

STCV58150F4C**STCV58150F4C Class AB 5000-6000MHz****December, 16.2025****Introduction**

This amplifier is designed with Innogrations 50V GaN RF Energy transistor STCV58150F4C to support CW for Telecom usage within 5-6GHz

Demo and Transistor

Frequency band :	5000-6000MHz
Application :	Telecom
Configuration :	Class AB
Test Signal :	CW/Pulse
Transistor :	STCV58150F4C
Date code :	244618
PCB :	30 Mil Rogers 4350B

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 $V_{ds} = 50V$, $V_{gs} = -3.3V$,

$I_{dq} = 100mA$ all measurements unless otherwise noted.

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Test Results

1. Summary @ Bench (Chengdu)

(1) Test Condition

$V_{gs} = -3.3V$, $V_{ds} = 50V$, $I_{dq} = 100mA$

Signal mode : Pulse 100us 10%, Frequency : 5000-6000MHz

Freq (MHz)	P1dB (dBm)	P1dB (W)	P1dB Eff(%)	P1dB Gain(dB)	P3dB (dBm)	P3dB (W)	P3dB Eff(%)
5000	51.84	152.8	52.0	12.07	53.03	201.1	55.4
5100	51.73	148.8	50.4	12.42	53.16	207.2	55.2
5200	51.96	157.1	50.2	12.09	53.37	217.2	55.6
5300	52.15	164.2	50.7	11.46	53.43	220.4	55.9
5400	52.32	170.7	50.9	11.57	53.44	220.9	55.2
5500	52.11	162.7	49.5	11.79	53.39	218.5	54.5
5600	51.85	153.2	48.8	11.5	53.28	213.0	54.2
5700	51.78	150.7	49.3	11.79	53.18	208.0	54.2
5800	51.73	149.0	49.5	12.32	53.07	202.9	53.9
5900	51.67	146.7	50.1	11.66	53.08	203.4	54.8
6000	51.47	140.4	49.9	11.23	52.87	193.8	54.3

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(2) Test Condition

$V_{gs} = -3.3V$, $V_{ds} = 50V$, $I_{dq} = 100mA$, Frequency : 5000-6000MHz

Signal mode : CW

Freq(MHz)	Pin(dBm)	Psat(dBm)	Psat(W)	IDS(A)	Gain(dB)	Eff(%)
5000	43.7	52.85	192.75	7.19	9.15	53.62
5100	43.6	52.94	196.79	7.38	9.34	53.33
5200	43.8	53.06	202.30	7.57	9.26	53.45
5300	44.5	53.08	203.24	7.61	8.58	53.41
5400	44.4	53.02	200.45	7.65	8.62	52.40
5500	43.9	52.89	194.54	7.57	8.99	51.40
5600	44.3	52.9	194.98	7.53	8.6	51.79
5700	44	52.88	194.09	7.45	8.88	52.10
5800	43.2	52.8	190.55	7.34	9.6	51.92
5900	44.3	52.86	193.20	7.32	8.56	52.79
6000	44.2	52.63	183.23	7.03	8.43	52.13

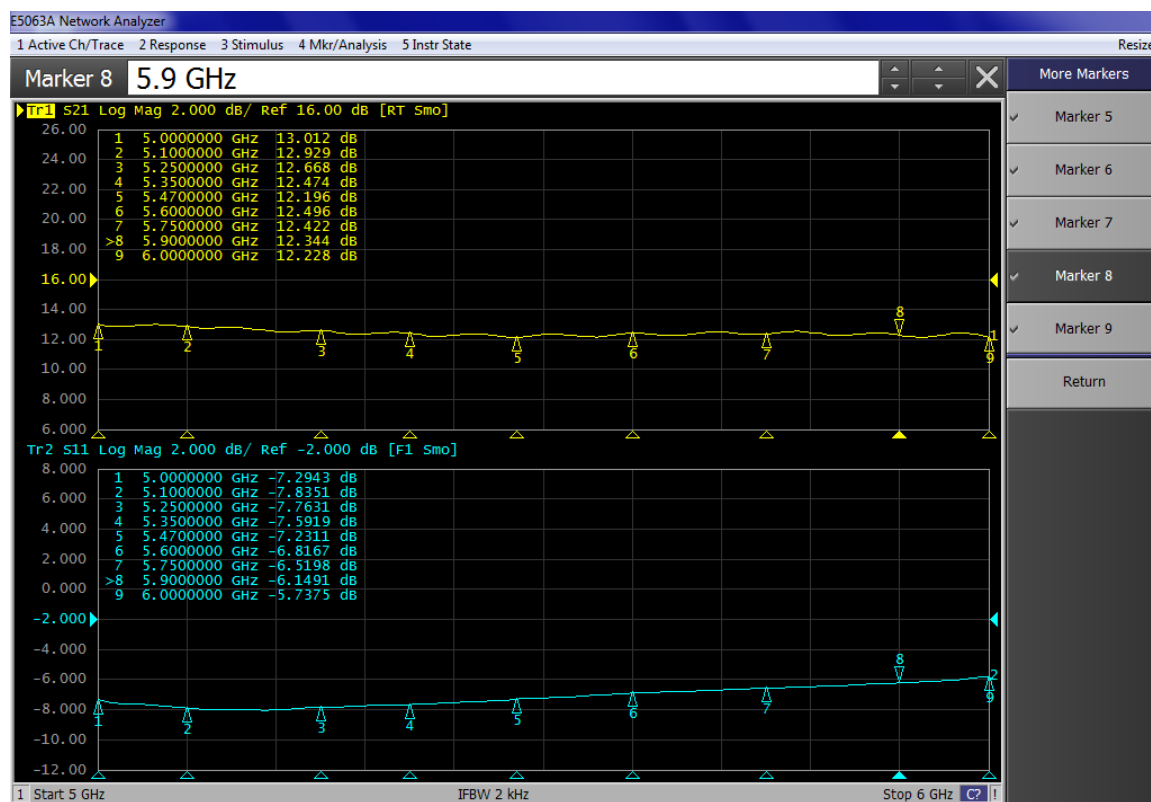
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2. Network Results

Test Condition

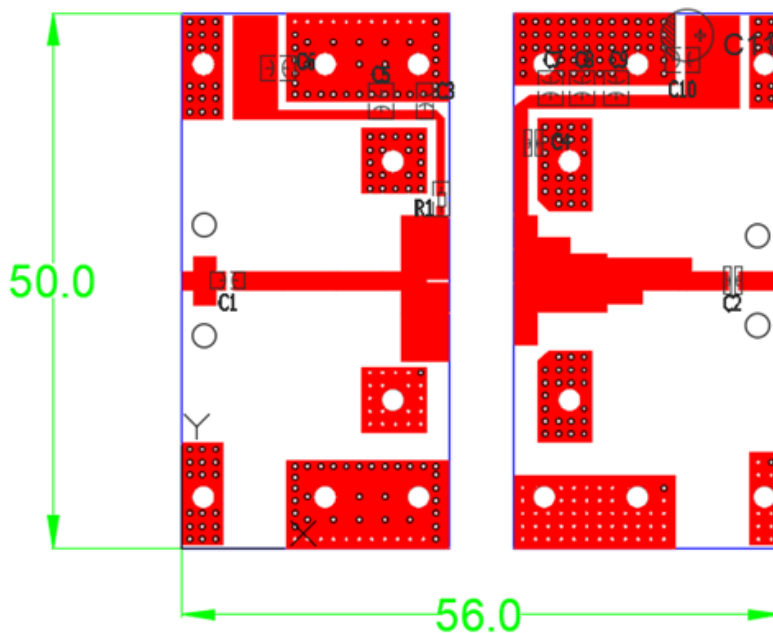
$V_{gs} = -3.25V$, $V_{ds} = 50V$, $I_{dq} = 200mA$

input power = 0 dBm



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BOM of Test Circuit



omponent	Description	Suggested Manufacturer
C11	470uF/63V	-
C5,C6,C7,C8 C9,C10	10uF/100V	-
C1, C3,	3.9pF(MQ300805)	
C2 ,C4	3.9pF(MQ300709)	
R1	Chip Resistor,10Ω (0805)	-
PCB	30mil Rogers 4350B	-