

RXT-25-44**XR5803HS**

XR5803HS Class AB 300~6000MHz

Dec. 23, 2025

Introduction

This amplifier is designed with Innegration 28V GaN transistor.

Demo and Transistor

Frequencyband	: 300~6000MHz
Application	: Multi Market
Configuration	: Class AB
Test Signal	: CW
Transistor	: XR5803HS
Date code	: 254815
PCB	: Rogers 4350B, 30mil

The amplifier has been characterized under the following conditions:

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

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Test Results

1. Summary @ Bench1(Chengdu)

$$V_{ds} = 32 \text{ V}, V_{gs} = -2.53 \text{ V}, I_{dq} = 200 \text{ mA}$$

Signal mode: CW

Freq(MHz)	Pin(dBm)	Pout(dBm)	Pout(W)	Ids(A)	Gain(dB)	Eff (%)	2nd (dBc)	3rd (dBc)
300	33.80	43.60	22.9	0.83	9.8	86.3	-14.6	-14.4
500	29.70	44.25	26.6	1.18	14.6	70.5	-15.4	-10.8
700	32.80	44.46	27.9	1.44	11.7	60.6	-10.8	-9.9
900	32.80	44.69	29.4	1.78	11.9	51.7	-10.2	-11.6
1000	33.50	45.05	32.0	2.07	11.6	48.3	-10.9	-14.1
1200	34.50	45.60	36.3	2.51	11.1	45.2	-11.9	-15.0
1400	34.50	45.28	33.7	2.35	10.8	44.9	-11.4	-17.5
1600	34.50	45.08	32.2	2.47	10.6	40.8	-11.5	-18.6
1800	34.50	45.58	36.1	2.74	11.1	41.2	-14.3	-17.5
2000	34.50	46.30	42.7	2.73	11.8	48.8	-15.1	-17.4
2200	34.50	46.45	44.2	2.50	12.0	55.2	-15.1	-20.0
2400	34.50	46.33	43.0	2.33	11.8	57.6	-17.3	-21.0
2600	34.50	45.80	38.0	2.00	11.3	59.4	-16.9	-29.1
2800	34.50	44.75	29.9	1.93	10.3	48.3	-18.4	-29.9
3000	34.50	44.70	29.5	2.18	10.2	42.3	-27.6	-25.5
3200	34.50	44.36	27.3	2.23	9.9	38.2	/	/
3400	34.50	44.35	27.2	2.40	9.9	35.5	/	/
3600	34.50	44.45	27.9	2.56	10.0	34.0	/	/
3800	34.50	44.20	26.3	2.51	9.7	32.7	/	/
4000	34.50	44.55	28.5	2.47	10.1	36.1	/	/
4200	34.50	45.15	32.7	2.38	10.7	43.0	/	/
4400	34.50	45.20	33.1	2.27	10.7	45.6	/	/
4600	34.50	45.20	33.1	2.22	10.7	46.6	/	/
4800	34.50	44.40	27.5	2.05	9.9	42.0	/	/
5000	34.50	44.50	28.2	2.09	10.0	42.1	/	/
5200	34.50	44.80	30.2	2.39	10.3	39.5	/	/
5400	34.50	45.50	35.5	2.69	11.0	41.2	/	/
5600	34.50	45.56	36.0	2.66	11.1	42.3	/	/
5800	34.50	45.20	33.1	2.39	10.7	43.3	/	/
6000	34.50	44.50	28.2	2.01	10.0	43.8	/	/

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2. Network Results

Test Condition

$$V_{ds} = 32 \text{ V}, V_{gs} = -2.53 \text{ V}, I_{dq} = 200 \text{ mA}$$

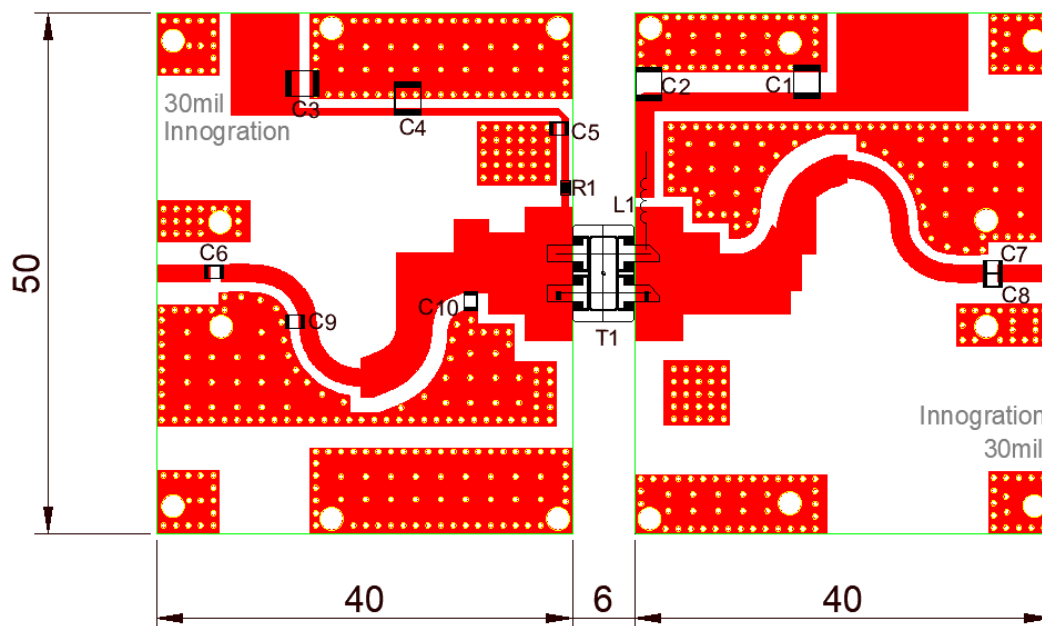
input power = 0 dBm



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BOM of Test Circuit



Reference Designator	Description	Quantity	Suggestion
C1, C2, C3, C4	10uF/200V, 0805/1210	4	
C5	10nF/200V, 0805/1210	1	
C6	6.8 pF, 0603/0805	1	Beijing YuanLu HongYuan Electronic Technology CO., LTD
C7, C8	15 pF, 0603/0805	2	
R1	10 Ω , 0603/0805	1	Murata
L1	Wire diameter 1mm; Insider diameter 3mm; 2 turn	1	
T1	XR5803HS	1	Innogration
PCB	Rogers 4350B, 30mil		-

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DEMO PICTURE

