

ADIC010LP3

V0

性能特点

- 宽频带工作: 0.4 - 4 GHz
- P1dB: 27 dBm
- OIP3: 39 dBm
- 5 V单电源供电
- 内部集成射频过压保护
- 内部集成直流过压保护
- ESD 500V HBM
- 16-pin 3 mm × 3 mm Quad-Flat-No-Lead (QFN)

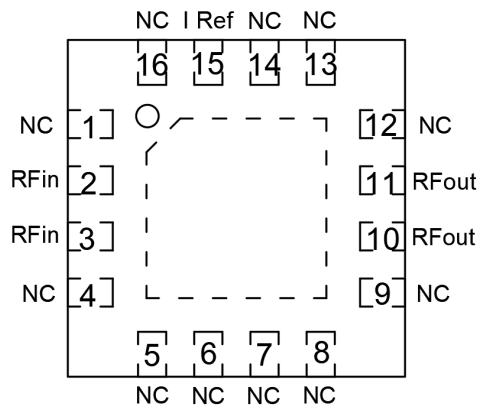
产品简介

ADIC010LP3是一款高性能AB类GaAs异质结双极性晶体管(HBT)射频功率放大器,采用表贴QFN封装。该产品是为 0.4 - 4 GHz 频段微基站设计的,输入匹配和输出匹配电路可以将负载线匹配到其他应用或其他窄带应用。

极限参数

最高电源电压	8 V
最高输入功率	+27 dBm
工作环境温度	-40 °C~+105 °C
储存温度	-65 °C~+150 °C

引脚定义



俯视透视图

引脚编号	符号	功能描述
2, 3	RFin	射频输入
10, 11	RFout	射频输出
15	I Ref	+5 V
1, 4, 5, 6, 7, 8, 9, 12, 13, 14, 16	NC	接地



关注公众号



ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

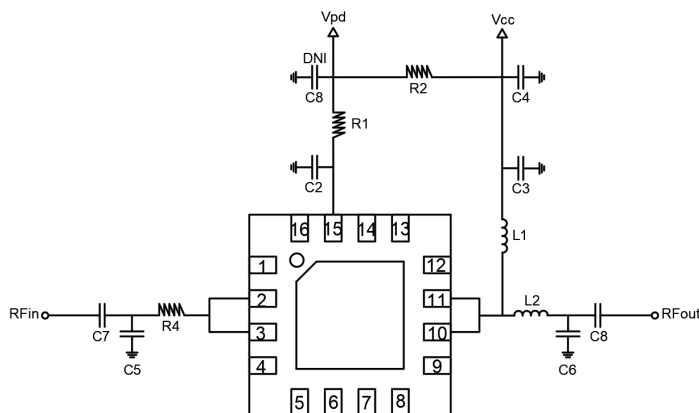
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电性能表 ($V_{CC} = V_{PD} = +5\text{ V}$, $I_{CQ} = 130\text{ mA}$, $I_{REF} = 7\text{ mA}$, $Temp = +25\text{ }^{\circ}\text{C}$)

指标	最小值	典型值	最大值	单位	备注
频率范围	0.4	-	4	GHz	
小信号增益	20	21.2	22.4	dB	920 MHz
	14.2	15.6	17	dB	2140 MHz
	12	13.1	14	dB	2500 MHz
	-	11	-	dB	3600 MHz
输出P1dB	+26.5	+27	-	dBm	920 MHz - 2700 MHz
	-	+28.6		dBm	3600 MHz
OIP3	+35	+37	-	dBm	920 MHz
	+37	+39		dBm	2140 MHz
	+37	+39.5		dBm	2500 MHz
	+37	+38.4		dBm	3600 MHz
输入回波损耗	5	14	-	dB	920 MHz
	5	13		dB	2140 MHz
	5	14		dB	2500 MHz
	-	32.9		dB	3600 MHz
输出回波损耗	5	7	-	dB	920 MHz
	5	6		dB	2140 MHz
	5	5.7		dB	2500 MHz
	-	10.7		dB	3600 MHz
反向隔离	20	25	-	dB	920 MHz - 2500 MHz
噪声	-	6.3	-	dB	920 MHz
		4.8		dB	2140 MHz
工作电压Vs	+4.75	+5	+5.25	V	-
工作电流Idd	115	130	155	mA	-

应用电路 (869 - 960 MHz)



元件列表			
元件名称	元件值	精度误差	备注
R2	0 Ω		0603
R4	2.7 Ω	1%	0402
R1	430 Ω	1%	0603
L2	3.3 nH	$\pm 0.3\%$	0603
L1	33 nH	5%	0805
C7	10 pF	5%	0603
C6	3 pF	$\pm 0.1\text{ pF}$	0603
C2,C8	100 pF	5%	0603
C4	1.0 μF	10%	0603
C5	8 pF	$\pm 0.1\text{ pF}$	0603
Q1	ADIC010LP3		

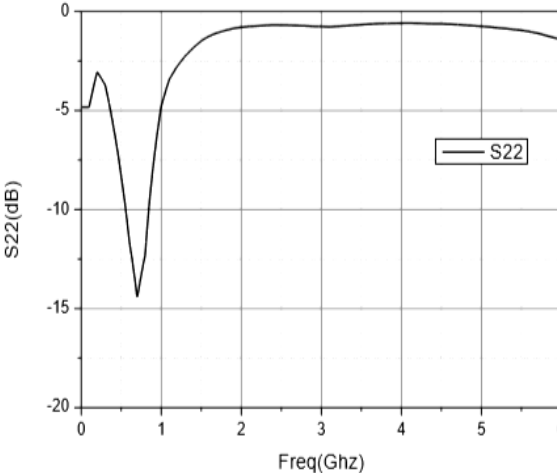
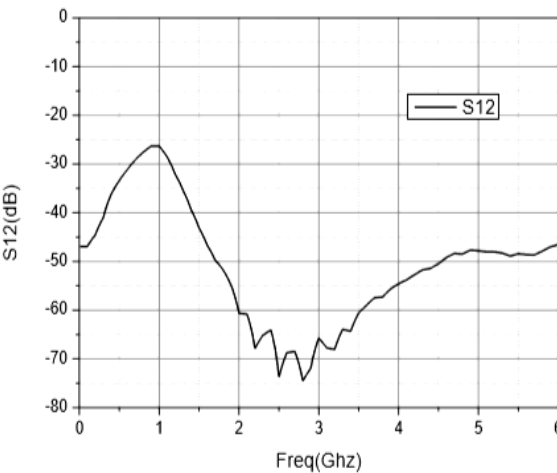
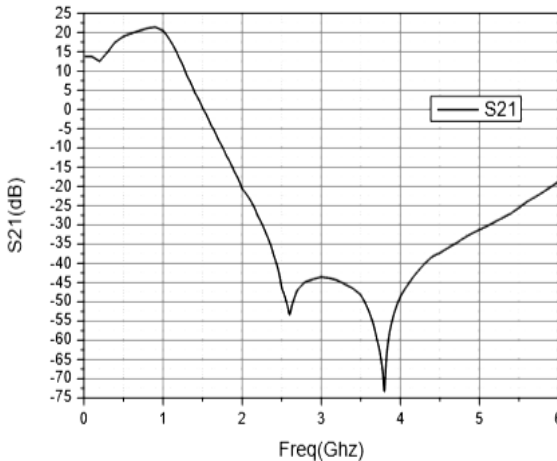
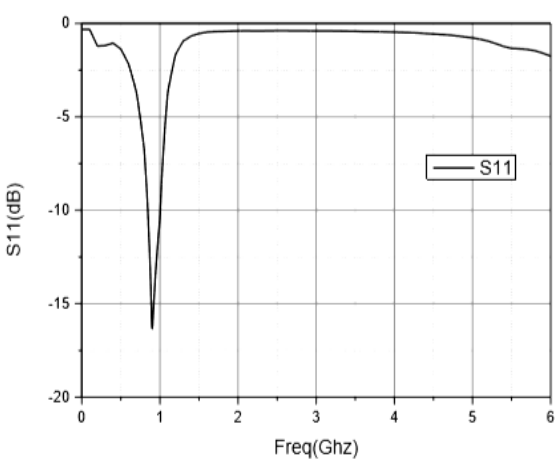
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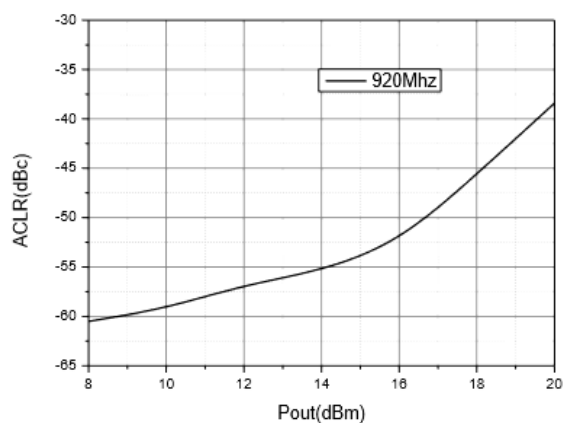
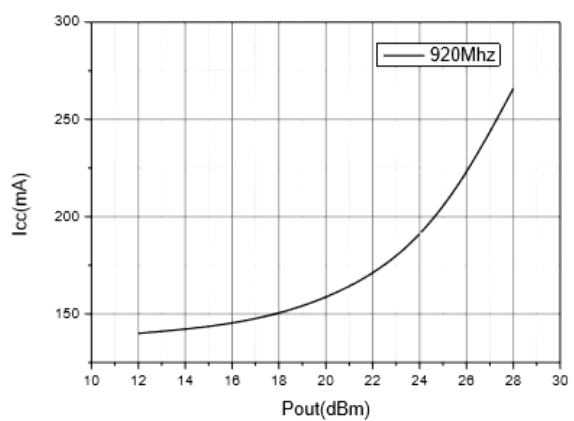
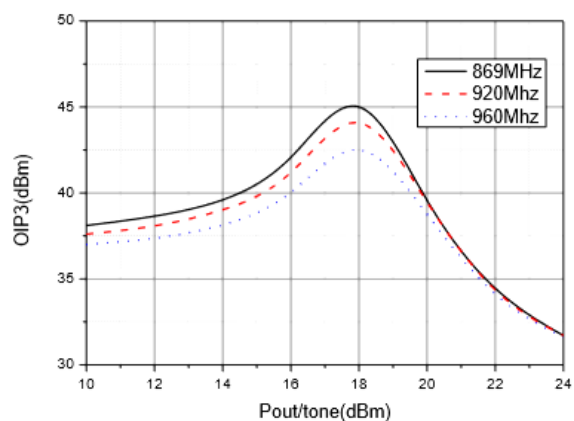
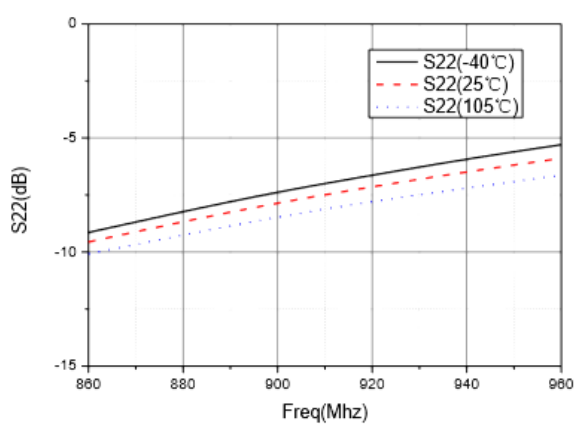
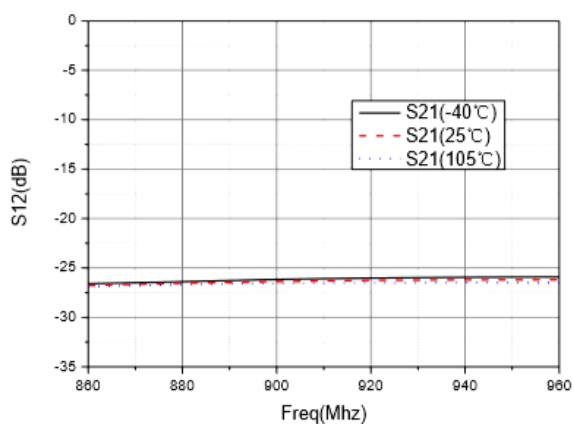
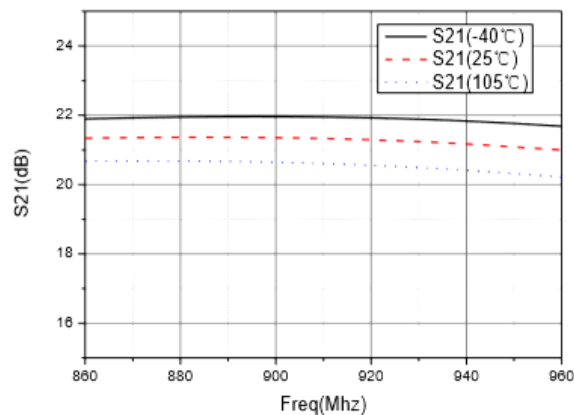
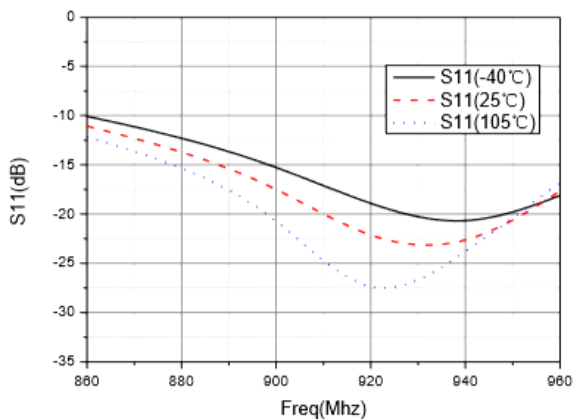
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电性能表 (869 - 960 MHz, $V_{CC} = V_{PD} = +5\text{ V}$, $I_{CQ} = 130\text{ mA}$, $I_{REF} = 7\text{ mA}$, $Temp = +25\text{ }^{\circ}\text{C}$)

指标	典型值			单位
频率	869	920	960	MHz
小信号增益	21.4	21.2	21.1	dB
三阶交调输出	+37	+37	+37	dBm
1dB压缩点输出功率	+27	+27	+27	dBm
输入回波损耗	12	15.7	17	dB
输出回波损耗	9	7	5.8	dB
输出功率	+17	+17	+17	dBm
噪声系数	6.3	6.3	6.3	dB

典型测试曲线 (869 - 960 MHz)

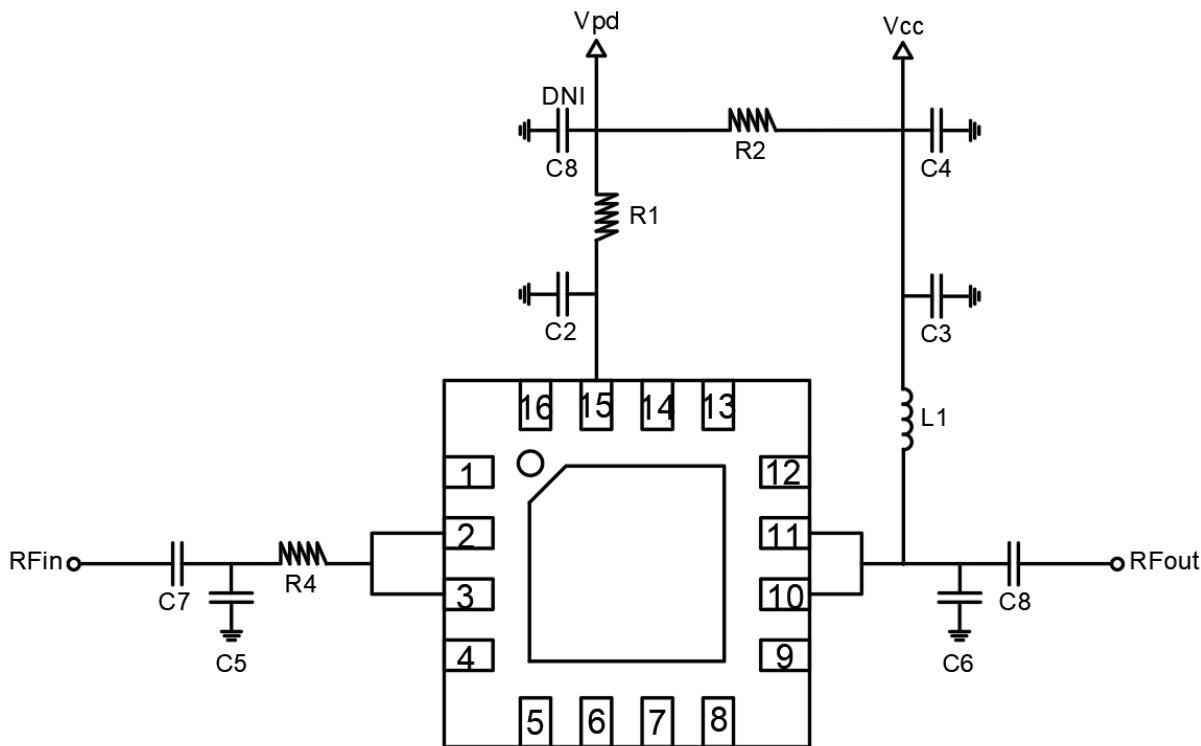




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应用电路 (2.11 - 3.8 GHz)



元件列表

元件名称	2.11 - 2.17 GHz	2.3 - 2.7 GHz	3.3 - 3.8 GHz	单位	精度误差	备注
R2	0	0	0	Ω		0603
R4	1.5	2.2	2.2	Ω	1%, ±1%, ±1%	0603
R1	430	430	430	Ω	1%, ±1%, ±1%	0603
C2	100	100	100	pF	5%	0603
C3	100	22	22	pF	5%, ±5%, ±5%	0603
C4	1.0	1.0	1.0	uF	10%	0603
C5	2.2	1.5	0.7	pF	±0.1 pF	0603
C6	0.8	0.8	0.5	pF	±0.1 pF	0603
C7	0.9	1.2	0.5	pF	±0.1 pF	0603
C8	3.3	39	2	pF	±0.1 pF, ±5%, ±5%	0603
L1	18	18	18	nH	5%	0805
Q1	ADIC010LP3	ADIC010LP3	ADIC010LP3			

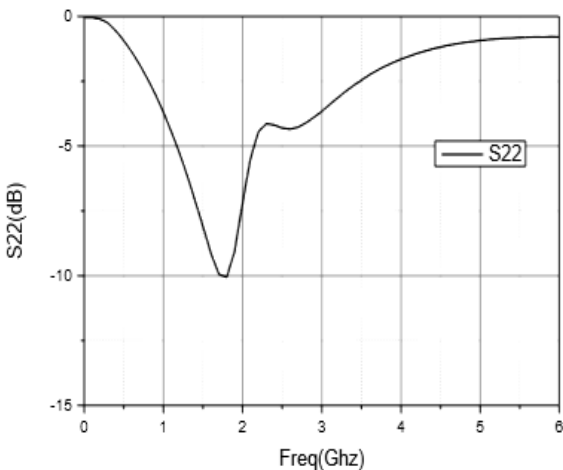
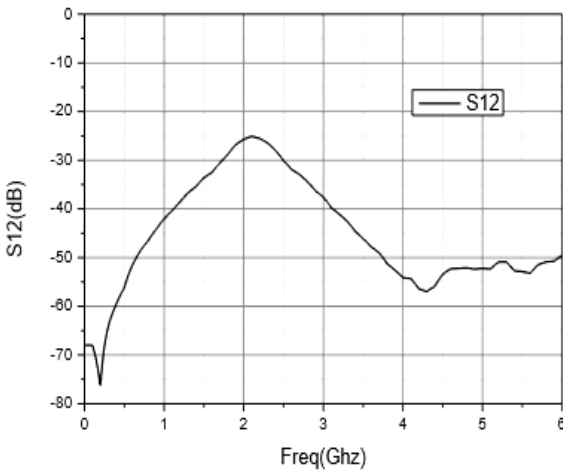
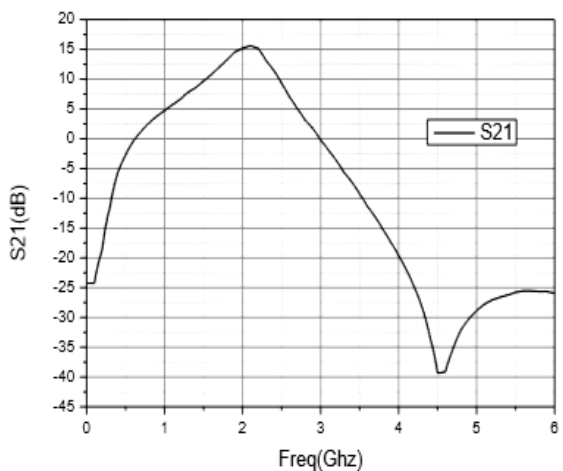
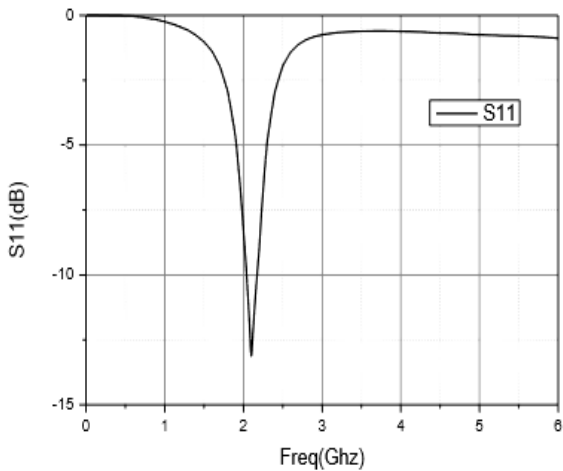
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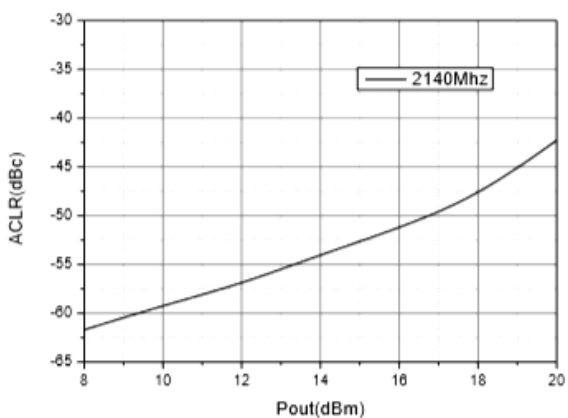
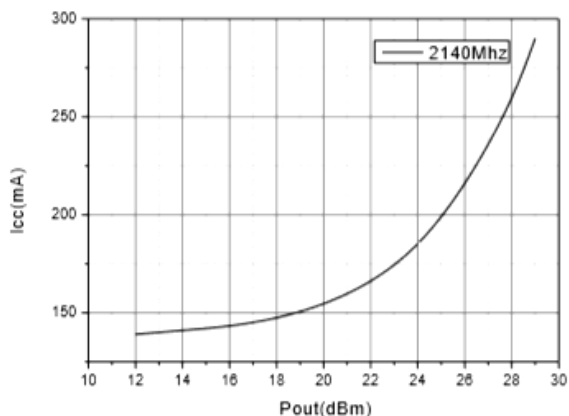
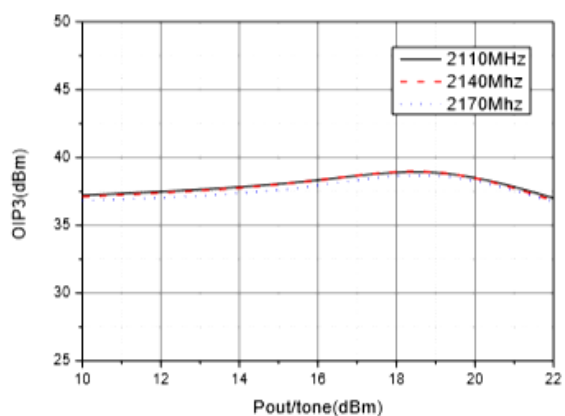
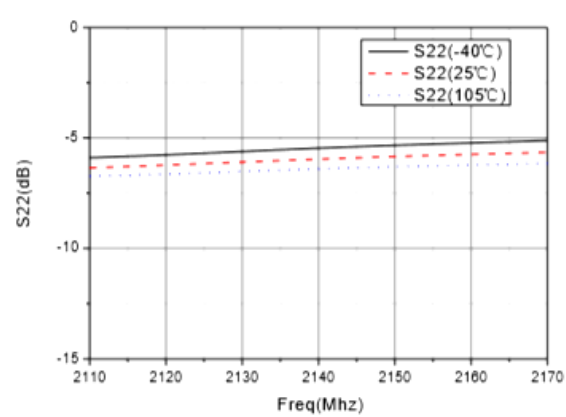
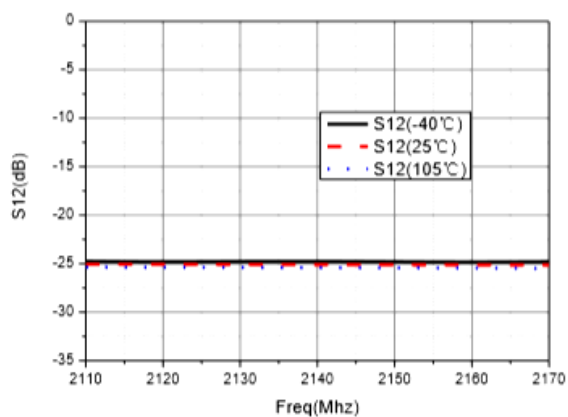
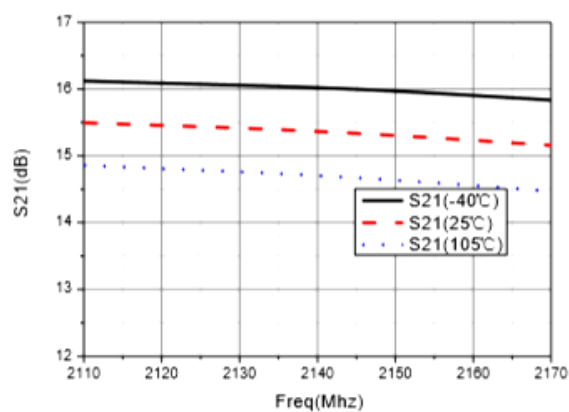
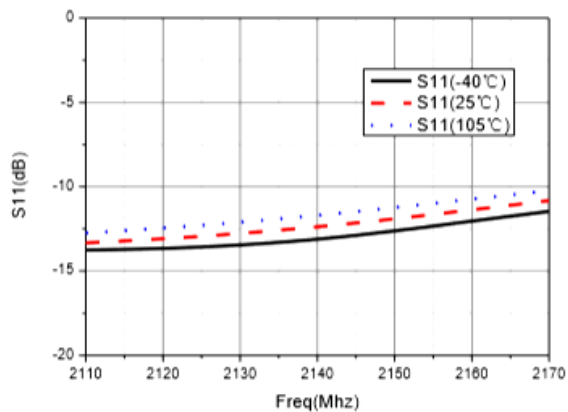
V0

电性能表 (2.11 - 2.17 GHz, $V_{CC} = V_{PD} = +5\text{ V}$, $I_{CQ} = 130\text{ mA}$, $I_{REF} = 7\text{ mA}$, Temp = +25 °C)

指标	典型值			单位
频率	2.11	2.14	2.17	GHz
小信号增益	15.6	15.6	15.5	dB
三阶交调输出	+38.8	+38.6	+38.6	dBm
1dB压缩点输出功率	+27	+27	+27	dBm
输入回波损耗	13.3	12.4	11	dB
输出回波损耗	6.3	6	6.1	dB
输出功率	+17	+17	+17	dB
噪声系数	4.8	4.8	4.8	dB

典型测试曲线 (2.11 – 2.17 GHz)





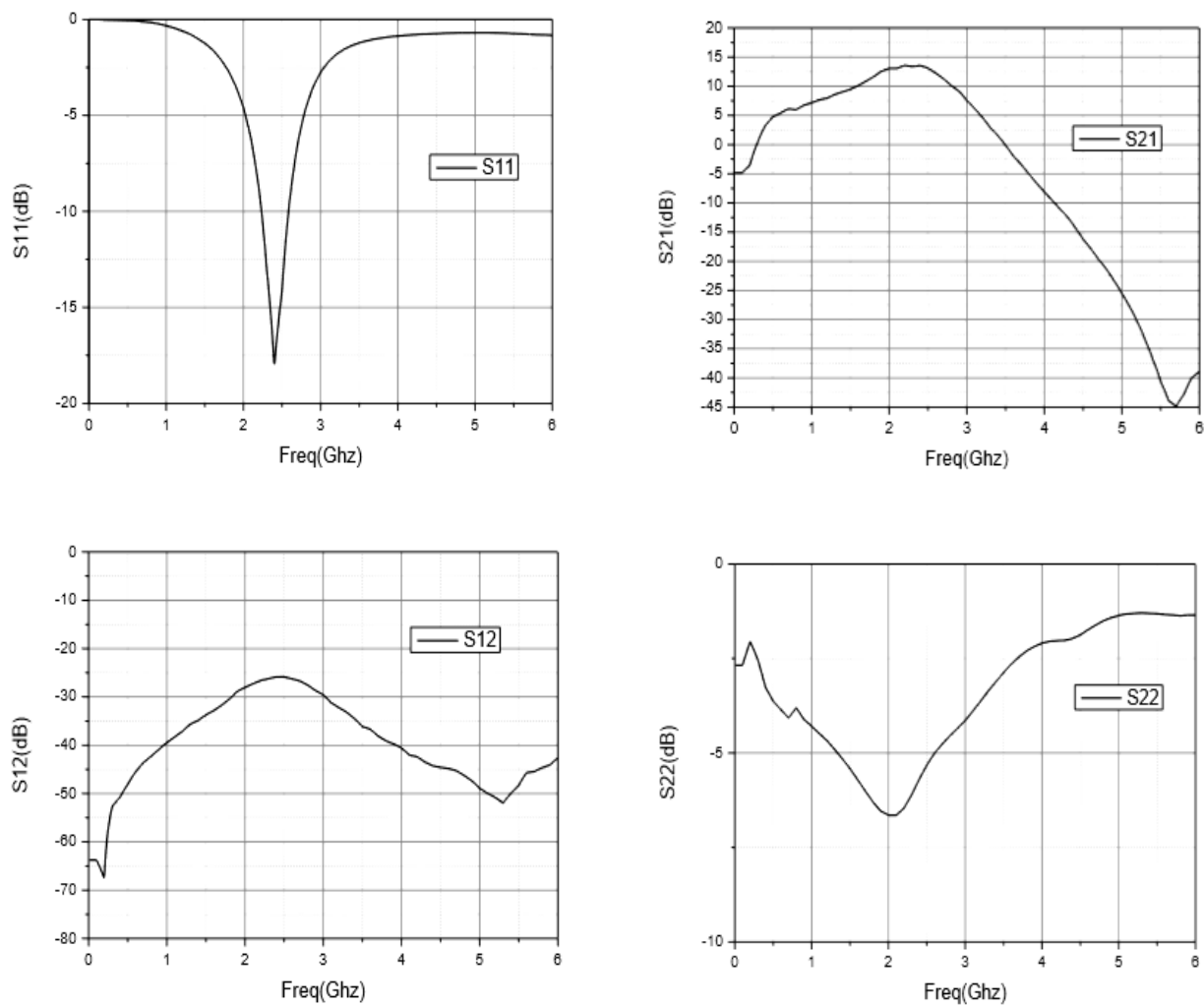
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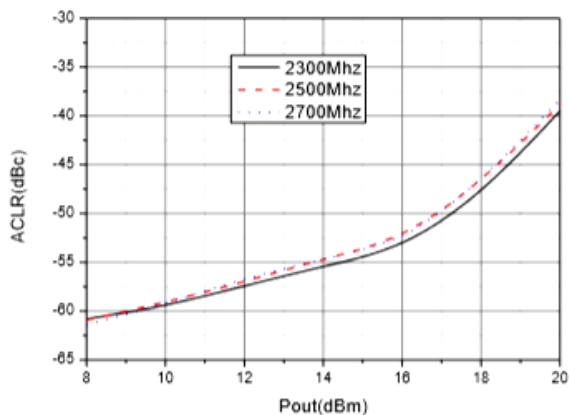
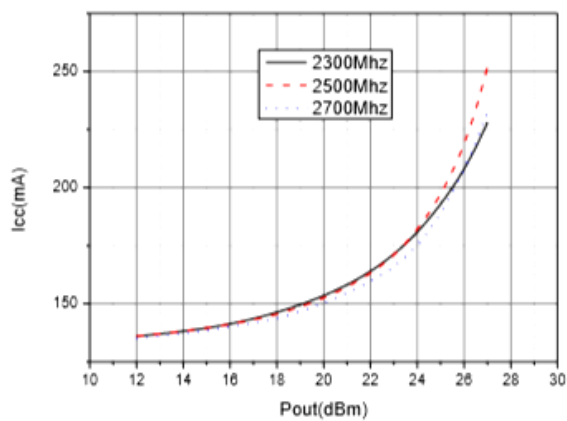
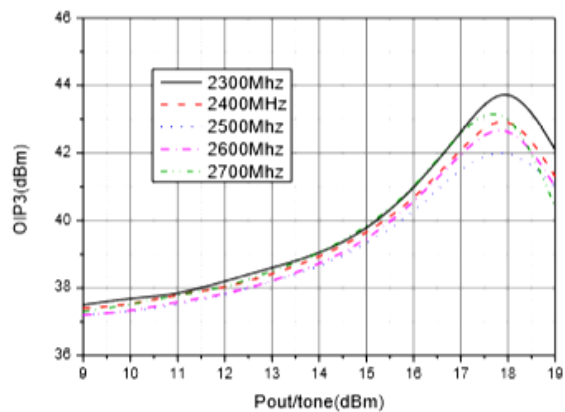
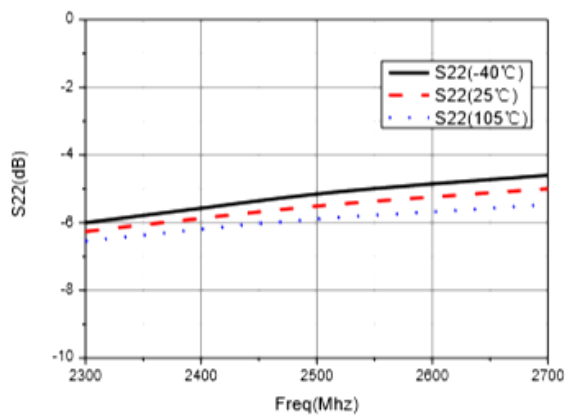
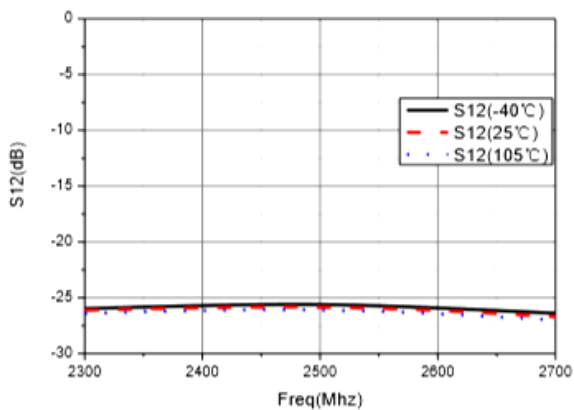
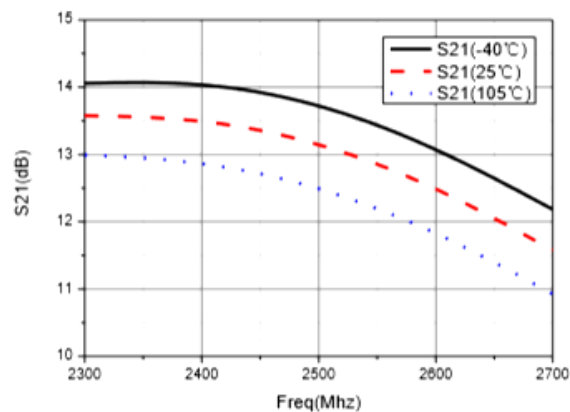
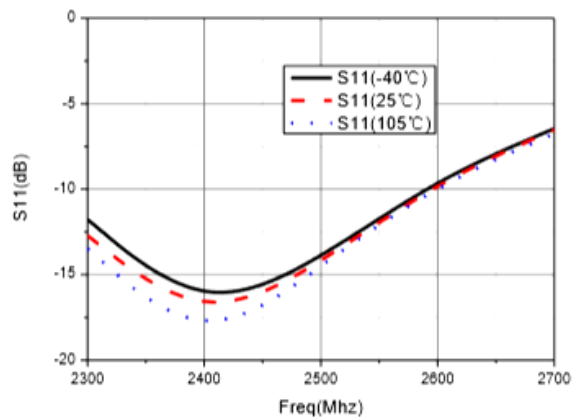
V0

电性能表 (2.3 - 2.7 GHz, $V_{CC} = V_{PD} = +5\text{ V}$, $I_{CQ} = 130\text{ mA}$, $I_{REF} = 7\text{ mA}$, Temp = +25 °C)

指标	典型值					单位
频率	2.3	2.4	2.5	2.6	2.7	GHz
小信号增益	13	13.3	13.1	12.5	11.7	dB
三阶交调输出	+40	+40	+39.5	+39.5	+39.5	dBm
1dB压缩点输出功率	+27	+27	+27	+27	+27	dBm
输入回波损耗	10.5	16.2	14	10.7	7	dB
输出回波损耗	6.3	6	5.7	5.3	5.1	dB
静态电流	130					mA

典型测试曲线 (2.3 - 2.7 GHz)





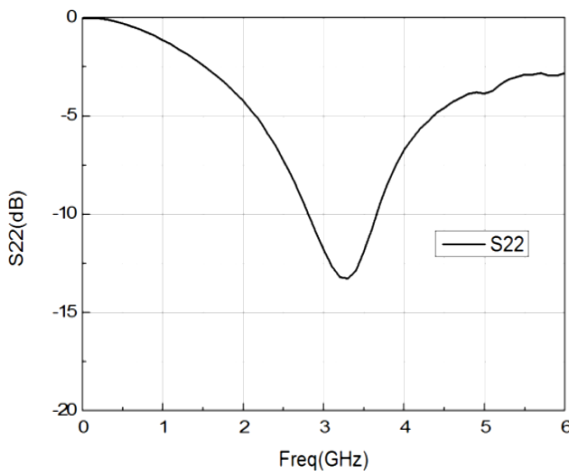
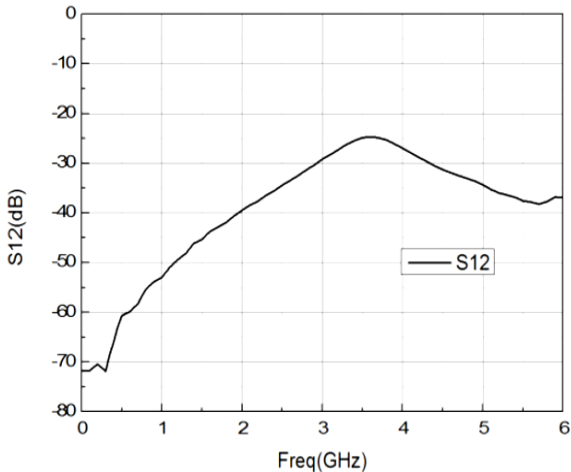
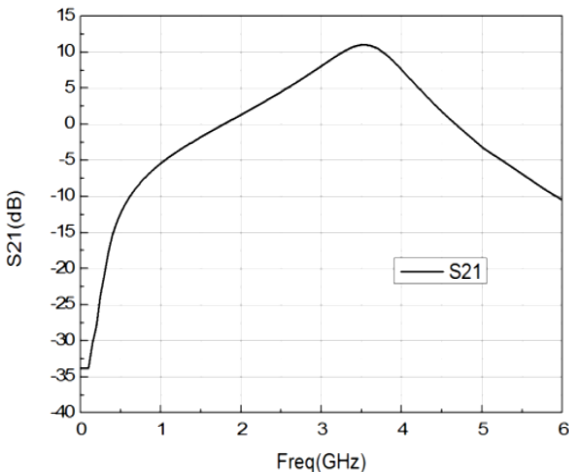
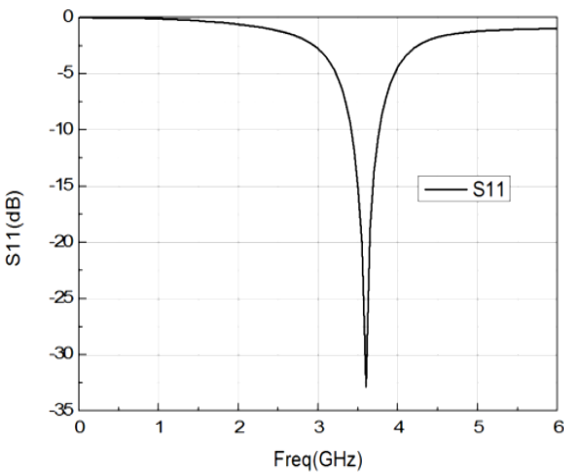
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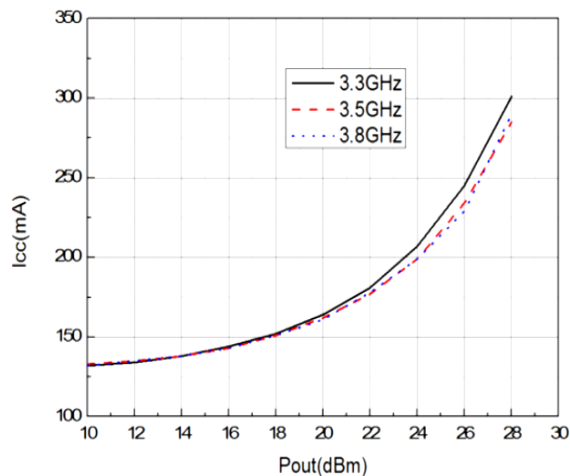
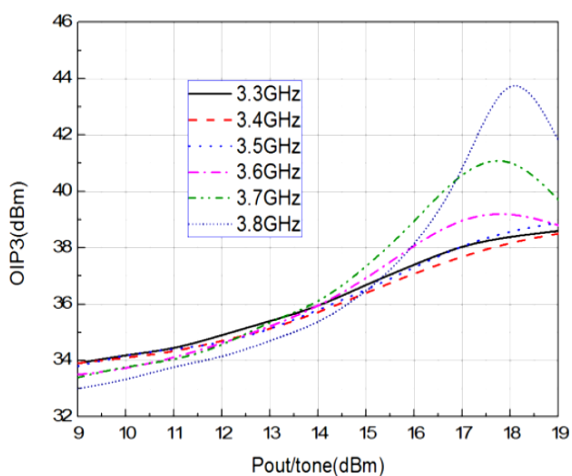
V0

电性能表 (3.3 - 3.8 GHz, $V_{CC} = V_{PD} = +5\text{ V}$, $I_{CQ} = 130\text{ mA}$, $I_{REF} = 7\text{ mA}$, Temp = +25 °C)

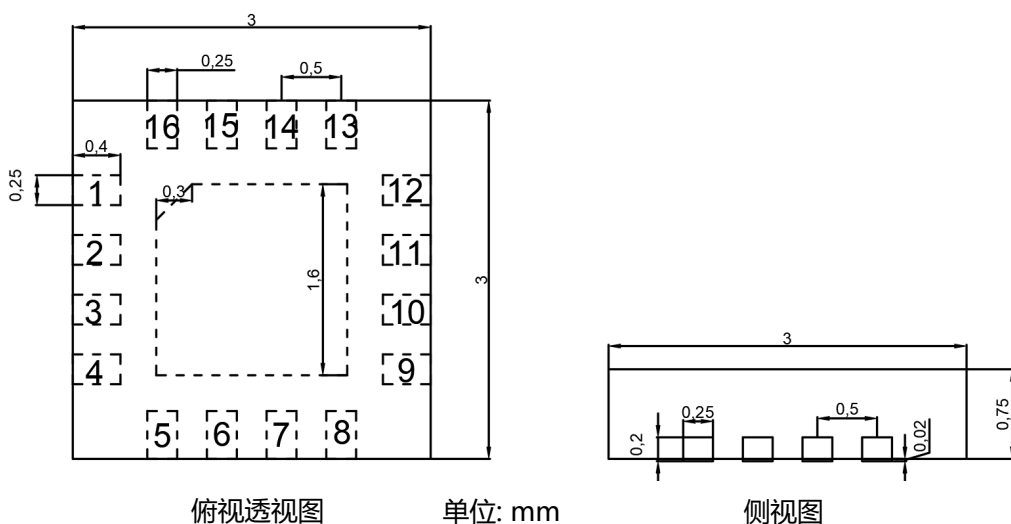
指标	典型值						单位
频率	3.3	3.4	3.5	3.6	3.7	3.8	GHz
小信号增益	10.2	10.8	11.0	11.0	10.5	9.7	dB
三阶交调输出	38.8	38.3	38.5	38.4	39.5	39.8	dBm
1dB压缩点输出功率	29	28.9	28.8	28.6	28.7	28.5	dBm
输入回波损耗	-6.4	-9.3	-15.2	-32.9	-13.7	-8.6	dB
输出回波损耗	-13.3	-12.9	-11.9	-10.7	-9.5	-8.4	dB
静态电流	130						mA

典型测试曲线 (3.3 – 3.8 GHz)





外形尺寸



建议引脚PCB

