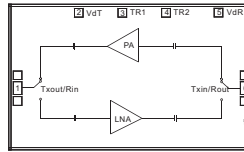


性能特点

- 工作频段: 14~18GHz
- 噪声系数: 4.0dB(接收路)/9.0dB(发射路)
- 增益: 12.5dB(接收路)/24dB (发射路)
- 增益平坦度: ± 1.5 dB
- P1dB输出功率: 7dBm(接收路)/23dBm (发射路)
- 饱和输出功率: 9dBm(接收路)/23.5dBm (发射路)
- 输出IP3: 17dBm(接收路)/31dBm (发射路)
- 工作电压: +5V@22mA(接收路)
/+5V@195mA (发射路)
- 输入/输出阻抗: 50 Ohm
- 芯片尺寸: 2.8x1.7x0.07mm

功能框图



概述

BW3195是一款工作于14~18GHz的GaAs单片集成双向放大器芯片，接收路在+5V、22mA工作电流下，可提供12.5dB增益，7dBm的P1dB输出功率，发射路在+5V、195mA工作电流下，可提供24dB增益，23dBm的P1dB输出功率。

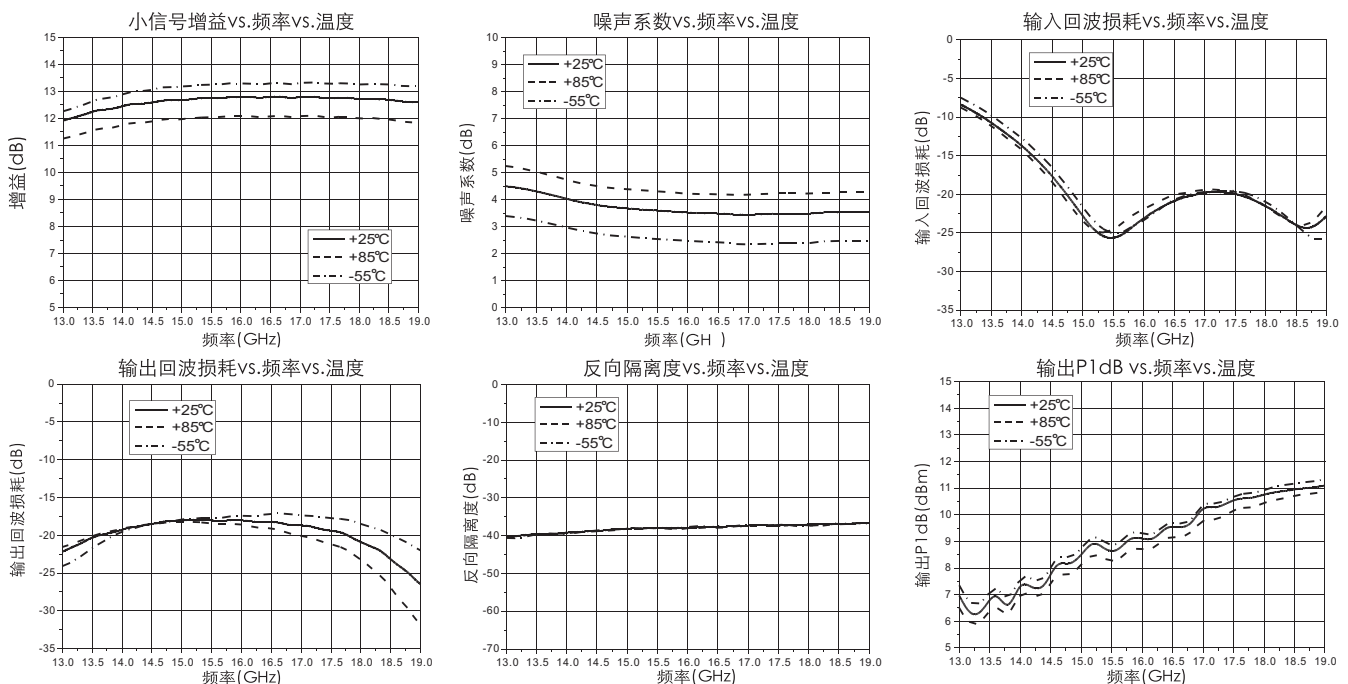
该芯片采用了片上通孔金属化工艺保证良好接地，不需要额外的接地措施，使用简单方便。芯片背面进行了金属化处理，适用于共晶烧结或导电胶粘接工艺。

电性能表 (TA = +25°C, 50Ω system, Vdd = 5V, Idq = 195mA (发射路) / 22mA (接收路))

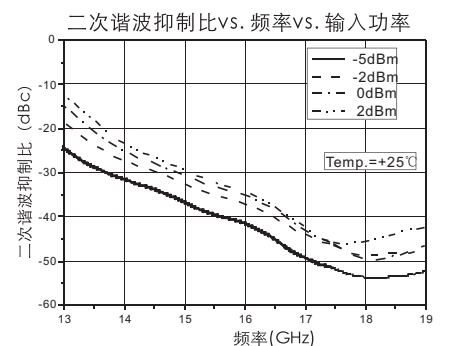
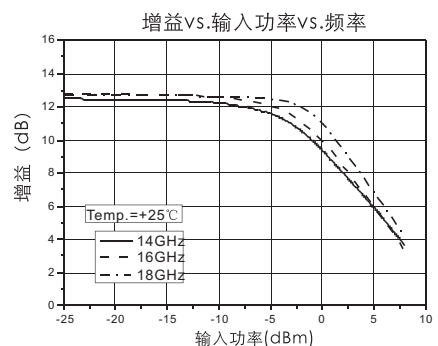
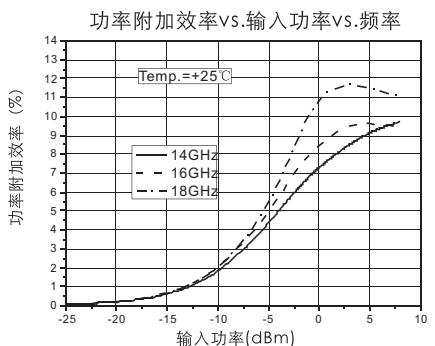
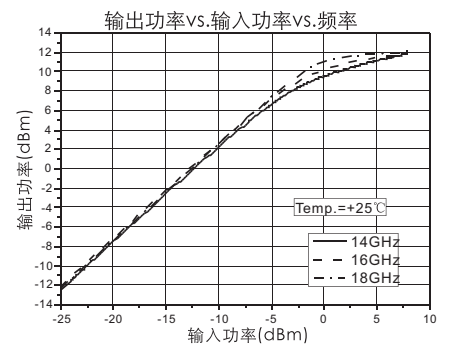
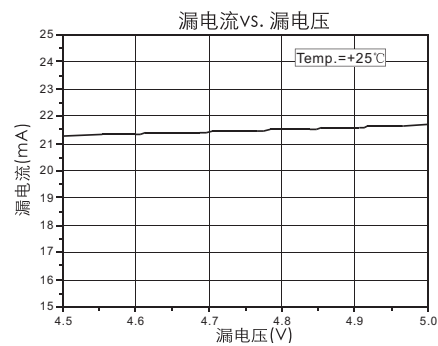
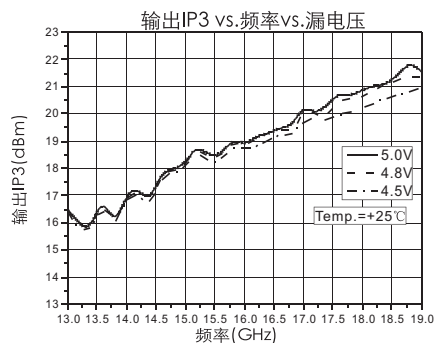
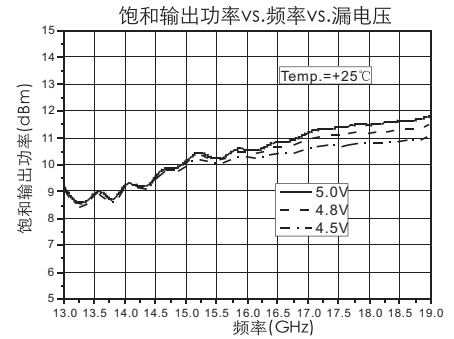
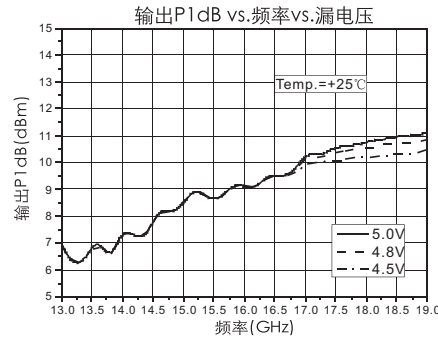
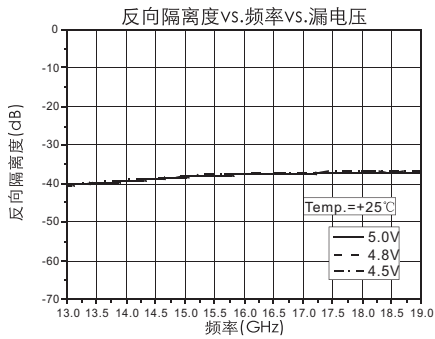
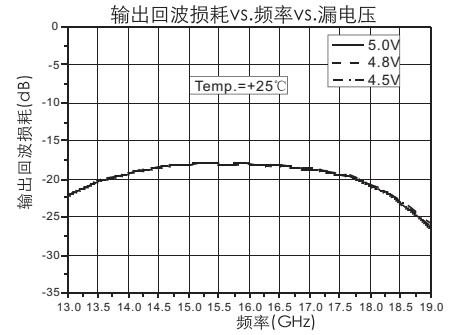
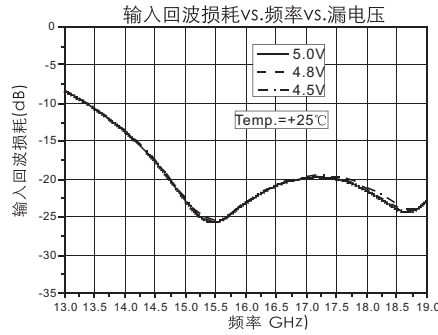
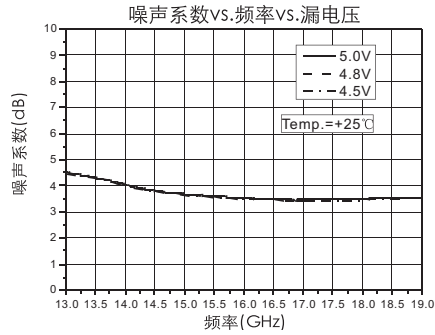
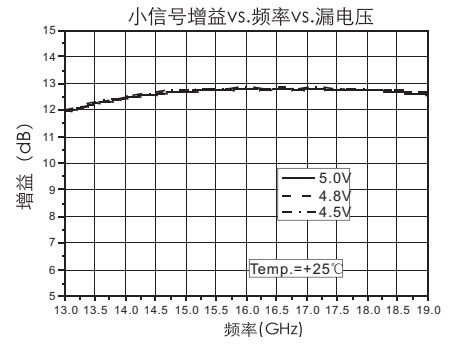
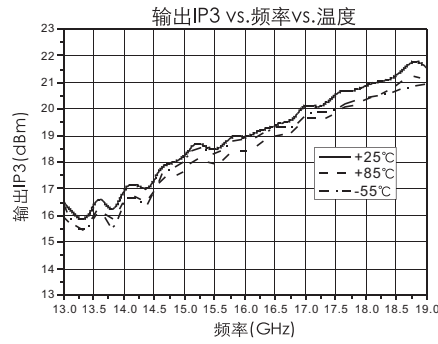
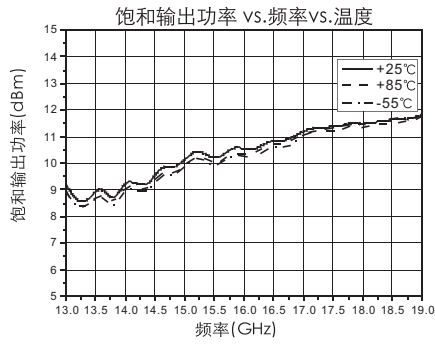
符号	参数	最小值	典型值(接收/发射)	最大值	单位
Frequency	工作频率	14	-	18	GHz
Gain	增益	-	12.5/25	-	dB
ΔG	增益平坦度	± 1.5			dB
NF	噪声系数	-	4.0/9.0	-	dB
IRL	输入回波损耗	-	15/15	-	dB
ORL	输出回波损耗	-	17/15	-	dB
P1dB	1dB压缩点输出功率	-	7/23	-	dBm
Psat	饱和输出功率	-	9/23.5	-	dBm
OIP3	输出IP3	-	17/31	-	dBm
Idd	工作电流	-	22/230	-	mA

芯片均经过在片100%直流与RF测试

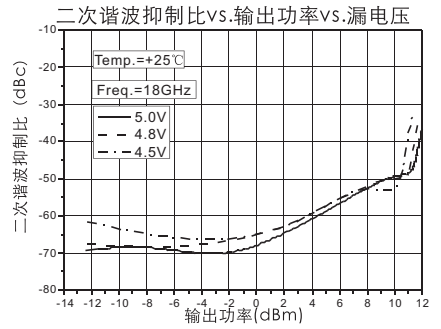
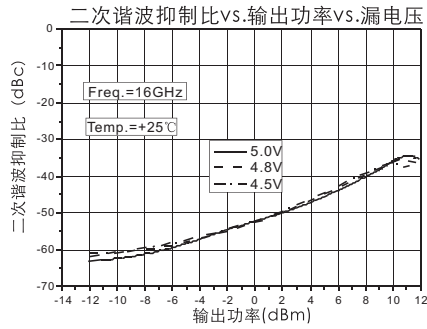
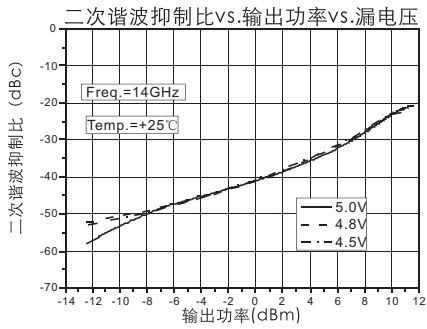
测试曲线(接收路: 端口1→6)



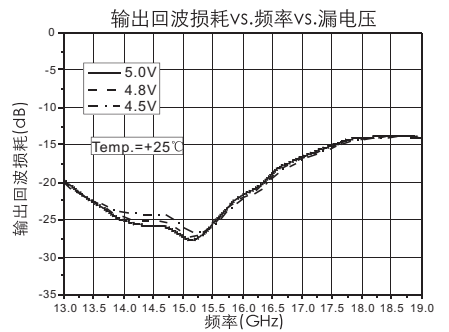
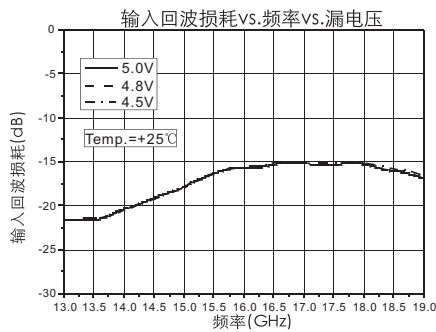
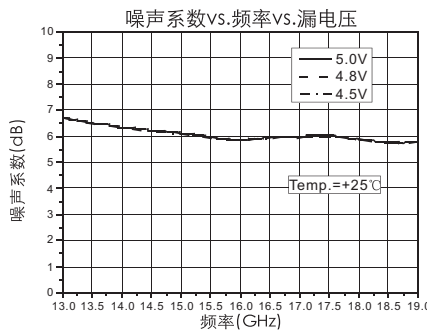
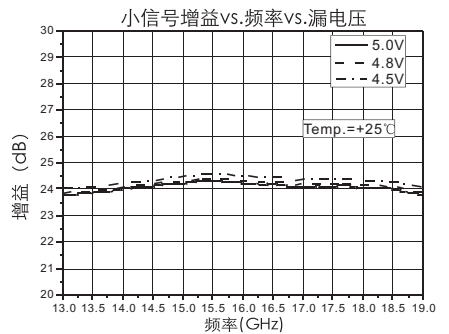
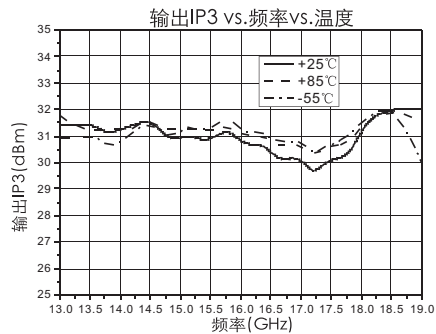
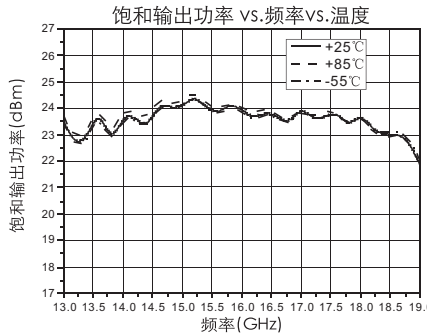
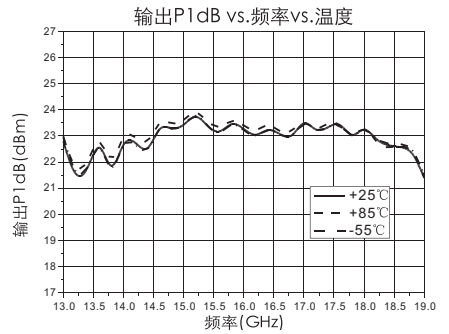
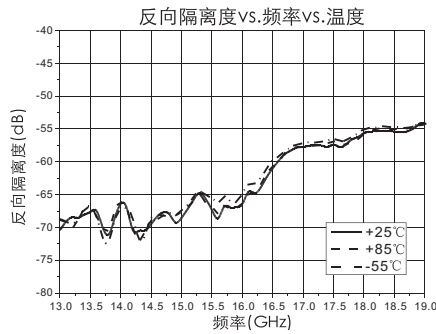
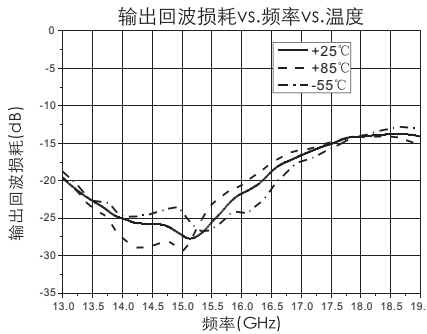
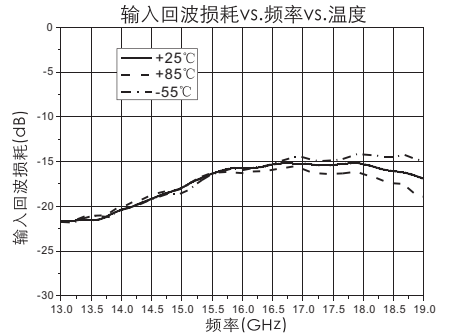
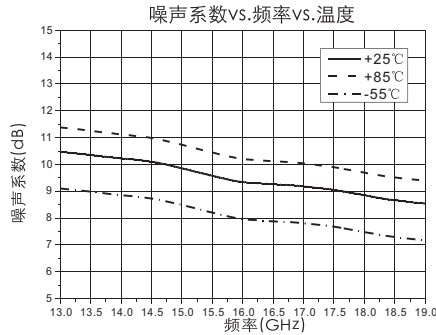
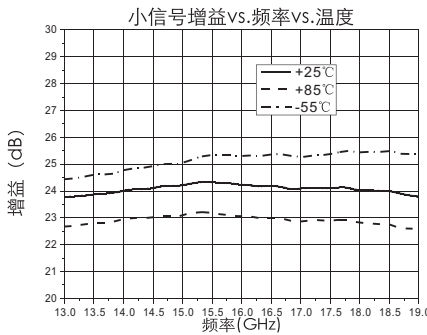
BW3195型GaAs双向放大器芯片



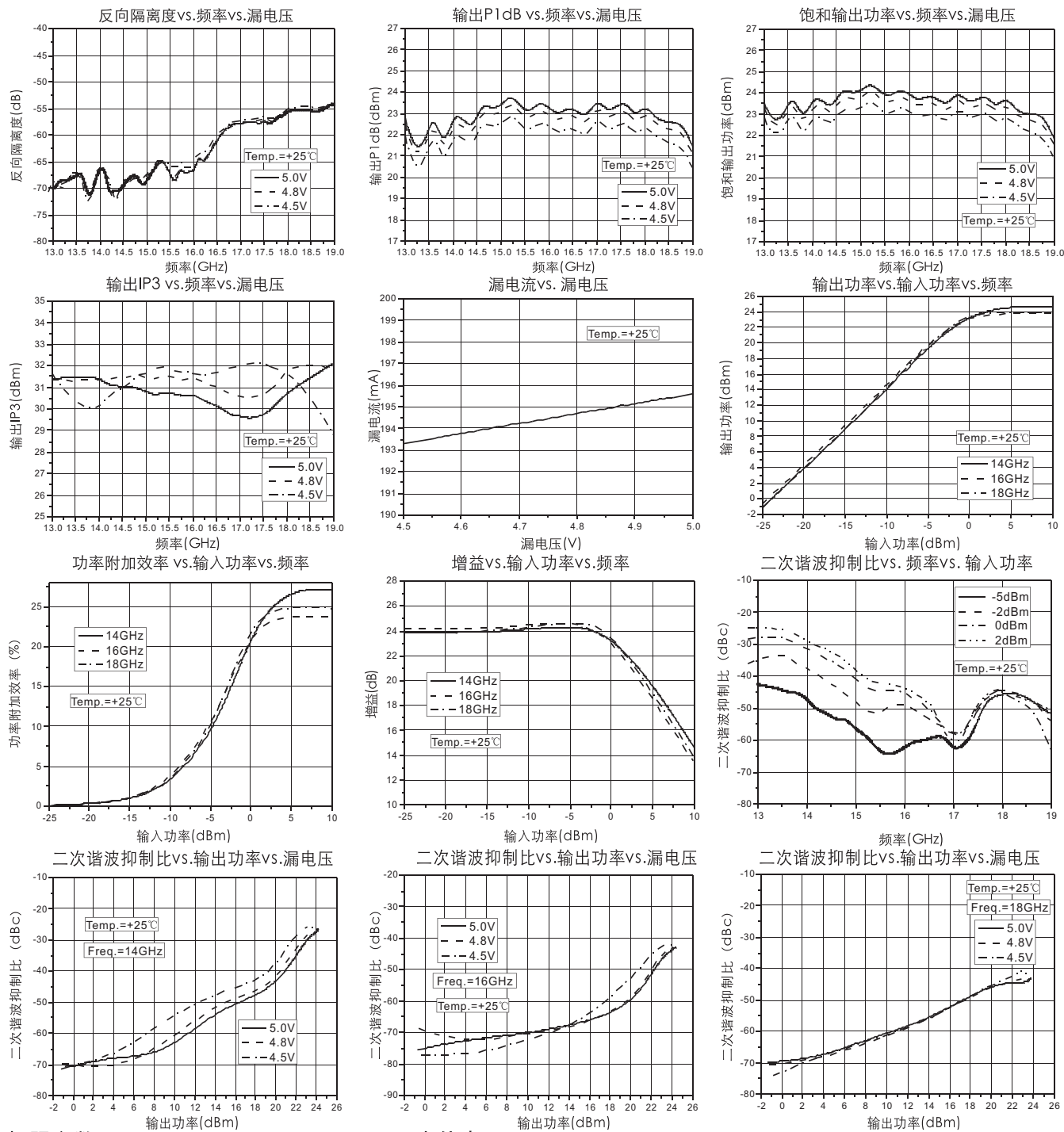
BW3195型GaAs双向放大器芯片



测试曲线(发射路: 端口6→1)



BW3195型GaAs双向放大器芯片



极限参数

参数	数值
输入功率PIN, 50Ω	+10dBm
漏电压Vdd	+6V
热阻Rth	40℃/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

VdT	TR1	TR2	VdR	放大状态
NC	-5V	0V	-5V	接收路 (1→6)
-5V	0V	-5V	NC	发射路 (6→1)



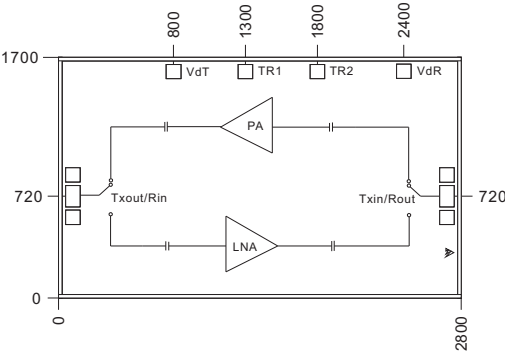
ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

BW3195型GaAs双向放大器芯片

键合压点定义

压点编号	功能符号	功能描述	等效电路
1	Txout/Rin	发射路射频输出/接收路输入压点，可以通过控制压点的逻辑电平控制输入/输出端口切换，若射频通路电位不是0V，需外接隔直电容。	-
2	VdT	发射路放大器漏偏压，需外置100pF和1000pF旁路电容	
3、4	TR1、TR2	收发控制压点，0/-5V	-
5	VdR	接收路放大器漏偏压，需外置100pF和1000pF旁路电容	
6	Txin/Rout	发射路射频输入/接收路输出压点，可以通过控制压点的逻辑电平控制输出/输入端口切换，若射频通路电位不是0V，需外接隔直电容。	-
芯片背面	GND	芯片底部与射频及直流地需要良好接触	

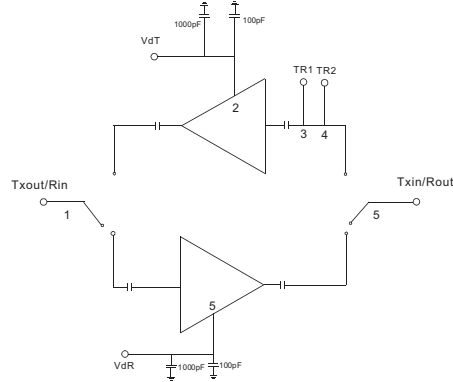
外形尺寸



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、6：150umx100um；2、3、4、5：100umx100um；
5.不能在通孔上进行键合 6.外形尺寸公差：±50um

应用信息

应用电路



装配示意图

