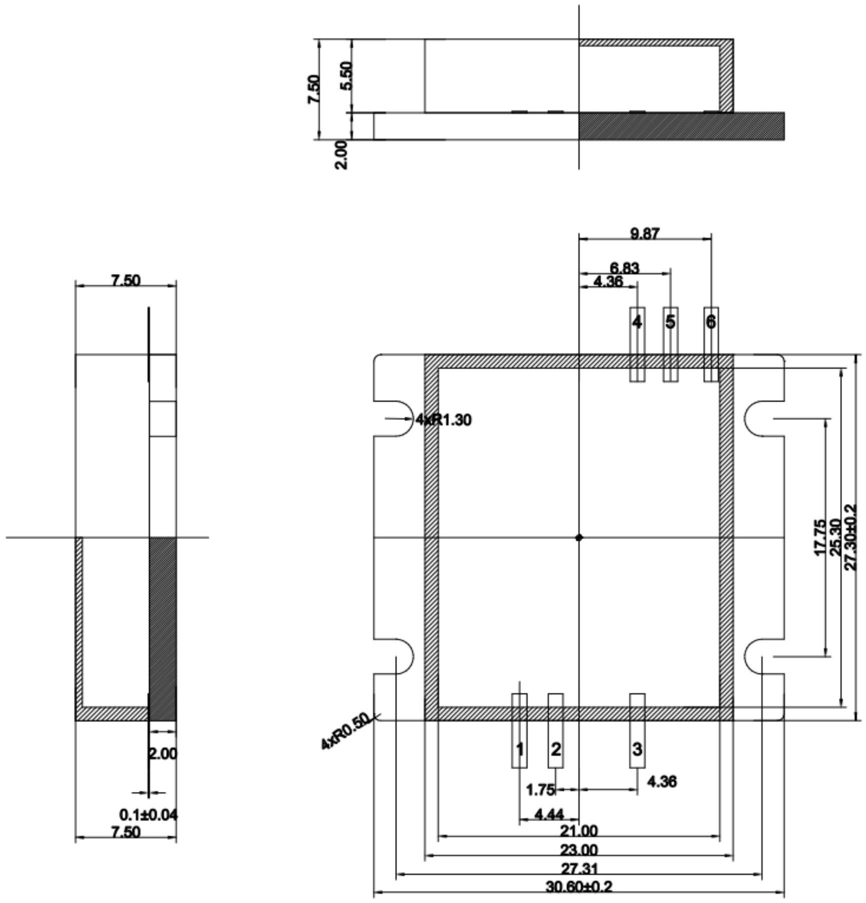
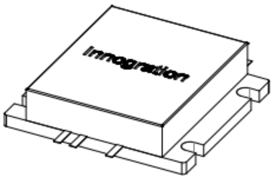
Figure 3. Pout, Eff, Gain，drain current Vs Frequency @28V under pulsed CW condition 10%,100us



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
2026/3/5	Rev 1.0	Advanced Datasheet （XTAH80010PD+NU3013HS）

Application data based on LBG-26-09

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