Test Report STBV25165A2C*2 2400-2500MHz

2026-2-11

Introduction

This amplifier is designed with Innogration 50V STBV25165A2C GaN

Demo and Transistor

Frequency band : 2400-2500MHz
Application : Telecom
Configuration : Class AB
Test Signal : Pulsed CW,CW
Transistor : STCV25165A2C
Date code : N/A
PCB : 30 Mil RO4350B

The amplifier has been characterized under the following conditions:

- Network Analyzer plots for gain and IRL.
- Peak power measurement using the Pulse, 20uS width, 30% cycle & 100% cycle.
- spectrum analyzer to.show no oscillation or instability issue
- RF Test Bench 1

Test Results:

1. RF Performance

i. Pulse test data

V_{DS}= 50V, I_{DQ}=50mA

◆20uS width, 20% Cycle (500W ATT)

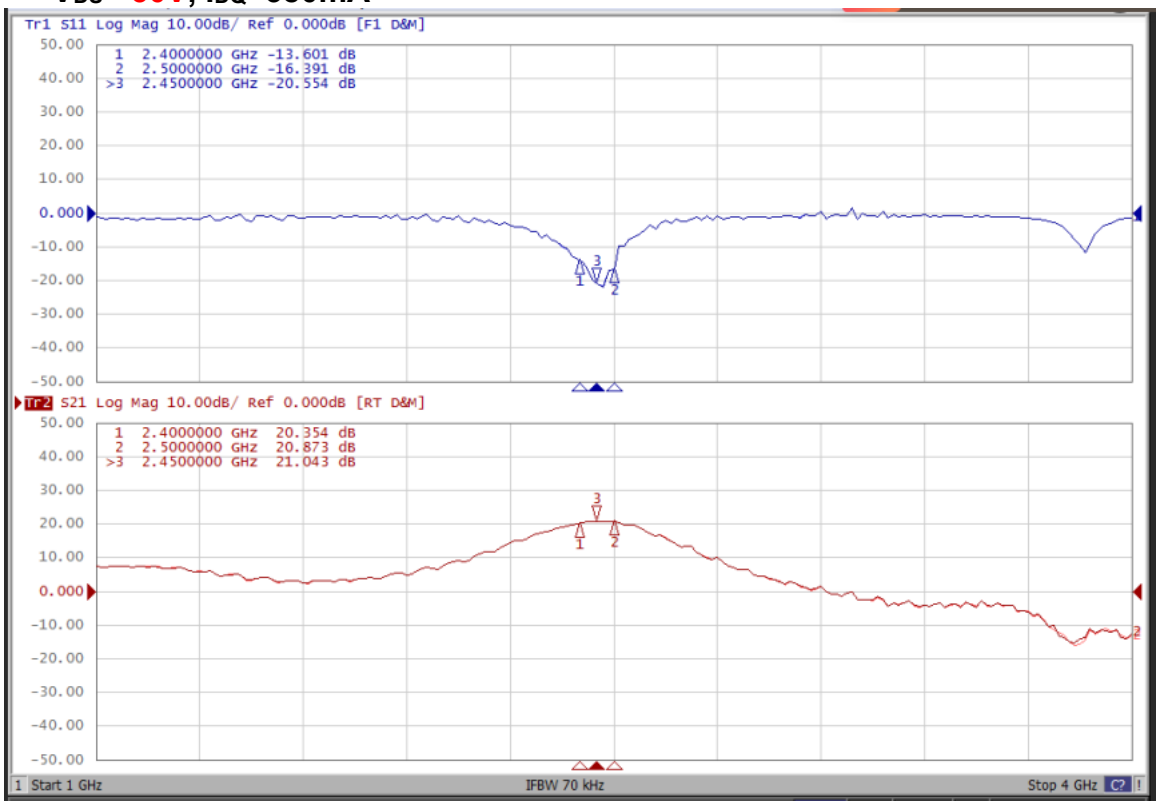
Freq (MHz)	P1dB (dBm)	P1dB (W)	P1dB Eff(%)	P1dB Gain(dB)	PsatdB (dBm)	PsatdB (W)	PsatdB Eff(%)
2400	54.98	315.1	65.8	19.51	55.96	384.3	71
2450	54.44	277.7	67.6	20.21	55.65	367.7	74
2500	53.29	213.1	63.4	20.1	55.13	326.2	73

◆CW (500W ATT)

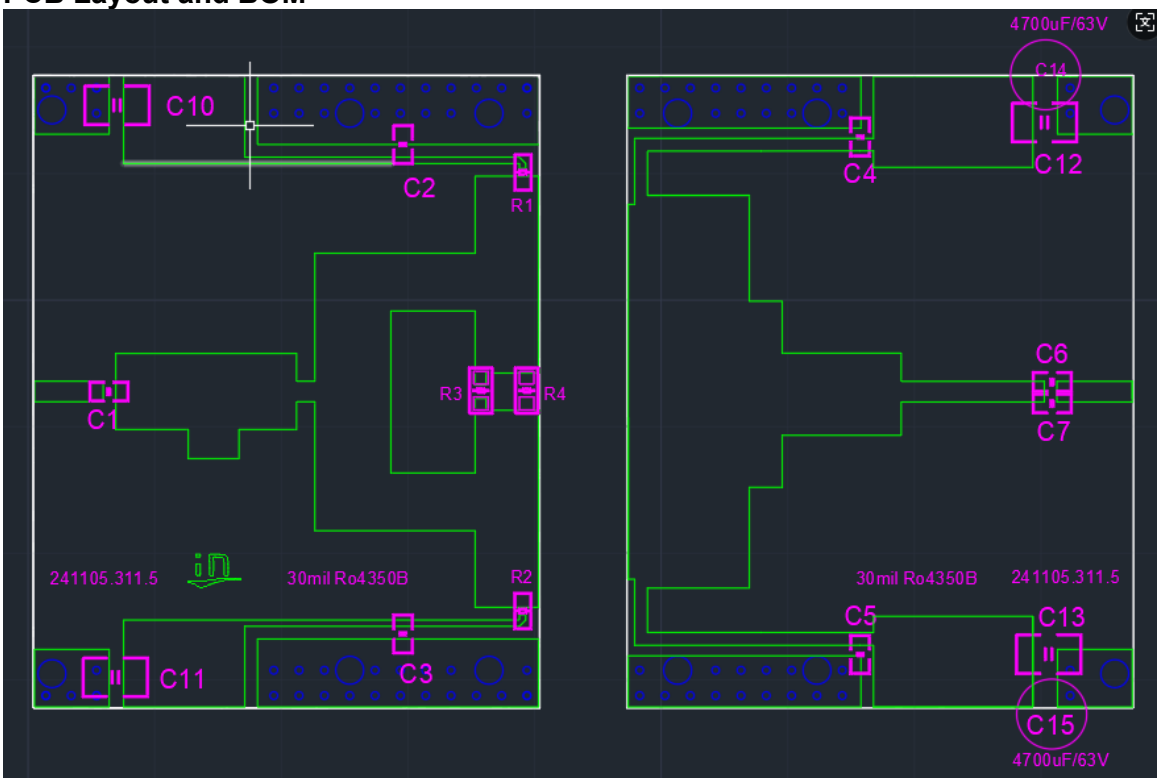
Freq (MHz)	P1dB (dBm)	P1dB (W)	P1dB Eff(%)	P1dB Gain(dB)	P2dB (dBm)	P2dB (W)	P2dB Eff(%)
2400	55.19	330.3	66.4	18.46	55.75	365.6	70
2450	54.6	288.4	68.1	19.25	55.34	342.3	72
2500	53.29	213.2	63.1	19.24	54.87	306.6	72

2. S-Parameter test data

V_{DS}= 50V, I_{DQ}=380mA



3. PCB Layout and BOM



(ii) BOM of Test Circuit

Reference	Footprint	Value	Quantity
C1, C2, C3, C4, C5	0805	20pF/250V	5
C6, C7	0805	8.2pF/250V	2
C10, C11, C12, C13	1210	10uF/100V	4
C14, C15		470uF/63V	2
R1, R2	0603	10R	2
R3, R4	0805	10R	2
	A2C	STBV25165A2C	2