GTAH50141BY4 Class AB 3300~3800MHz

Nov. 5, 2024

Introduction

This amplifier is designed with Innogration 28V GaN transistor.

Demo and Transistor

Frequencyband	:	3300~3800MHz
Application	:	Multi Market
Configuration	:	Class AB
Test Signal	:	Pulse/CW
Transistor	:	GTAH50141BY4
Date code	:	243110
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 Pulse and CW.

Test Results

1. Summary @ Bench1(Chengdu)

(1)

Vds = 28V， Vgs = -2.60V， Idq = 100 mA

Signal mode: Pulse 10us,10%

Freq(MHz)	Pin(dBm)	Psat(dBm)	Psat(W)	Ids(A)	Gain(dB)	Eff(%)
3300	41.90	52.10	162.2	0.99	10.2	58.5
3400	42.05	52.20	166.0	0.99	10.2	60.1
3500	42.25	52.47	176.6	1.06	10.2	59.5
3600	41.70	52.65	184.1	1.09	11.0	60.3
3700	41.48	52.42	174.6	1.01	10.9	61.7
3800	42.00	52.43	175.0	1.00	10.4	62.5

(2)

Vds = 28V， Vgs = -2.60V， Idq = 100 mA

Signal mode: CW

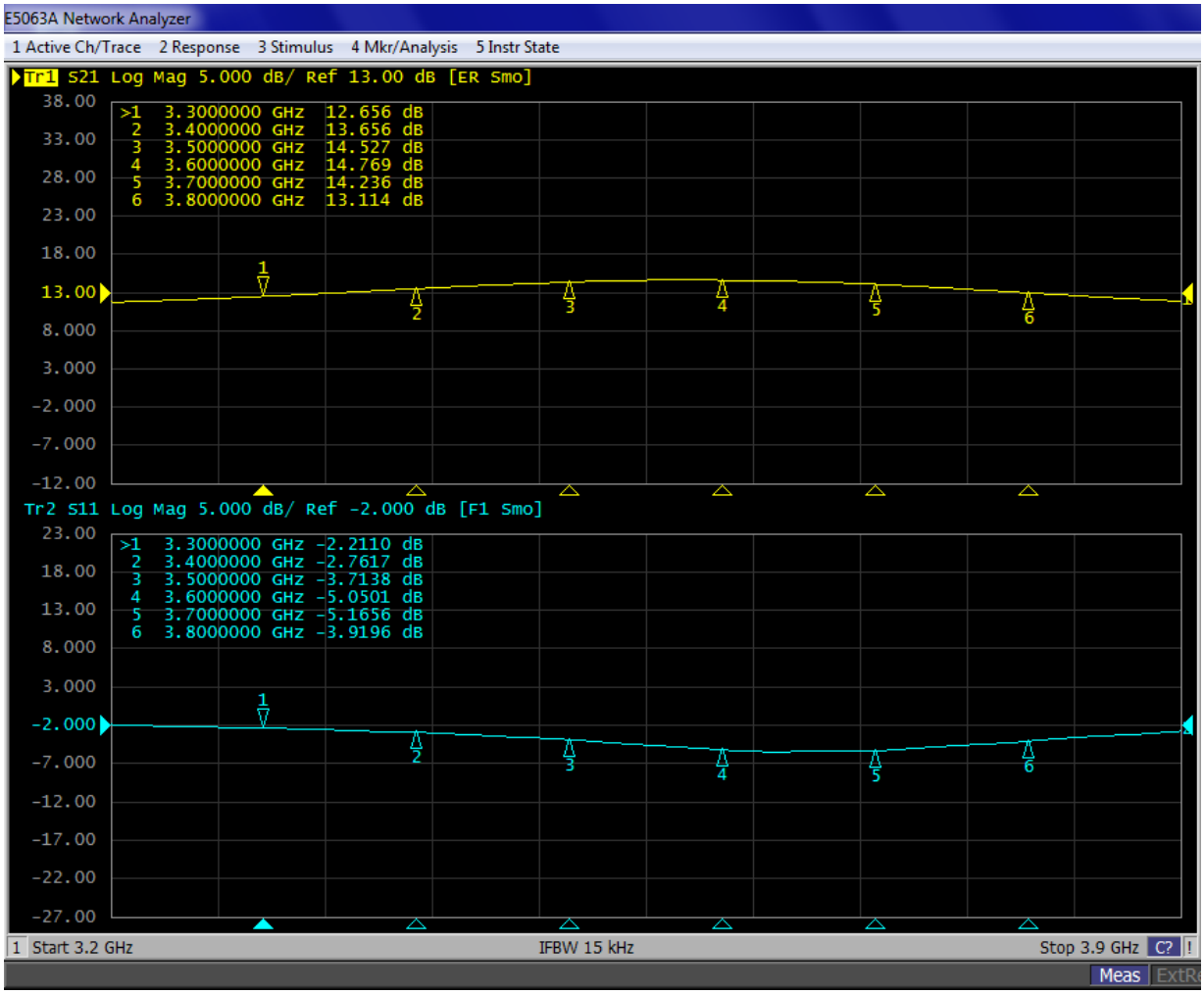
Freq(MHz)	Pin(dBm)	Psat(dBm)	Psat(W)	Ids(A)	Gain(dB)	Eff(%)
3300	42.00	51.97	157.4	9.79	10.0	57.4
3400	42.40	52.17	164.8	9.89	9.8	59.5
3500	42.70	52.40	173.8	10.65	9.7	58.3
3600	42.20	52.55	179.9	10.79	10.4	59.5
3700	41.85	52.35	171.8	10.01	10.5	61.3
3800	41.60	52.15	164.1	9.62	10.6	60.9

2. Network Results

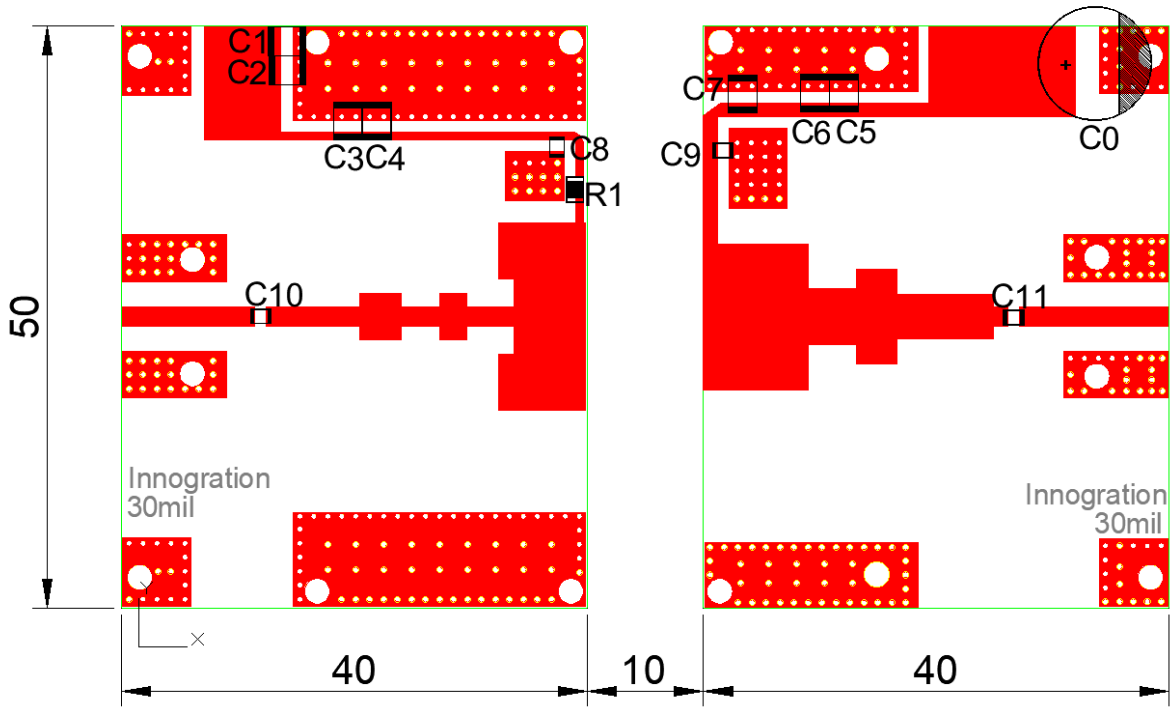
Test Condition

V_{gs} = -2.47V， V_{ds} = 28 V， I_{dq}= 530mA

input power = 0 dBm



BOM of Test Circuit



Component	Description	Suggestion
C0	1000uF/63V	Electrolytic Capacitor
C1, C2, C3, C4, C5, C6, C7	10uF	1210
C8, C9, C10	3.9pF	Beijing YuanLu HongYuan Electronic Technology CO., LTD MQ200805
C11	3.6pF	Beijing YuanLu HongYuan Electronic Technology CO., LTD MQ301111
R1	Chip Resistor,10Ω	0805
PCB	Rogers 4350B, thickness 30 mils, 1oz copper	