

**YHG-26-20****S3L4015VS: 200-2000MHz**

## **S3L4015VS Class AB 200-2000MHz**

**June 23 , 2026**

### **Introduction**

This amplifier is designed with Innogrations 50V Gan transistor.

### **Demo and Transistor**

<b>Frequencyband</b>	: 200-2000MHz
<b>Application</b>	: Multi Market
<b>Configuration</b>	: Class AB
<b>Test Signal</b>	: CW
<b>Transistor</b>	: S3L4015VS
<b>Date code</b>	: 241921S-02
<b>PCB</b>	: FSD1020T , Dk=10.2 , 20mil

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  $V_{DS} = 50V$  ,  $I_{dq} = 140mA$  , all measurements unless otherwise noted.**

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**1. Network Results**

**Test Condition**

$V_{ds}=44V$ ,  $V_{gs}=-3.27V$ ,  $I_{dq}=200mA$ , Input Power = 0dBm



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**Test Results**

**2. Summary @ Bench 2(Chengdu)**

**(1) Test Condition**

Signal mode : Pulse 10% 100us

Frequency : 200-2000MHz

$V_{gs} = -3.3V$ ,  $V_{ds} = 50V$ ,  $I_{dq} = 140mA$

Freq(MHz)	Pin(dBm)	Pout(dBm)	Pout(W)	IDS(A)	Gain(dB)	Eff(%)
200	37.08	51.99	158.12	0.92	14.91	34.37
225	36	52.8	190.55	0.74	16.8	51.50
250	35.82	52.42	174.58	0.5	16.6	69.83
300	36.84	51.69	147.57	0.39	14.85	75.68
400	37.27	52.33	171.00	0.65	15.06	52.62
500	37.51	52.61	182.39	0.82	15.1	44.49
600	37.46	53.1	204.17	0.8	15.64	51.04
700	36.97	53.59	228.56	0.77	16.62	59.37
800	37.39	52.59	181.55	0.69	15.2	52.62
900	38.73	52.58	181.13	0.75	13.85	48.30
1000	39.59	52.72	187.07	0.8	13.13	46.77
1100	38.72	53.87	243.78	0.85	15.15	57.36
1200	37.43	53.77	238.23	0.72	16.34	66.18
1300	37.32	53.46	221.82	0.73	16.14	60.77
1400	38.44	53.49	223.36	0.87	15.05	51.35
1500	38.65	53.09	203.70	0.83	14.44	49.09
1600	38.88	53.06	202.30	0.64	14.18	63.22
1700	38.67	52.59	181.55	0.59	13.92	61.54
1800	38.9	52.4	173.78	0.68	13.5	51.11
1900	34.98	52.26	168.27	0.81	17.28	41.55
2000	35.07	52.13	163.31	0.8	17.06	40.83

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**(2) Test Condition**

Signal mode : CW

Frequency : 200-2000MHz

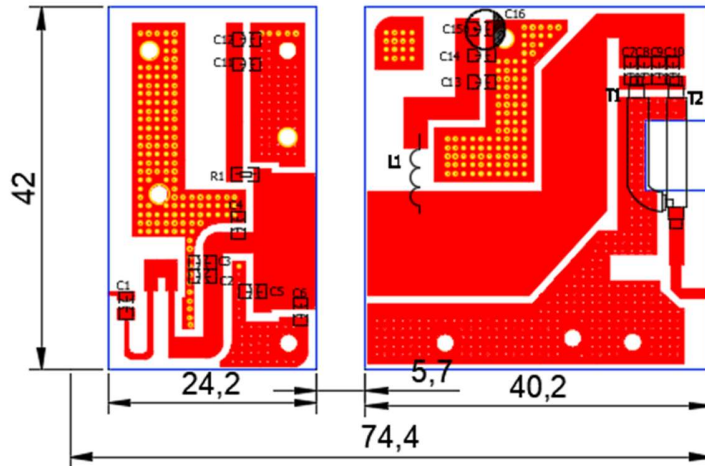
$V_{gs} = -3.3V$ ,  $V_{ds} = 44V$ ,  $I_{dq} = 140mA$

Freq(MHz)	Pin(dBm)	Pout(dBm)	Pout(W)	IDS(A)	Gain(dB)	Eff(%)	2th	3rd
200	37.18	50.78	119.67	7.96	13.6	34.17	-8.15	-12.90
225	36.1	52.1	162.18	6.85	16	53.81	-10.70	-16.00
250	35.92	51.42	138.68	4.5	15.5	70.04	-12.20	-12.80
300	36.94	50.66	116.41	3.54	13.72	74.74	-10.30	-16.80
400	37.37	51.43	139.00	5.94	14.06	53.18	-9.50	-13.40
500	37.71	51.67	146.89	7.34	13.96	45.48	-10.00	-16.10
600	37.56	52.13	163.31	7.24	14.57	51.26	-8.80	-14.40
700	37.09	52.79	190.11	7.08	15.7	61.03	-12.00	-15.40
800	37.49	51.77	150.31	6.37	14.28	53.63	-9.10	-20.20
900	38.83	51.63	145.55	6.79	12.8	48.72	-8.40	-11.70
1000	39.69	51.76	149.97	7.19	12.07	47.40	-14.70	-13.50
1100	38.82	53.02	200.45	7.8	14.2	58.41	-21.00	-25.00
1200	37.52	52.82	191.43	6.59	15.3	66.02	-23.30	-18.10
1300	39.38	52.38	172.98	6.63	13	59.30	-34.50	-20.50
1400	38.53	52.49	177.42	7.82	13.96	51.56	-27.70	-25.00
1500	38.55	51.97	157.40	7.31	13.42	48.94	-18.00	-19.20
1600	38.78	52.05	160.32	5.78	13.27	63.04	-16.70	-18.70
1700	38.63	51.39	137.72	5.34	12.76	58.61	-22.40	-29.40
1800	36	51.1	128.82	6.08	15.1	48.16	-20.60	-31.50
1900	35.08	50.88	122.46	6.98	15.8	39.87	-27.50	-29.20
2000	35.17	50.97	125.03	6.94	15.8	40.94	-26.20	-26.80

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**BOM of Test Circuit**



Component	Description	Suggested Manufacturer
C1	56pF/MQ300805	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.
C16	470uF	
C12,C15	10uF	
C11, C14	10nF	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.
C13	12Pf/ MQ301111	
C2 ,C3	1Pf/ MQ300805	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.
C4,	2Pf/ MQ300805	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.
C5,C6	3pF/ MQ300805	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD
C7,C8,C9,C10	20pF/ MQ300805	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD
L1	1mm, 2 turns, diameter :5mm	DIY air core inductance
R1	10ohm/1206	Chip Resistor
T1	16.7ohm, 12mm	SFF-16.7-1.5
T2	16.7ohm, 12mm	SFF-16.7-1.5
PCB	<b>FSD1020T , Dk=10.2 , 20mil</b>	