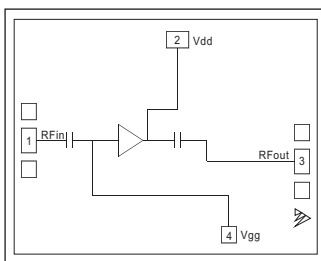


性能特点

- 工作频率：1.2~1.6GHz
- 饱和输出功率：26.5dBm @ $P_{IN} = 4\text{dBm}$
- 小信号增益：30dB @ $V_{dd} = +28\text{V}$,
- 功率增益：23dB @ $P_{IN} = 4\text{dBm}$
- 偏置条件： $V_{dd} = +28\text{V}$, $I_{dq} = 40\text{mA}$, $V_{gg} = -1.8\text{V}$ (典型值)
- 输入/输出阻抗： 50Ω
- 芯片尺寸： $2.15\text{mm} \times 1.55\text{mm} \times 0.08\text{mm}$

功能框图



概述

BW579是一款工作于1.2~1.6GHz的GaN单片集成驱动放大器芯片，在+28V工作电压下，可提供23dB功率增益和26.5dBm饱和输出功率。

该芯片采用了片上通孔金属化工艺保证良好接地，不需要额外的接地措施，使用简单方便。芯片背面进行了金属化处理，适用于共晶烧结或导电胶粘接工艺。

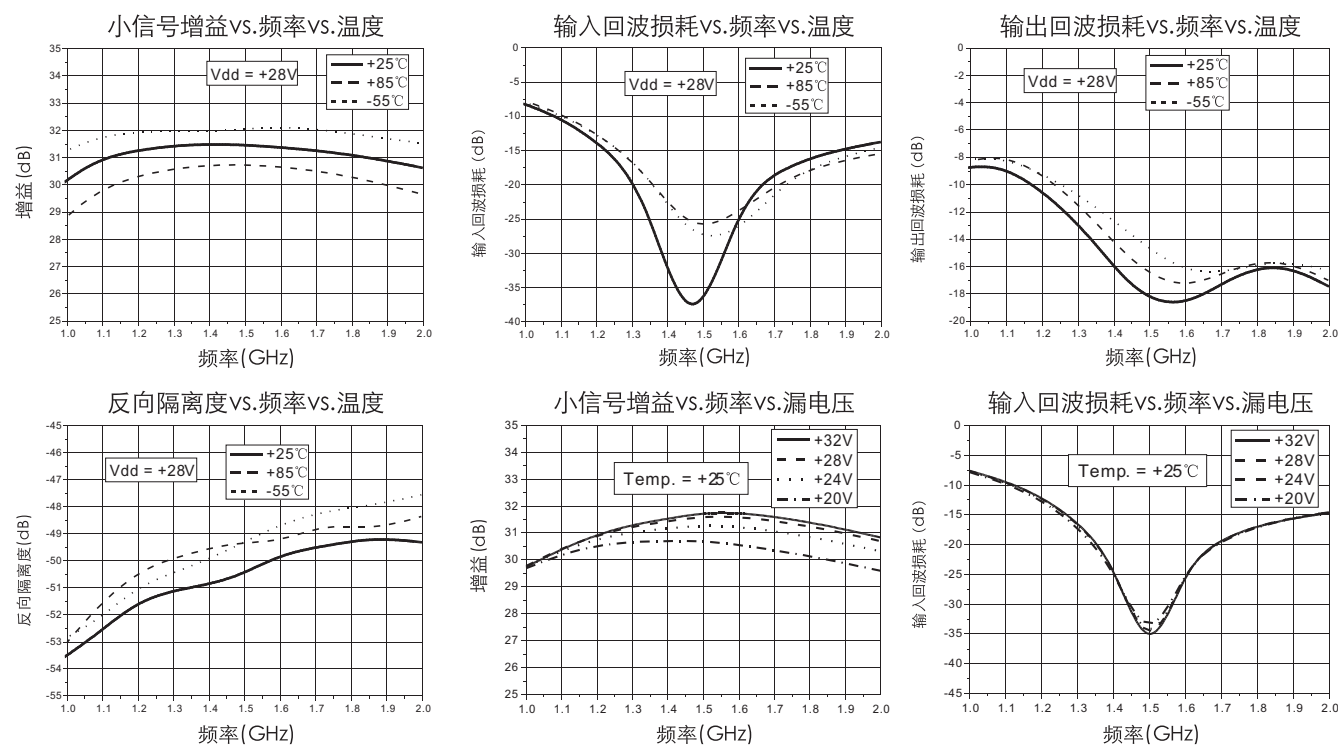
电性能表 ($T_A = +25^\circ\text{C}$, 50Ω system, $V_{dd} = +28\text{V}$, $I_{dq} = 40\text{mA}$, $V_{gg} = -1.8\text{V}$)

符号	参数名称	最小值	典型值	最大值	单位
Frequency	工作频率	1.2		1.6	GHz
Gain	小信号增益	-	30	-	dB
ΔG	增益平坦度		± 1.5		dB
G_p	功率增益($P_{IN} = 4\text{dBm}$)	-	23	-	dB
IRL	输入回波损耗	-	10	-	dB
ORL	输出回波损耗	-	10	-	dB
P_{out}	输出功率($P_{IN} = 4\text{dBm}$)	-	26.5	-	dBm
I_{dd}	工作电流($P_{IN} = 4\text{dBm}$)		80		mA

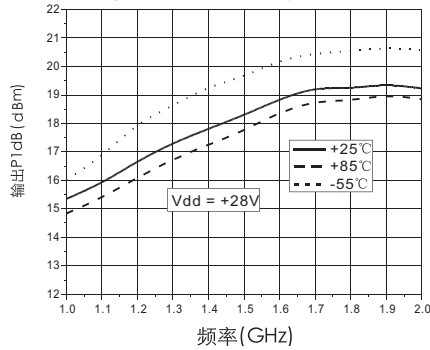
[1] 芯片均经过在片100%直流与RF测试。

[2] 在-3.0V与-1.0V之间调整栅压 V_{gg} ，使静态漏电流 $I_{dq}=40\text{mA}$ 。

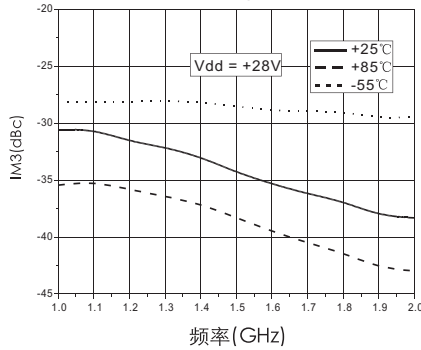
测试曲线(连续波)



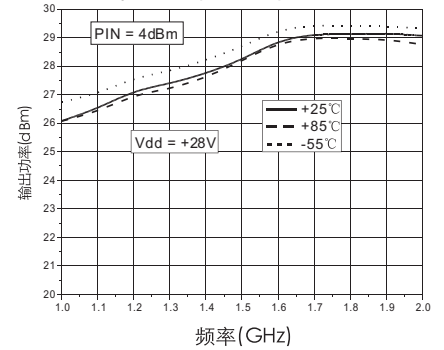
输出P1dB vs.频率vs.温度



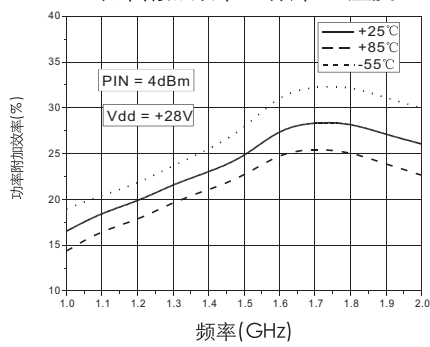
IM3 vs.频率vs.温度



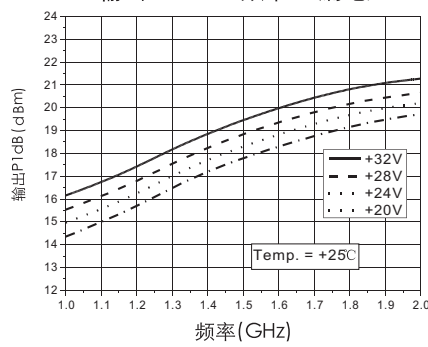
输出功率vs.频率vs.温度



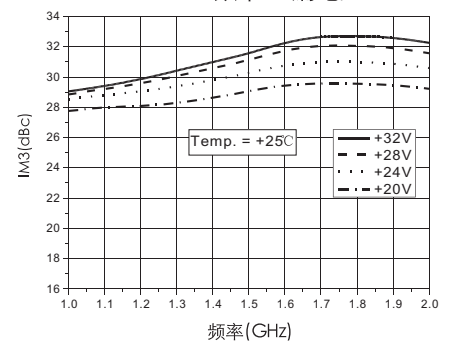
功率附加效率vs.频率vs.温度



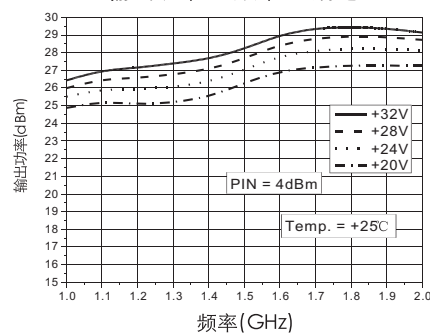
输出P1dB vs.频率vs.漏电压



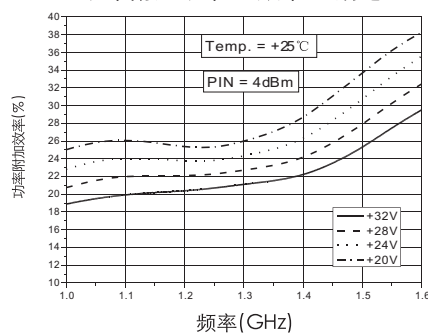
IM3 vs.频率vs.漏电压



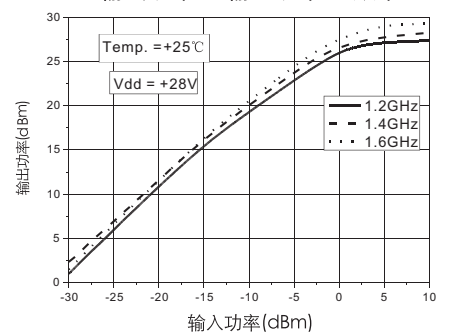
输出功率vs.频率vs.漏电压



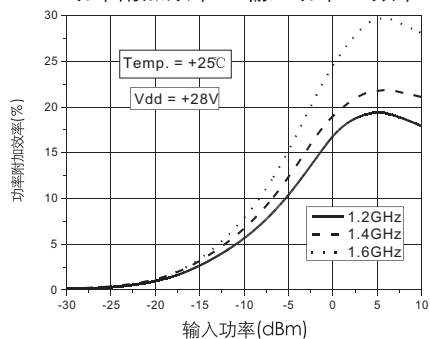
功率附加效率vs.频率vs.漏电压



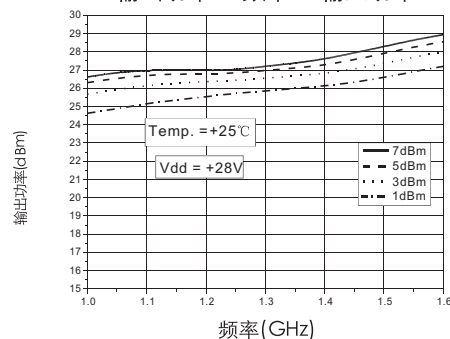
输出功率vs.输入功率vs.频率



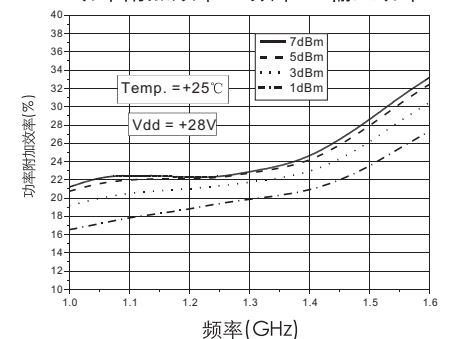
功率附加效率vs.输入功率vs.频率



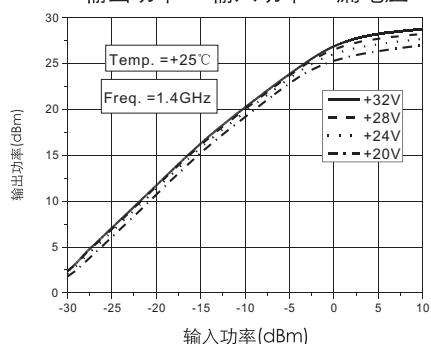
输出功率vs.频率vs.输入功率



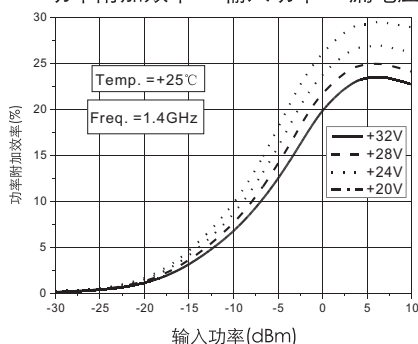
功率附加效率vs.频率vs.输入功率



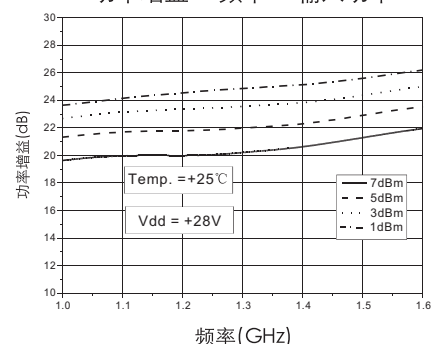
输出功率vs.输入功率vs.漏电压



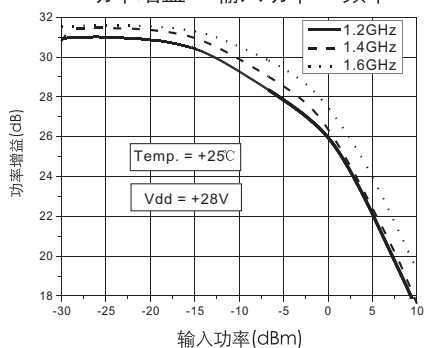
功率附加效率vs.输入功率vs.漏电压



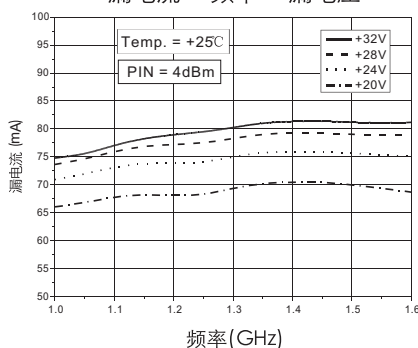
功率增益vs.频率vs.输入功率



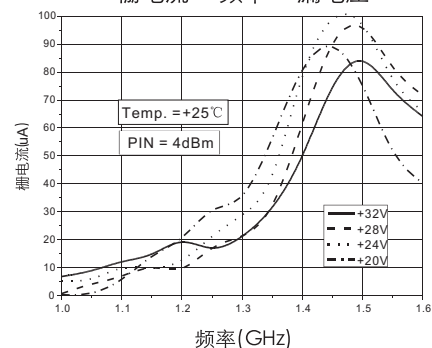
功率增益vs.输入功率vs.频率



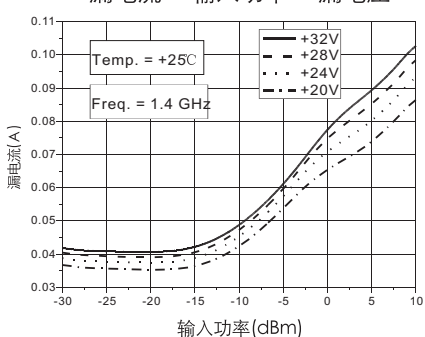
漏电流vs.频率vs.漏电压



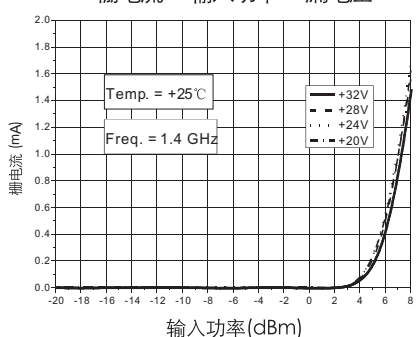
栅电流vs.频率vs.漏电压



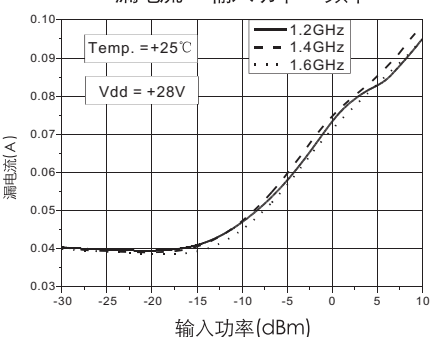
漏电流vs.输入功率vs.漏电压



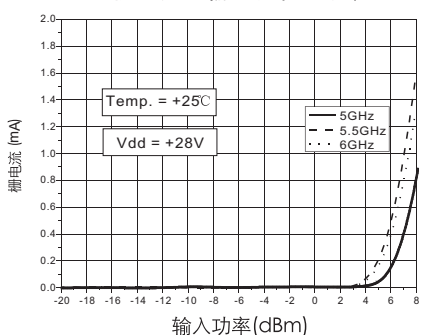
栅电流vs.输入功率vs.漏电压



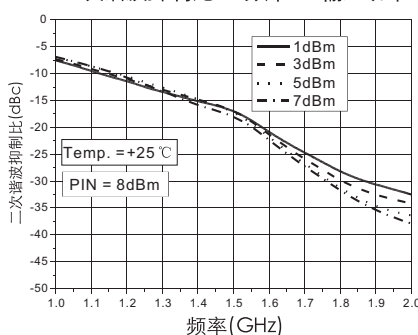
漏电流vs.输入功率vs.频率



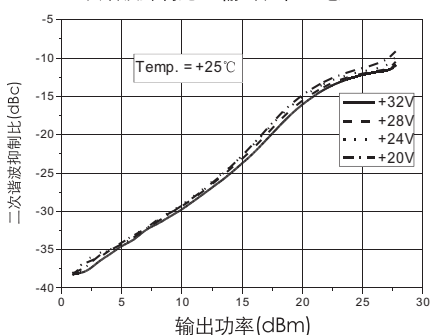
栅电流vs.输入功率vs.频率

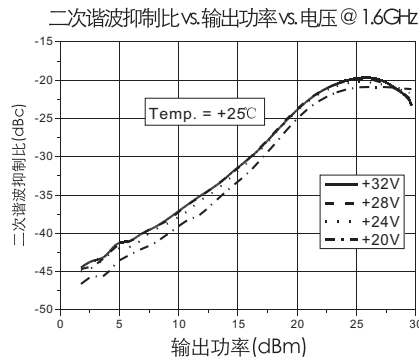
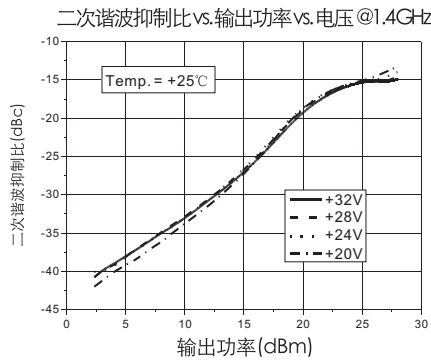


二次谐波抑制比vs.频率vs.输入功率



二次谐波抑制比vs.输出功率vs.电压@1.2GHz





极限参数

参数	数值
输入功率PIN, 50Ω	+15dBm
漏电压Vdd	33V
栅电压Vgg	-6 ~ -1V
沟道温度T _{CH}	225°C
烧结温度 (20秒, N2保护)	300°C
储存温度	-55 ~ +150°C
工作温度	-55 ~ +85°C

超过以上条件可能引起芯片永久性损坏。

推荐工作条件

参数	数值
漏电压Vdd	+28V
静态漏电流Idq	40mA
栅电压Vgg	-1.8V(典型值)

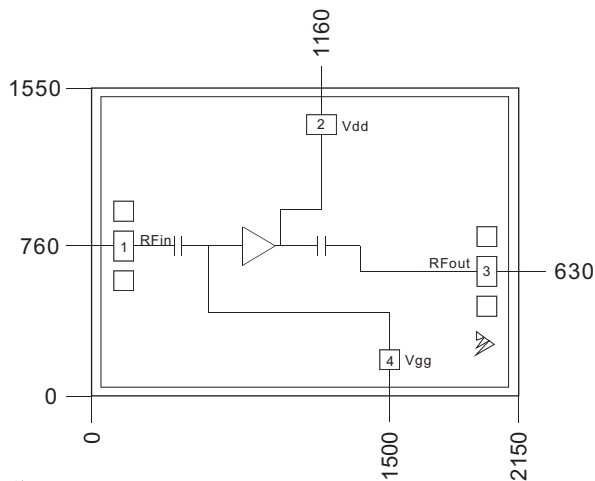


ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

键合压点定义

压点编号	功能符号	功能描述	等效电路
1	RFIN	射频信号输入端, 外接50欧姆系统, 无需隔直电容	
2	Vdd	放大器漏极偏压, 需外置100pF与0.01μF旁路电容	
3	RFOUT	射频信号输出端, 外接50欧姆系统, 无需隔直电容	
4	Vgg	放大器栅极偏压, 需外置100pF和0.01μF旁路电容	
芯片底部	GND	芯片底部与射频及直流地需要良好接触	

外形尺寸



说明:

- 单位: 微米 (μm)
- 芯片背面镀金
- 芯片背面接地
- 键合压点镀金, 压点尺寸: 1、2、3: 150μm × 100μm;
4: 100μm × 100μm
- 不能在通孔上进行键合
- 外形尺寸公差: ± 50μm

应用信息

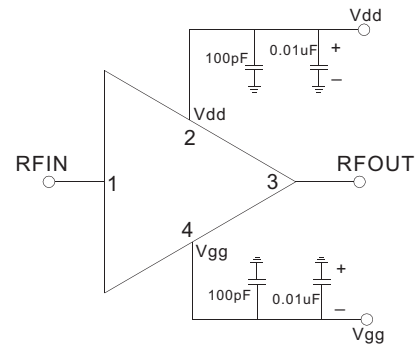
应用电路

上电顺序

- 设置Idq最大值为0.3A
- 栅电压加-3V
- 漏电压加+28V
- 调整栅电压, 使Idq = 40 mA (此时Vgg 约为 -1.8V)
- 加RF输入信号

去电顺序

- 关闭RF输入信号
- 栅电压降至-3V, 确保Idq 接近0mA
- 设置漏电压Vdd值为0V
- 关闭漏电压Vdd
- 关闭栅电压Vgg



● 装配示意图

(滤波电容要离芯片压点尽量近, 尽量减小键合线长度影响)

