

GTAH30140BY4 Class AB 300~3200MHz

Aug 4, 2026

Introduction

This amplifier is designed with Innogrations 28V GaN transistor.

Demo and Transistor

Frequency band :	300~3200MHz
Application :	Multi Market
Configuration :	Class AB
Test Signal :	CW
Transistor :	GTAH30140BY4
Date code :	244906
PCB :	Rogers4350B ,20mils

The amplifier has been characterized under the following conditions:

- Network Analyzer plots for gain and IRL.
- The output power measurement using CW

Note: The PA is tested with a supply voltage of $V_{ds} = 28V$, $V_{gs} = -2.52V$,

$I_{dq} = 400mA$ all measurements unless otherwise noted.

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Test Results

1. Summary @ Bench (Chengdu)

(1) Test Condition

 $V_{gs} = -2.52V$, $V_{ds} = 28V$, $I_{dq} = 400mA$ Signal mode : CW, Frequency :300-3200MHz

Freq (MHz)	Pin (dBm)	Pout (dBm)	Pout (W)	IDS (A)	Gain (dB)	Eff (%)	2 nd	3 rd
300	35.2	48.70	74	5.21	13.5	50.8	-10.50	-10.50
400	36.8	49.55	90	5.11	12.8	63.0	-16.60	-11.00
500	38.0	49.48	89	4.80	11.5	66.0	-14.00	-13.00
600	36.3	49.07	81	5.43	12.8	53.1	-7.70	-11.80
700	39.2	49.01	80	6.95	9.8	40.9	-7.70	-10.00
800	39.1	49.64	92	9.05	10.5	36.3	-8.20	-13.30
900	39.4	50.36	109	9.50	11.0	40.8	-10.20	-18.30
1000	39.0	51.42	139	9.26	12.4	53.5	-13.50	-15.50
1100	39.4	50.41	110	5.90	11.0	66.5	-17.00	-15.50
1200	39.2	49.60	91	5.27	10.4	61.8	-21.80	-22.80
1300	39.9	49.69	93	6.63	9.8	50.2	-12.00	-19.80
1400	39.5	50.09	102	7.42	10.6	49.1	-11.60	-25.00
1500	39.4	51.01	126	9.08	11.7	49.6	-12.50	-25.40
1600	39.2	50.80	120	8.86	11.7	48.5	-14.20	-21.10
1700	39.1	50.03	101	8.04	10.9	44.7	-15.50	-26.70
1800	39.3	50.06	101	8.28	10.8	43.7	-21.70	-31.60
1900	39.1	50.56	114	8.23	11.5	49.4	-24.60	-38.50
2000	39.4	50.54	113	7.82	11.1	51.7	-26.30	-37.60
2100	38.8	49.51	89	6.77	10.7	47.1	/	/
2200	38.8	49.40	87	7.13	10.6	43.6	/	/
2300	38.9	49.15	82	7.51	10.3	39.1	/	/
2400	39.3	49.40	87	8.12	10.1	38.3	/	/
2500	39.1	49.30	85	8.08	10.2	37.6	/	/
2600	39.8	50.40	110	9.93	10.6	39.4	/	/
2700	40.1	50.50	112	10.10	10.5	39.7	/	/
2800	39.5	50.92	124	10.42	11.5	42.4	/	/
2900	38.4	50.00	100	8.64	11.6	41.3	/	/
3000	38.9	49.30	85	7.50	10.4	40.5	/	/
3100	39.8	49.30	85	7.28	9.5	41.8	/	/
3200	41.0	49.50	89	7.20	8.5	44.2	/	/

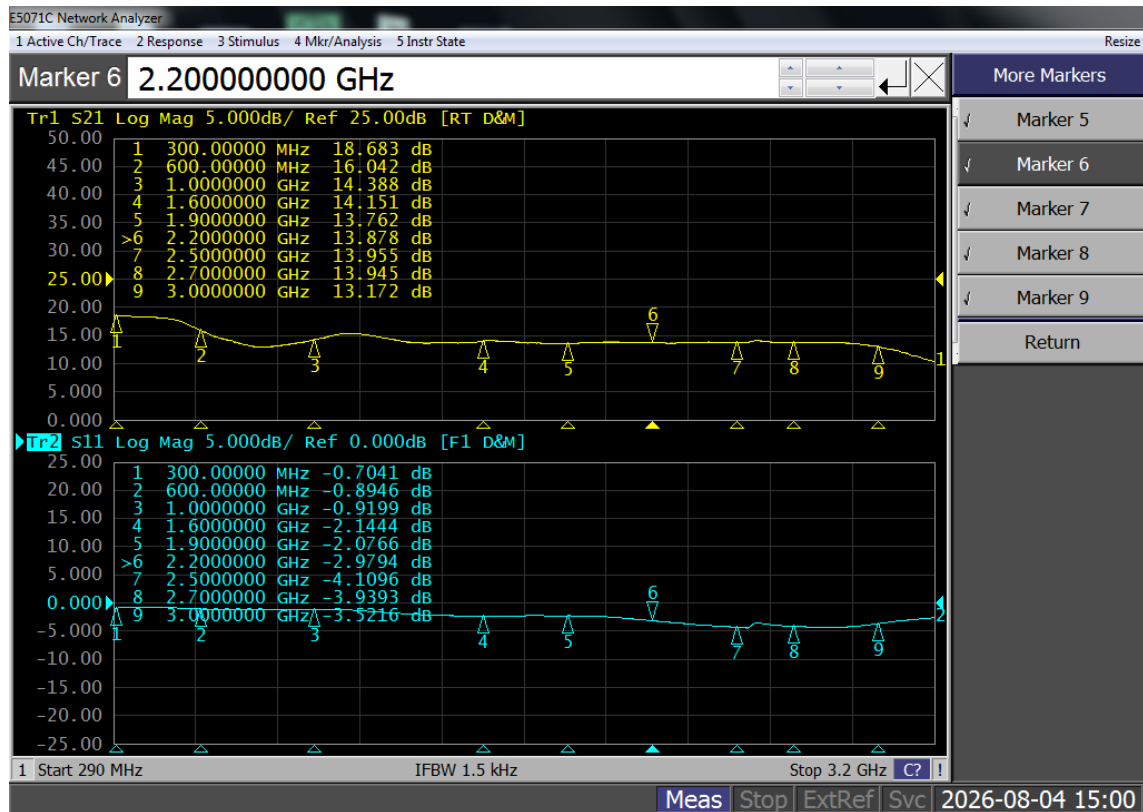
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2. Network Results

Test Condition

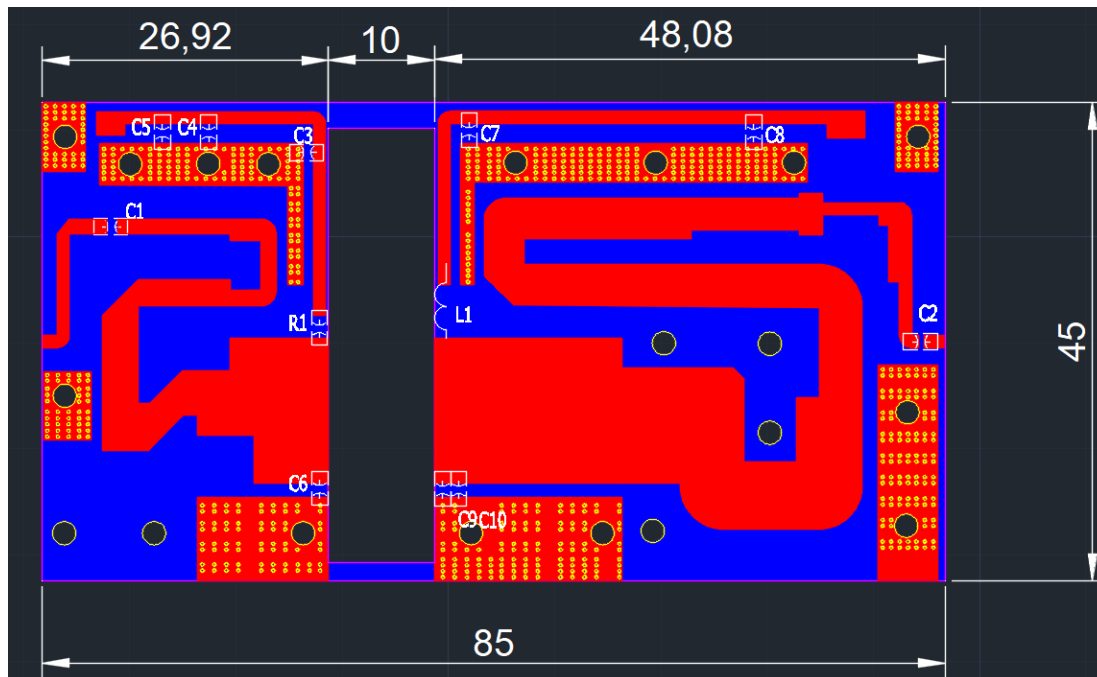
$V_{gs} = -2.49V$, $V_{ds} = 28V$, $I_{dq} = 500mA$

input power = -10 dBm



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BOM of Test Circuit



Component	Description	Suggested Manufacturer
C1,C3	20pF(MQ301111)	
C5	1uF (0805)	
C8	10uF (1210)	
C2	43pF(MQ300805)	
C4	68pF(MQ301111)	
C7	47pF(MQ301111)	
C6,C10	0.8pF(MQ300805)	
C9	1.0pF(MQ300805)	
L1	1mm, 3 turns, diameter :5mm	//
R1	Chip Resistor,51Ω (0805)	-//
PCB	Rogers4350B, 20mils	//