

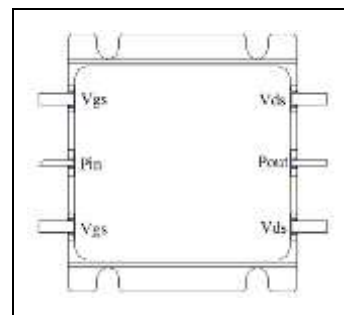


1.5-2.2GHz, 190W, GaN Fully matched PA Module

Description

The XMAH1522-190H3 is a 28V 190-watt, single stage integrated Power Amplifier Module, designed for broad band applications, with frequencies from 1.5 to 2.2GHz. **When operating at higher voltage like 32V, it can deliver >220W across the full band**

The module is 50 Ω input/output matched and requires minimal external components. 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, Idq=360mA, CW**

Freq(MHz)	Pin(dBm)	Psat(dBm)	Pout(W)	IDS(A)	Gain(dB)	Eff(%)
1500	41.60	53.20	208.9	14.12	11.60	52.8
1600	41.50	53.01	200.0	12.89	11.51	55.4
1700	41.35	53.24	210.9	12.55	11.89	60.0
1800	40.70	53.02	200.4	12.40	12.32	57.7
1900	40.30	52.91	195.4	12.81	12.61	54.5
2000	40.50	53.18	208.0	13.24	12.68	56.1
2100	40.75	52.98	198.6	12.89	12.23	55.0
2200	41.40	53.04	201.4	13.29	11.64	54.1

Product Features

- Operating Frequency Range: 1.5-2.2GHz
- Operating Drain Voltage(Recommended): +28 V
- 50 Ω Input/Output (External DC block capacitor needed)
- Psat $\geq$ 190W (CW)
- Small signal gain: >15dB, Power gain: >11.5dB
- Efficiency: 55% (Typical)
- 30.8*27.4 mm metal RF package

Applications

- L band power amplifier

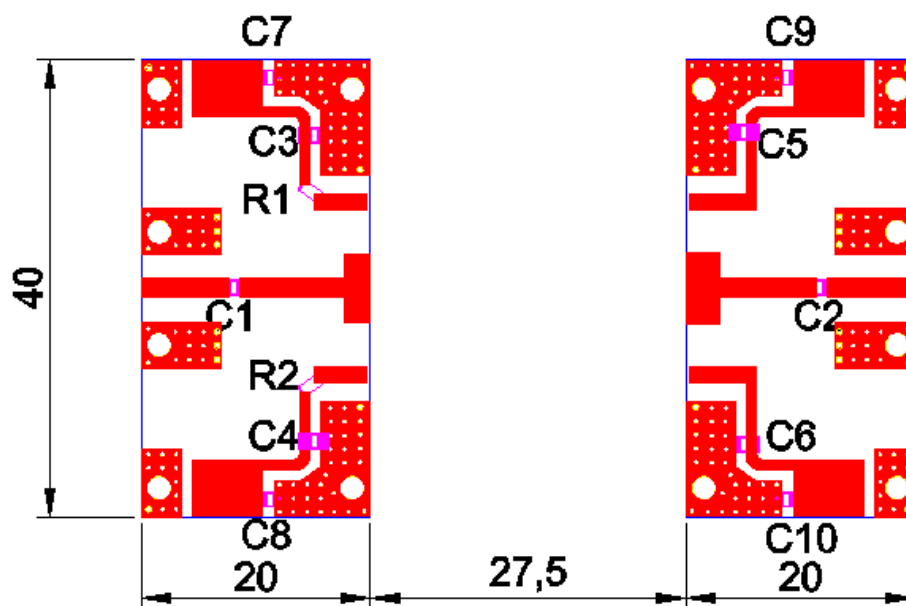
Table 1. Maximum Ratings

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

Table 2. Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Case T _c = 25°C, Pout=120W, FEA	R _{θJC}	0.75	°C/W

Typical application circuit



Component	Description	Suggested Manufacturer / Series Number
C1 C3 C4 C5 C6	6.8 pF	MQ200805
C2	6.8 pF x 2	MQ200805
C3 C4 C5 C6	6.8 pF	MQ401111
C7 C8 C9 C10	10 uF	TDK
R1	10 Ohm	Open suppliers. 1206 SMD Resistor
PCB	30Mil Rogers 4350	Rogers

TYPICAL CHARACTERISTICS

Figure 1. Network analyzer output S11/S21 (Pin=0dBm)

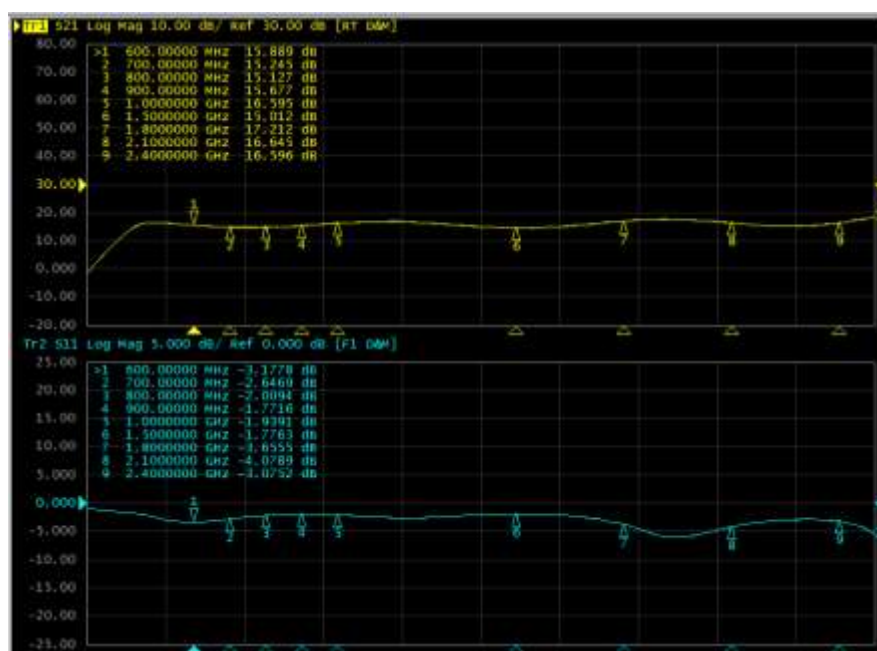
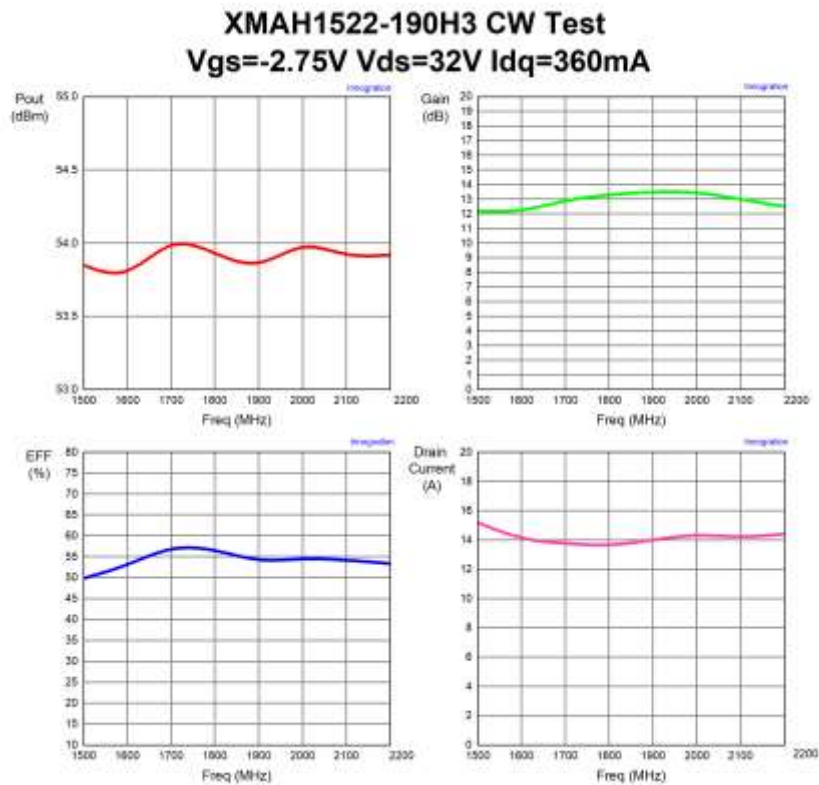
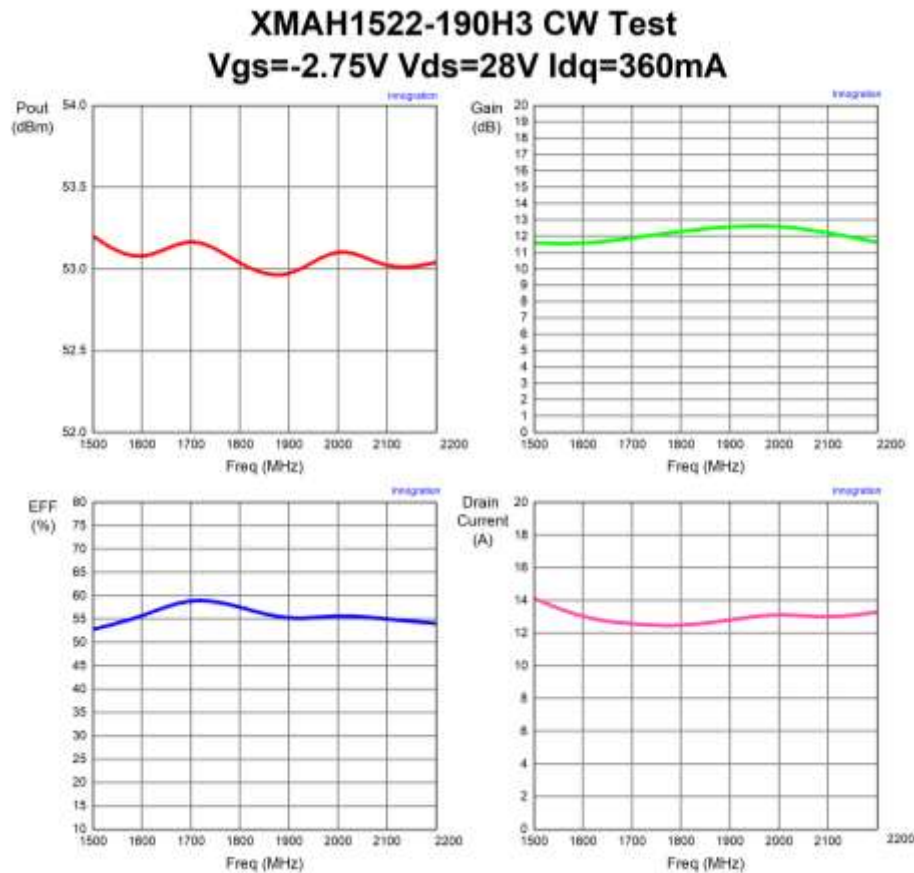


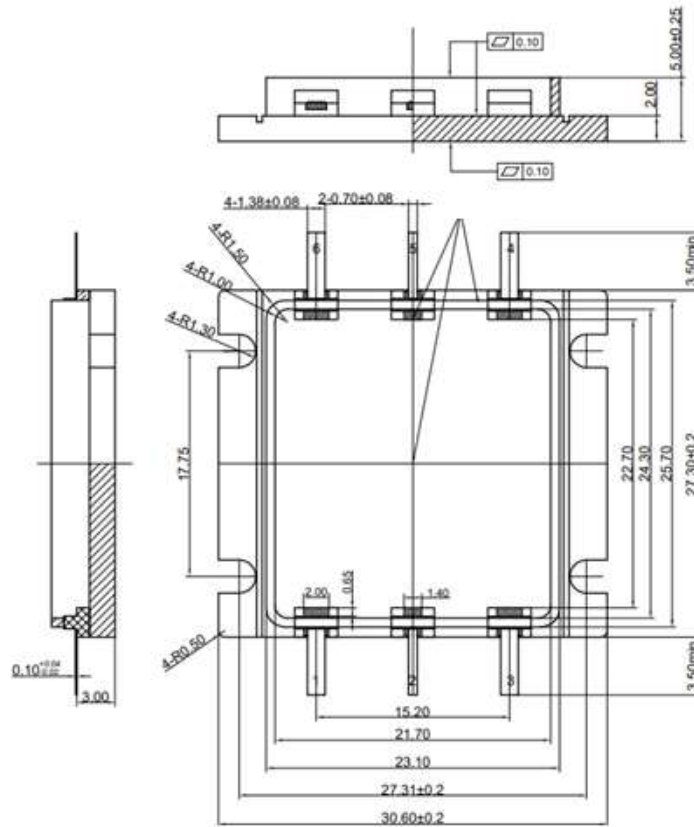


Figure 3. Pout, Eff and Power Gain, Ids Vs Frequency across the band at 28V/32V





Package Dimensions (Unit:mm)



Revision history

Table 6. Document revision history

Date	Revision	Datasheet Status
2026/10/1	Rev 1.0	Preliminary datasheet

Application data based on JF-26-28

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