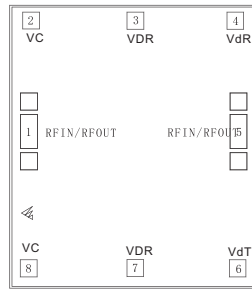


性能特点

- 工作频段：8.0~14.0GHz
- 噪声系数：8.0/5.0dB
- 增益：15dB /6dB
- 增益平坦度：±0.5dB/±0.5dB
- P1dB输出功率：14dBm/11dBm
- 饱和输出功率：15.5dBm/13dBm
- 输出IP3：21dBm/18dBm
- 单电源工作：+5V@45mA/+5V@40mA
- 输入/输出阻抗：50 Ohm
- 芯片尺寸：1.8x2.3x0.07mm

功能框图



概述

BW588是一款工作于8.0-14.0GHz的GaAs单片集成双向放大器芯片，发射路在+5V、45mA工作电流下，可提供15dB的增益和14dBm的P1dB输出功率；接收路在+5V、40mA工作电流下，可提供6dB增益和11dBm以上的P1dB输出功率。

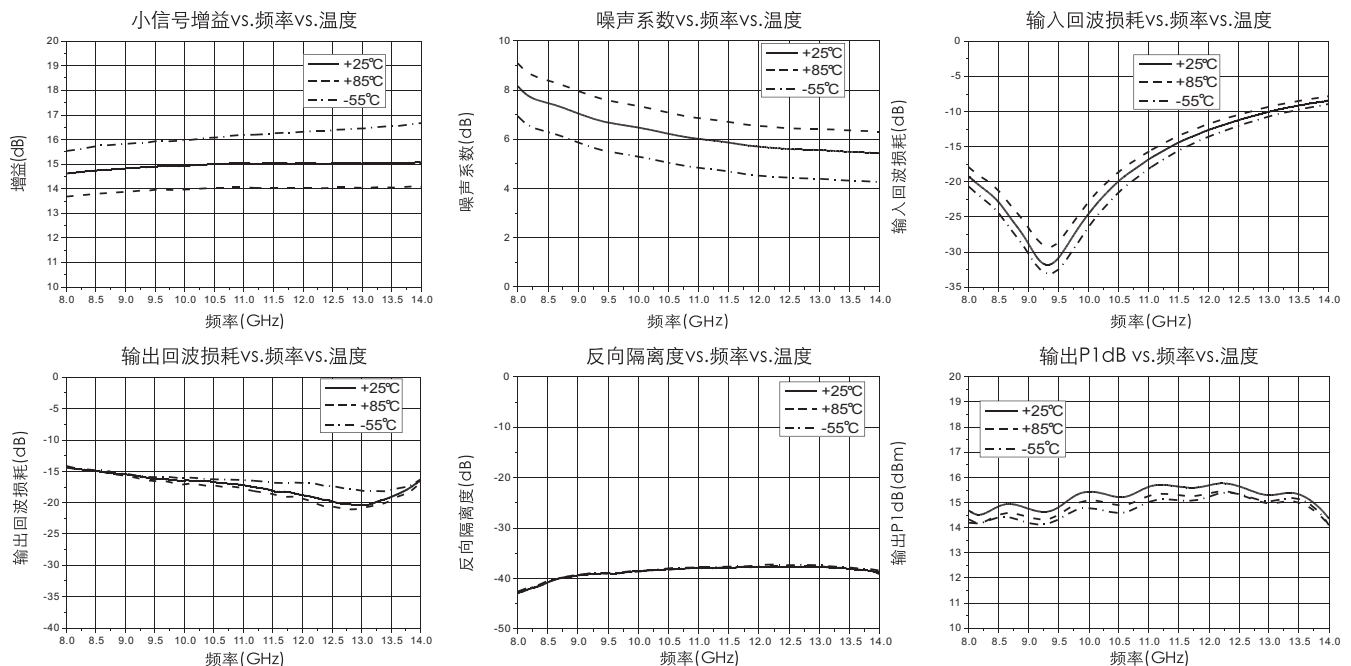
该双向放大器芯片采用了片上通孔金属化工艺保证良好接地，不需要额外的接地措施，使用简单方便。芯片背面进行了金属化处理，适用于共晶烧结或导电胶粘接工艺。

电性能表 (TA=+25℃, 50Ωsystem, Vdd=+5V, Idd=45mA/40mA)

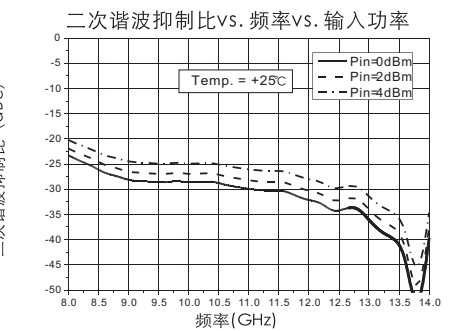
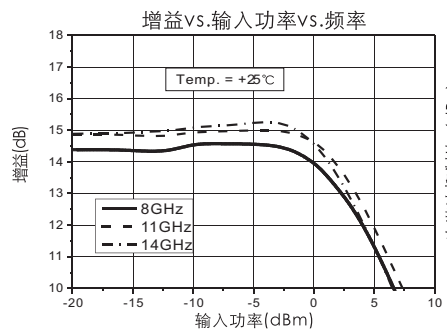
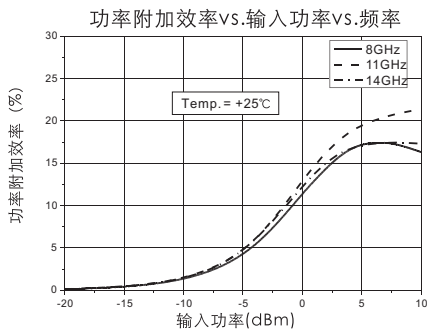
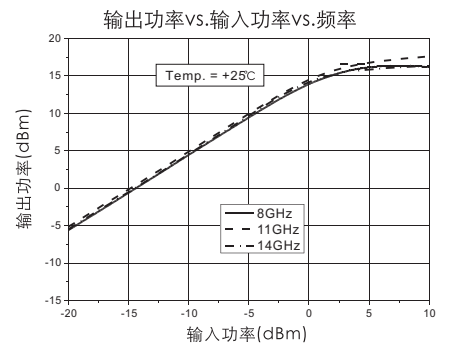
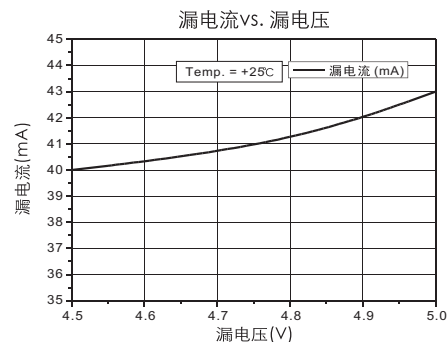
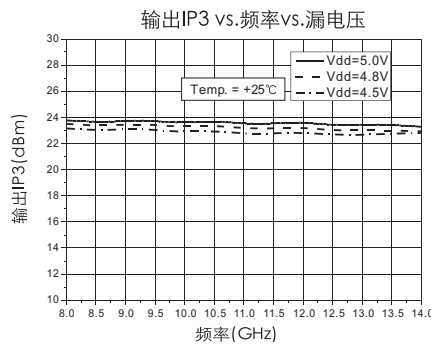
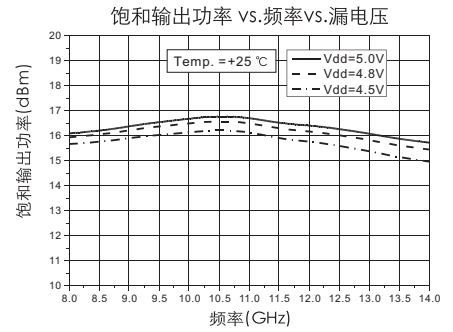
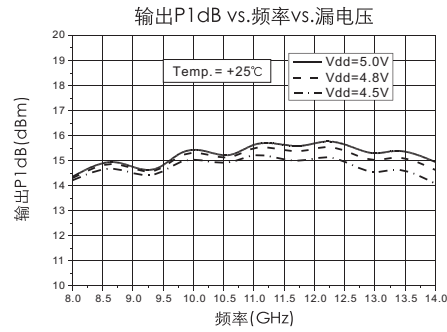
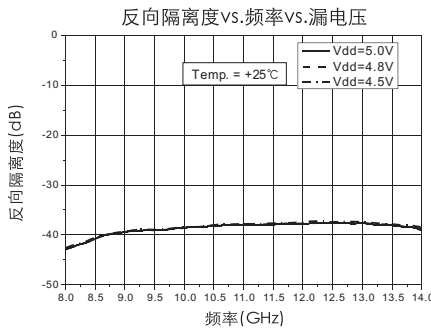
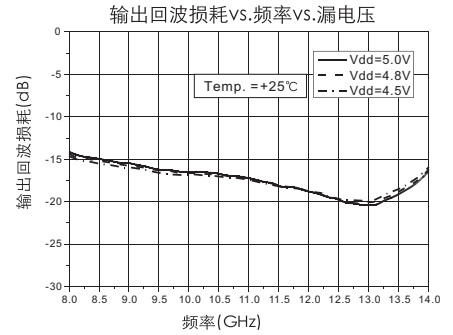
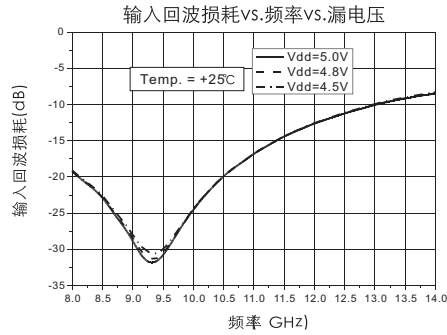
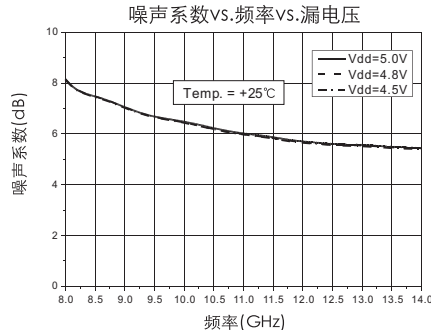
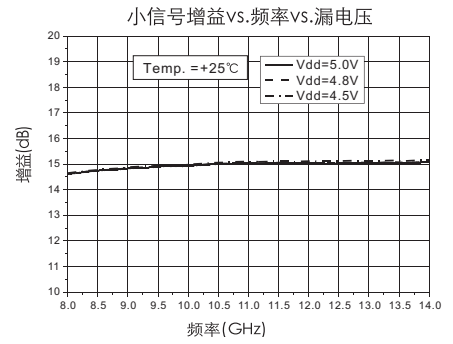
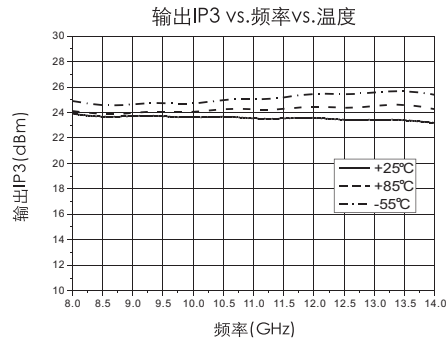
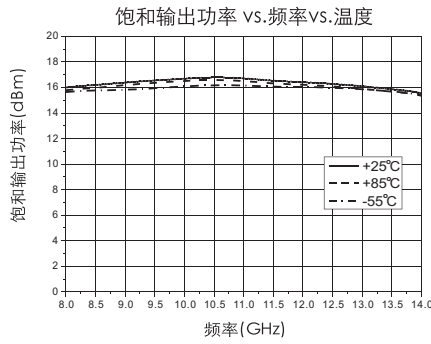
符号	参数	最小值	典型值	最大值	单位
Frequency	工作频率	8.0	-	14.0	GHz
Gain	增益	-	15dB /6dB	-	dB
ΔG	增益平坦度	±0.5dB/±0.5dB			dB
NF	噪声系数	-	8/5	-	dB
IRL	输入回波损耗	-	8/15	-	dB
ORL	输出回波损耗	-	15/15	-	dB
P1dB	1dB压缩点输出功率	-	14/11	-	dBm
Psat	饱和输出功率	-	15.5/13	-	dBm
OIP3	三阶交调点输出功率	-	21/18	-	dBm
Idd	工作电流	-	45/40	-	mA

芯片均经过在片100%直流与RF测试

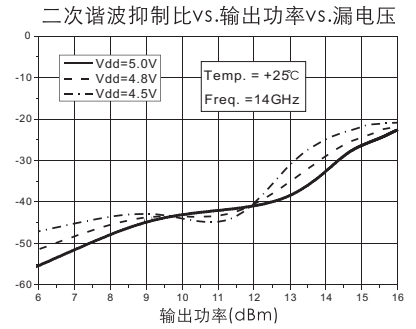
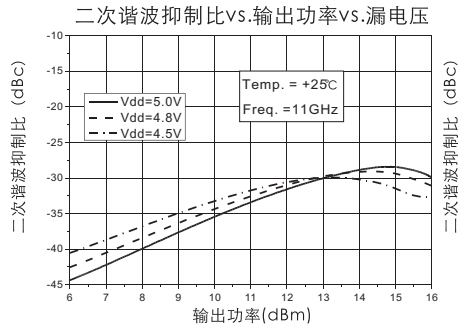
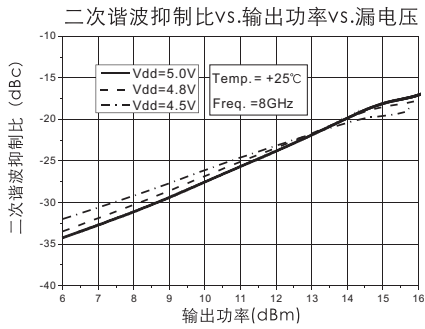
测试曲线(发射路)



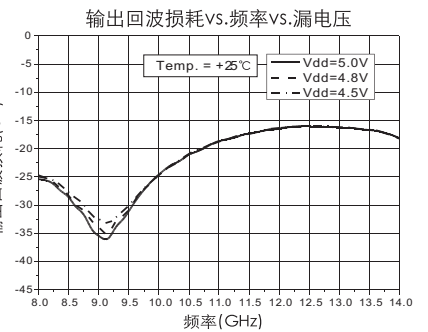
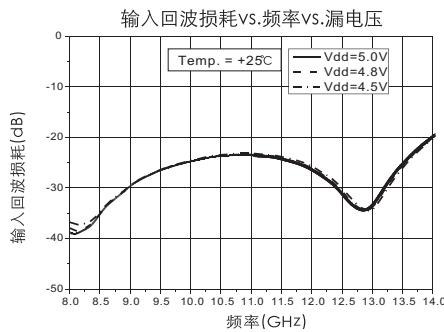
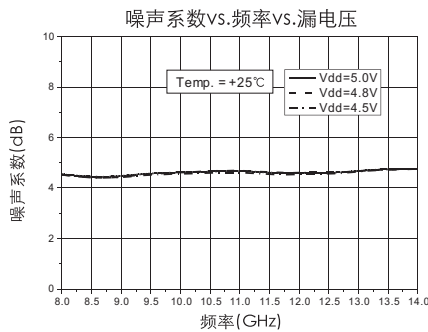
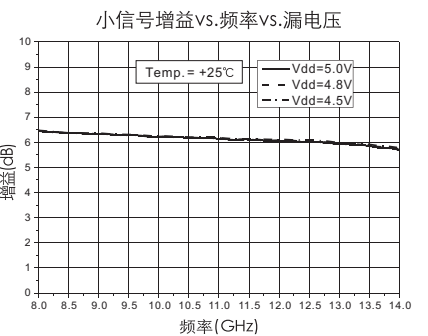
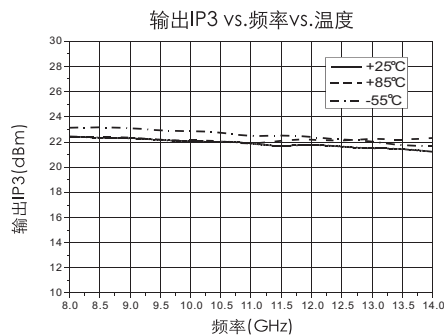
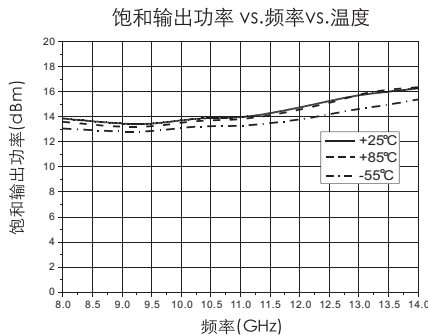
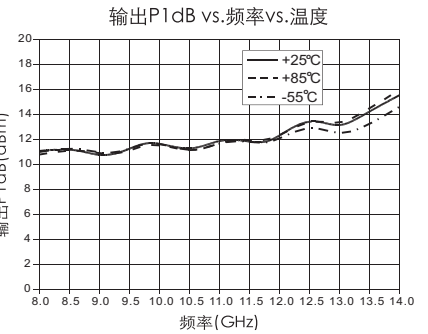
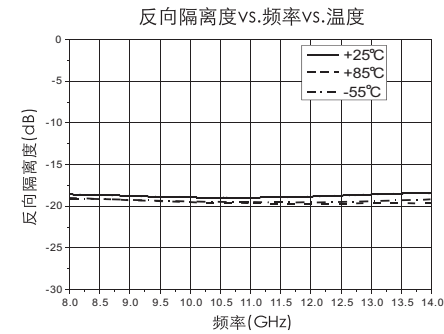
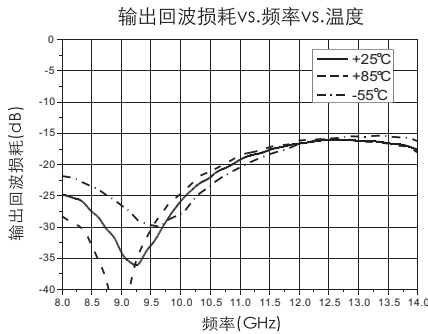
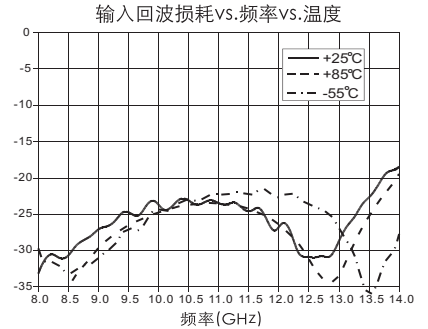
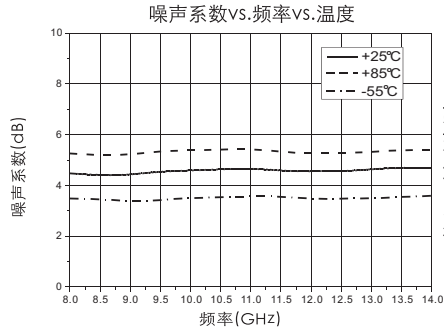
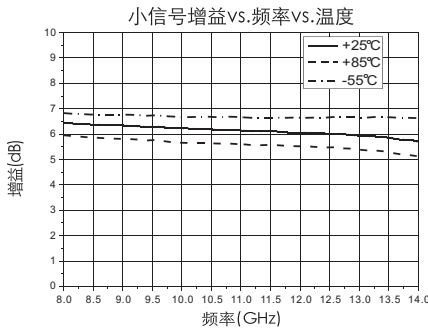
BW588型GaAs单片集成双向放大器



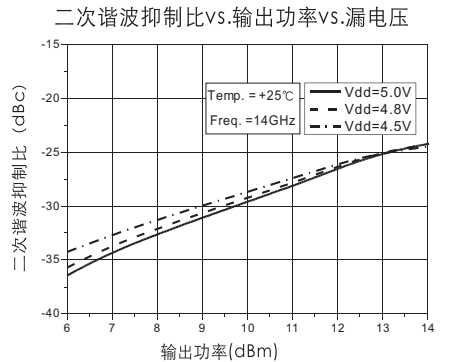
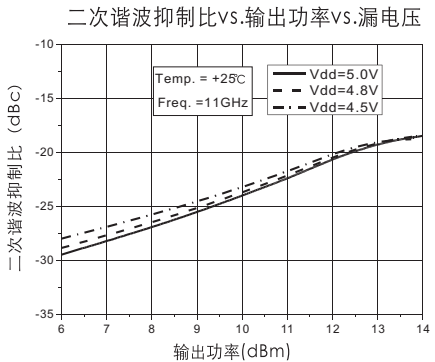
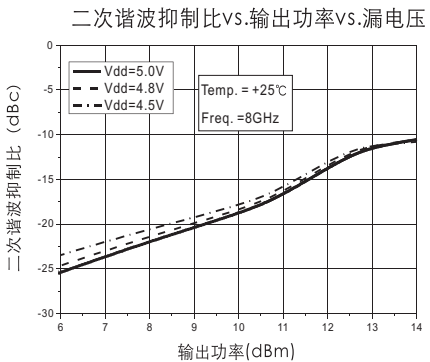
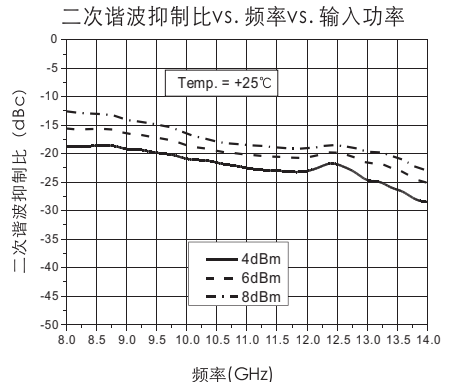
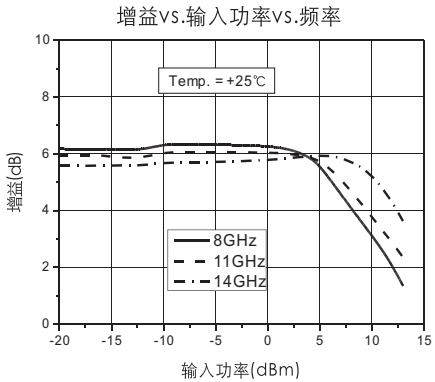
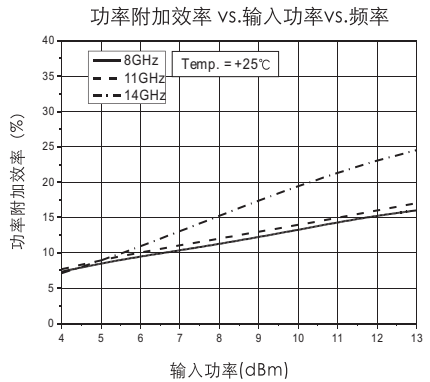
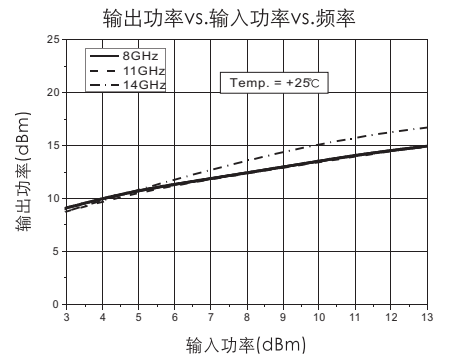
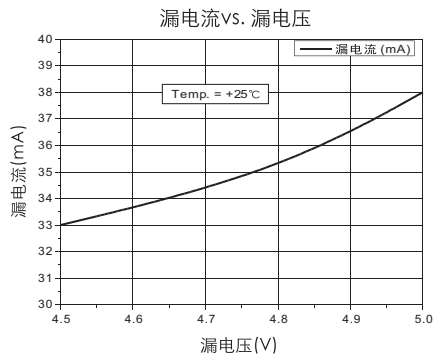
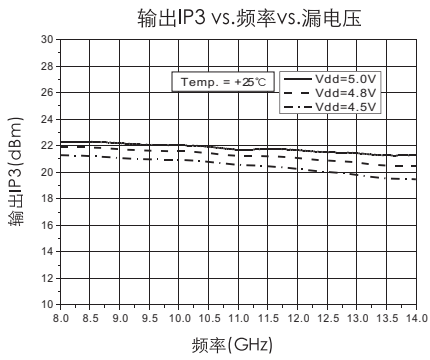
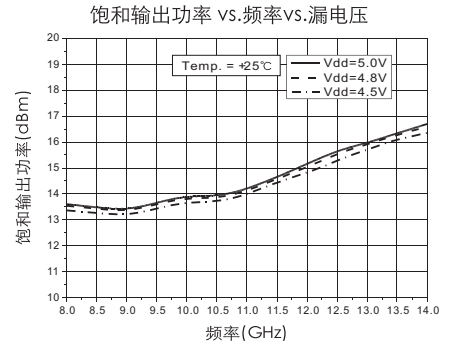
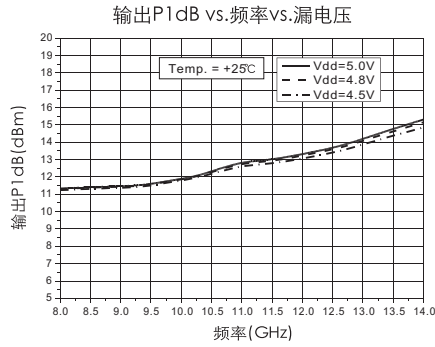
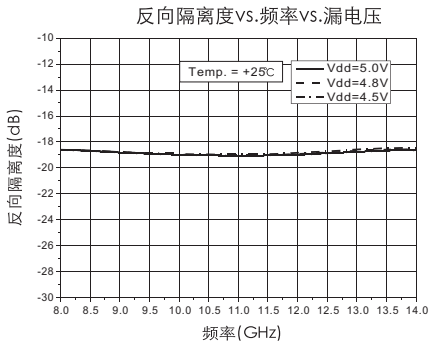
BW588型GaAs单片集成双向放大器



测试曲线(接收路)



BW588型GaAs单片集成双向放大器

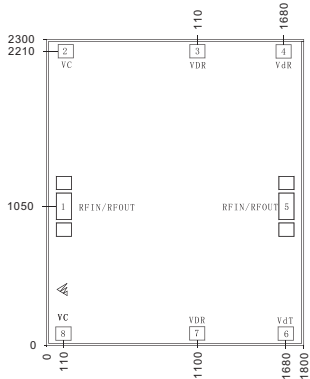


BW588型GaAs单片集成双向放大器

键合压点定义

压点编号	功能符号	功能描述	等效电路
1	RFIN/RFOUT	射频输入/输出压点，可以通过控制压点的逻辑电平控制输入/输出端口切换，射频通路不是0V，需外接隔直电容	-
2, 8	VC	控制压点，2个压点内部相连，控制时选择任一压点即可	
3, 7	VDR	驱动器所需电压，接-5V电源	-
4	VdR	接收路放大器漏偏压，需外置100pF旁路电容	-
5	RFOUT/RFIN	射频输入/输出压点，可以通过控制压点的逻辑电平控制输入/输出端口切换，射频通路不是0V，需外接隔直电容	-
6	VdT	发射路放大器漏偏压，需外置100pF旁路电容	
芯片背面	GND	芯片底部与射频及直流地需要良好接触	

外形尺寸

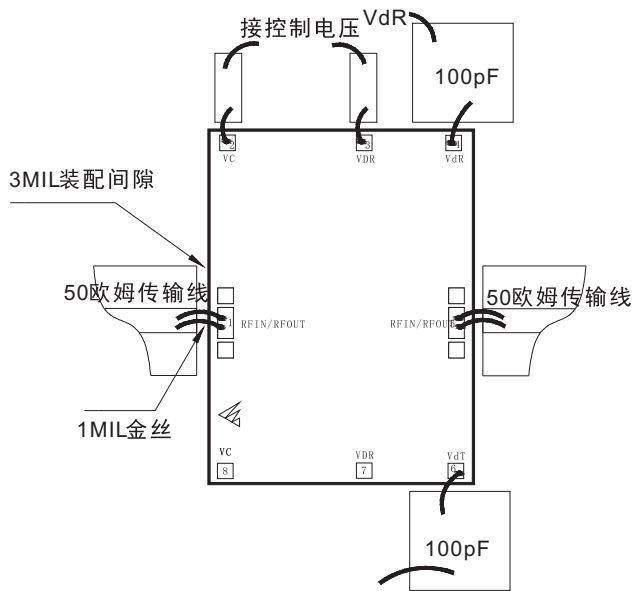


说明:

- 1.单位: 微米 2.芯片背面镀金 3.芯片背面接地
4.键合压点镀金, 压点尺寸: 1、5: 200umx100um;
2~4、6~8: 100umx100um
5.不能在通孔上进行键合 6.外形尺寸公差: ±50um

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)



极限参数

参数	数值
输入功率PIN, 50Ω	+15dBm
漏电压Vdd	+6V
热阻Rth	80° C/W
沟道温度TCH	175℃
烧结温度(20秒, N2保护)	320℃
储存温度	-55 ~ +150℃
工作温度	-55 ~ +125℃

超过以上条件可能引起芯片永久性损坏。



真值表

VDR	VdT	VC	VdR	放大状态
-5V	0V	0	-5V	正向放大 (1→5)
-5V	+5V	+5	0V	反向放大 (5→1)

应用电路

