

产品介绍

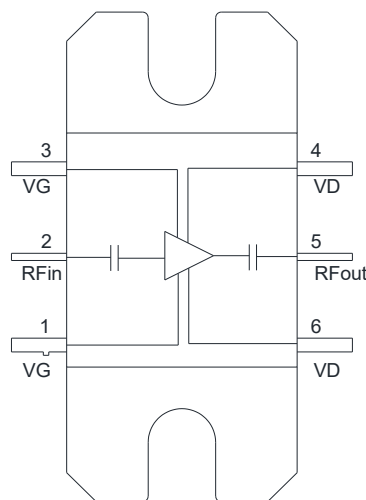
YGPA150-0207A1T 是一款性能优良的 GaN 功率放大器芯片，频率范围覆盖 2~6.5GHz，可在脉冲和连续波模式下使用。脉冲模式下，VD =+28V，VG=-2.6V 时，小信号增益典型值 24dB，饱和输出功率典型值 45.5dBm，饱和功率附加效率典型值 41%。

该功率放大器采用金属管壳密封封装，引脚焊盘表面采用镀金工艺处理，适用于回流焊安装工艺。

关键技术指标

- 频率范围：2-6.5GHz
- 小信号增益（Pulse）：24dB
- 饱和输出功率（Pulse）：45.5dBm
- 饱和功率附加效率（Pulse）：41%
- 饱和功率增益（Pulse）：14dB
- 输入回波损耗（Pulse）：17dB
- 静态工作电流（Pulse）：1.26A @+28V
- 芯片尺寸：17.78mm × 8.33mm × 2.02mm

功能框图



电性能表（TA=+25℃，VD =+28V，VG=-2.6V，Pulse 模式测试条件：100us/1ms）

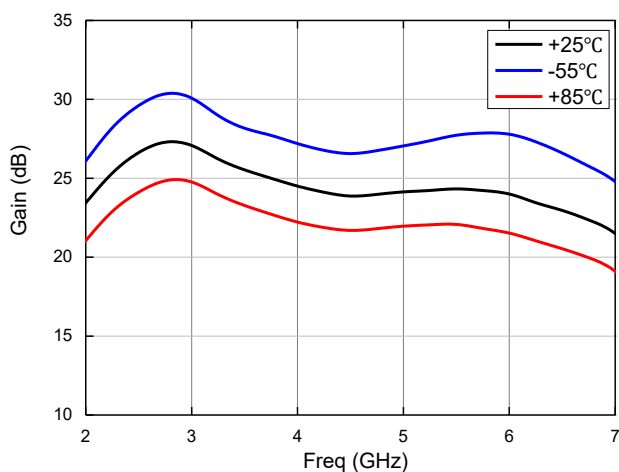
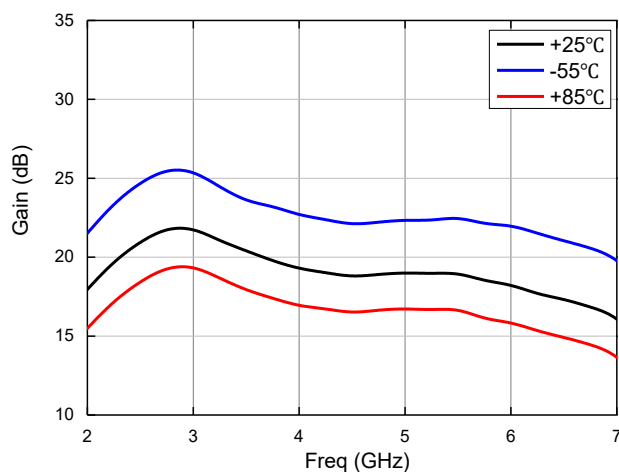
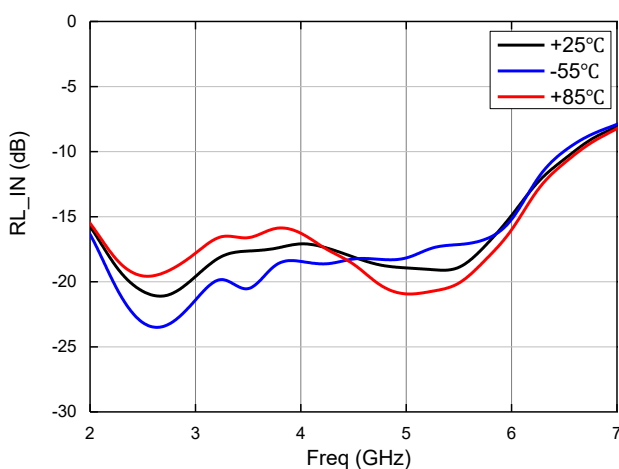
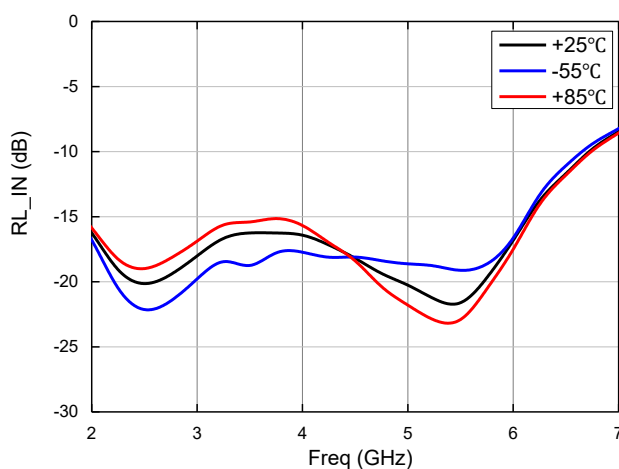
参数名称	符号	Pulse模式			CW模式			单位
		最小值	典型值	最大值	最小值	典型值	最大值	
频率范围	Freq	2	—	6.5	2	—	6.5	GHz
小信号增益	Gain	22	24	—	17	19	—	dB
输入回波损耗	RL_IN	10	17	—	10	17	—	dB
输出1dB压缩功率	OP1dB	37	37.5	—	38.5	39.5	—	dBm
饱和输出功率	Psat	44	45.5	—	43.5	44.5	—	dBm
饱和功率附加效率	PAE	35	41	—	25	33	—	%
饱和功率增益	Gp	—	14	—	—	11	—	dB
饱和动态工作电流	IDD	—	3.2	3.7	—	2.8	3.1	A
饱和输出时输入功率	Pin	28	31	—	—	34	—	dBm
静态工作电流*	IDQ	—	1.26	—	—	1.26	—	A
输出三阶交调功率	OIP3	—	—	—	46.5	47.5	—	dBm

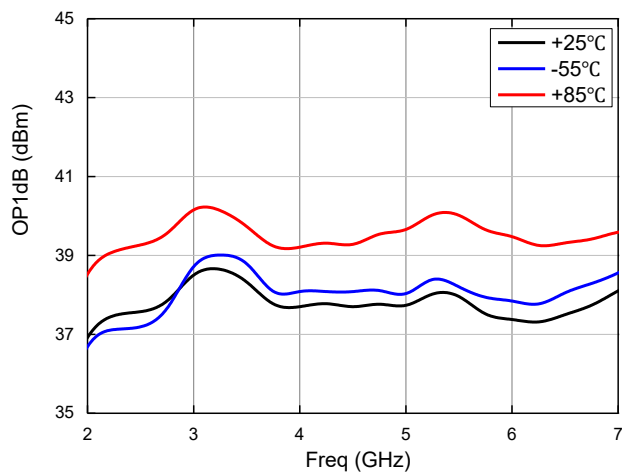
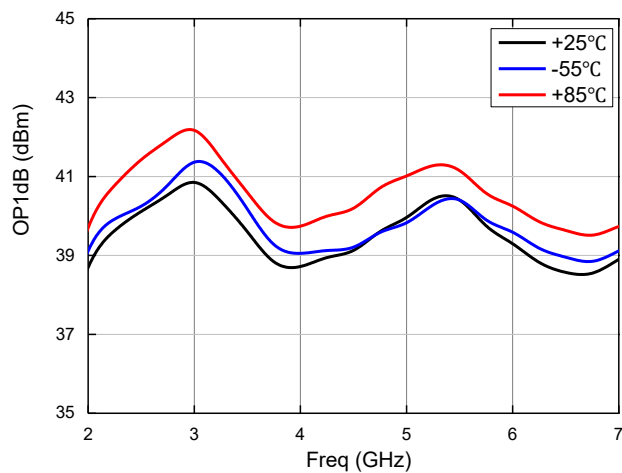
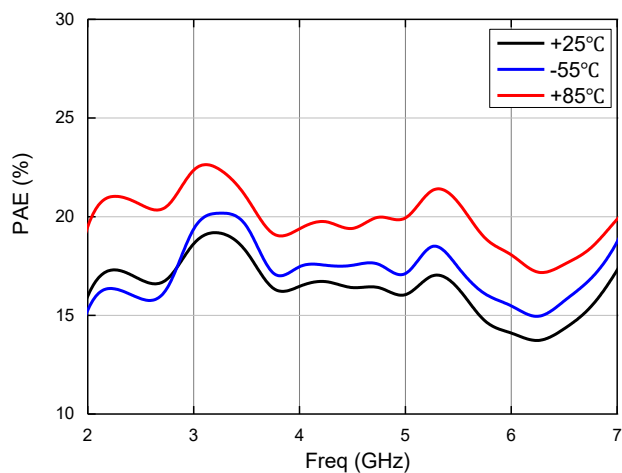
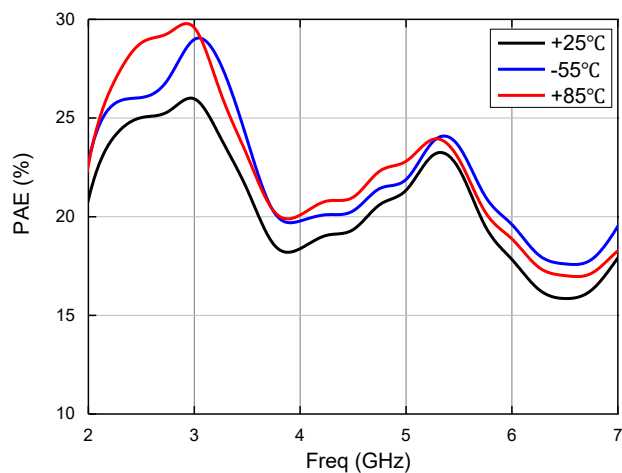
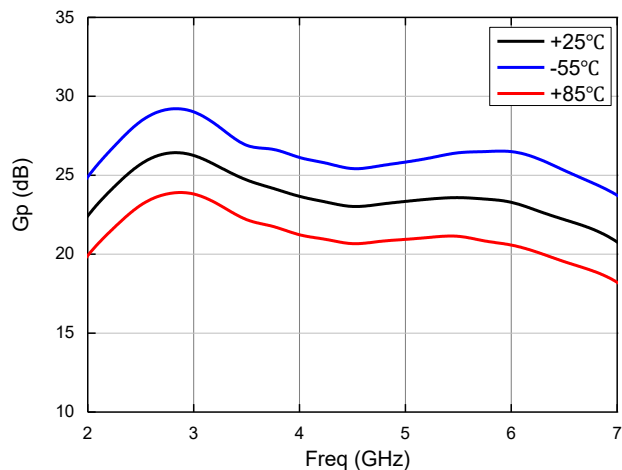
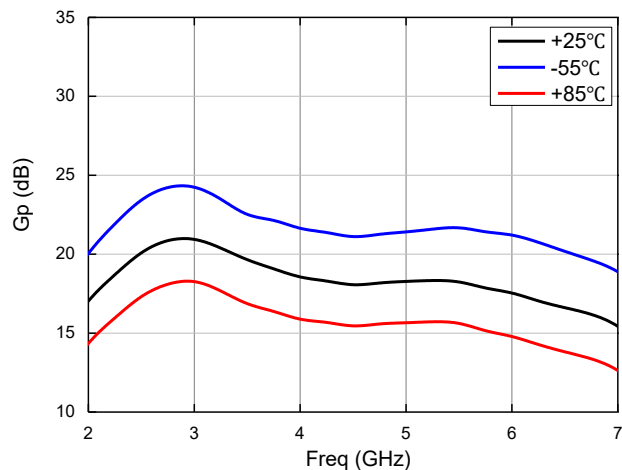
*在-3V~-2V范围内调节VG，使静态工作电流为1.26A for Pulse，VG参考值：-2.6V for Pulse；使静态工作电流为1.26A for CW，VG参考值：-2.6V for CW。

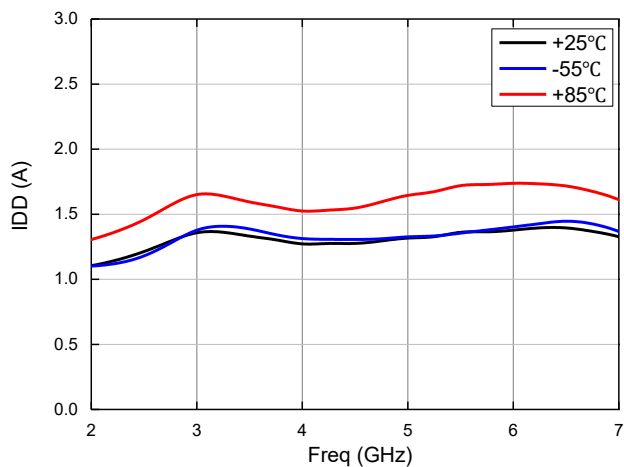
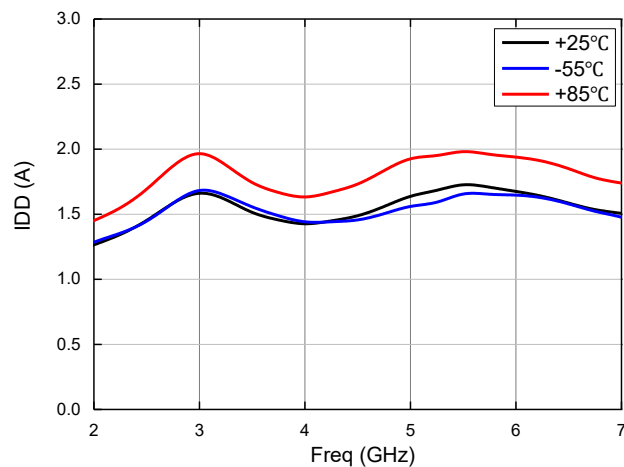
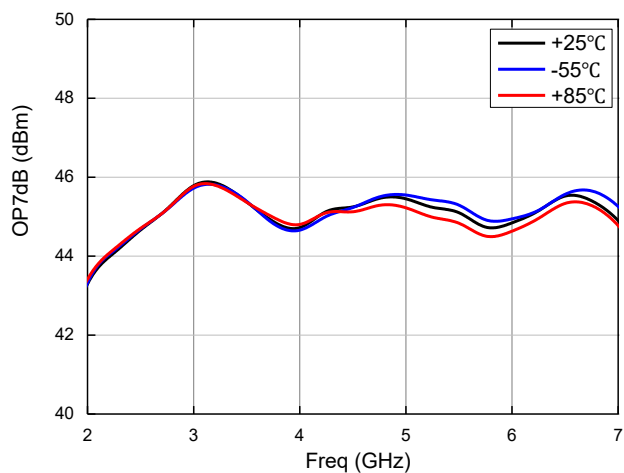
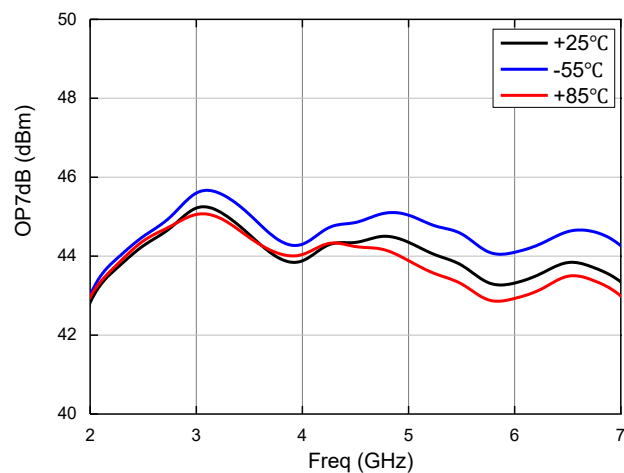
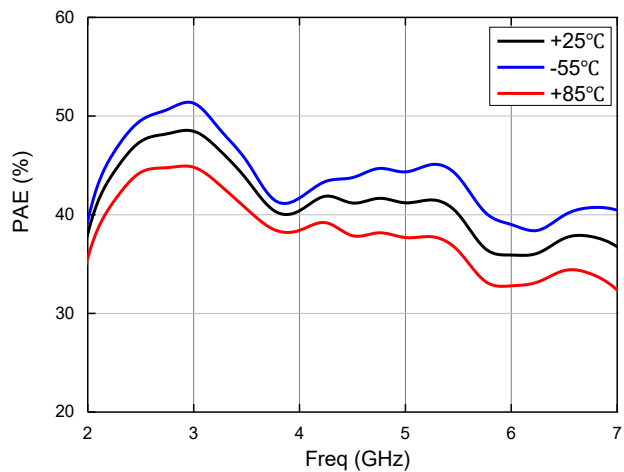
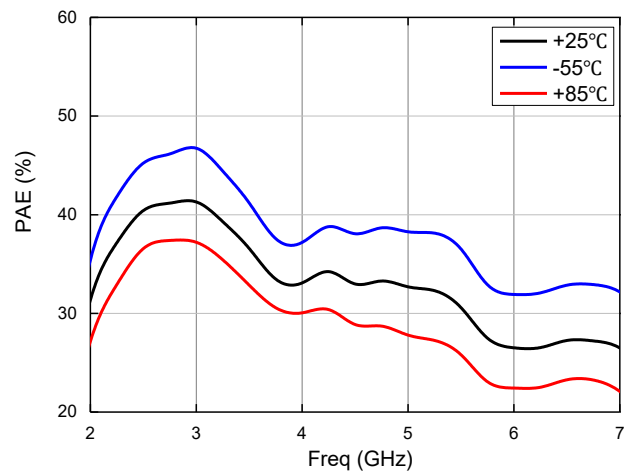
使用限制参数

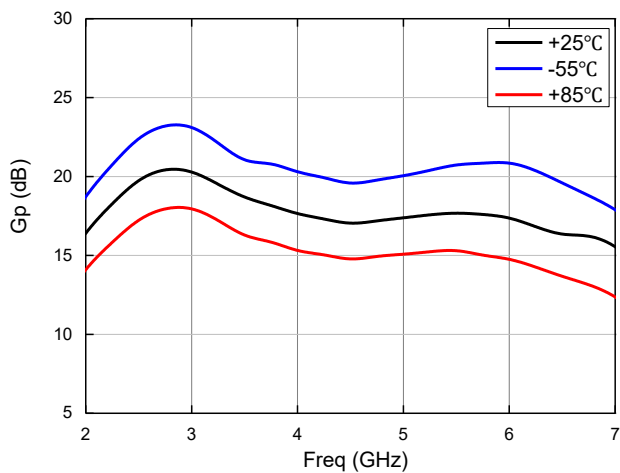
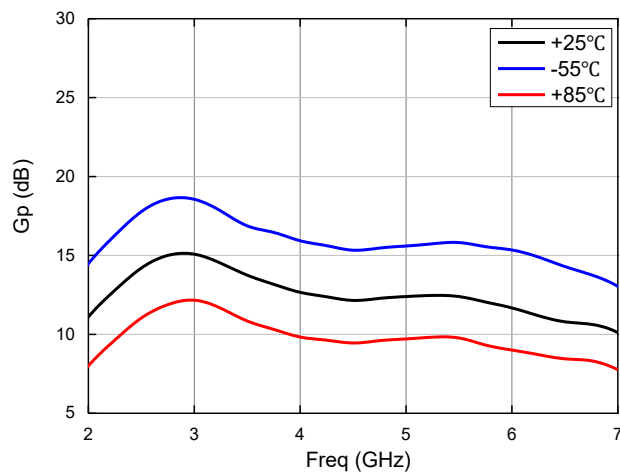
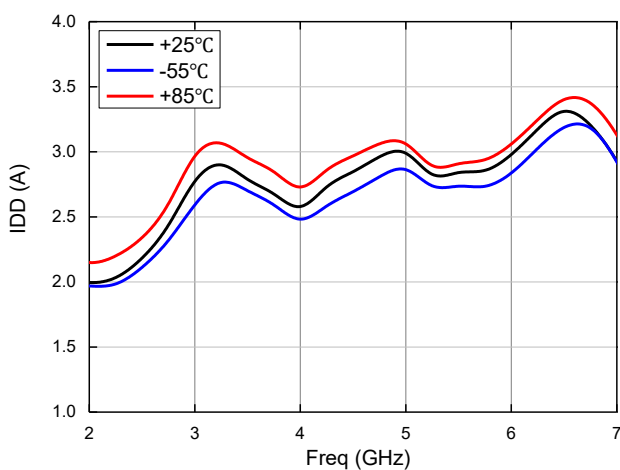
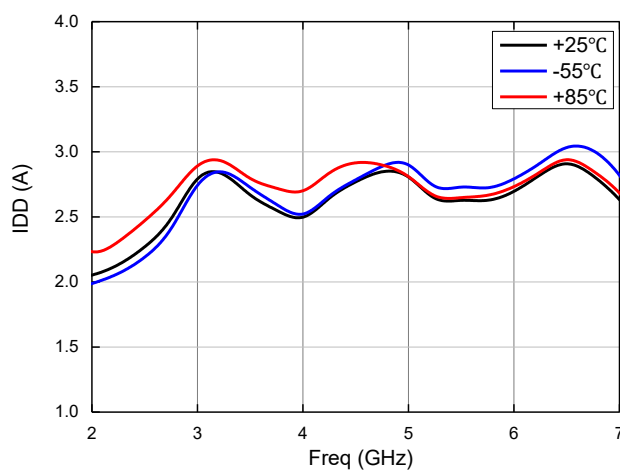
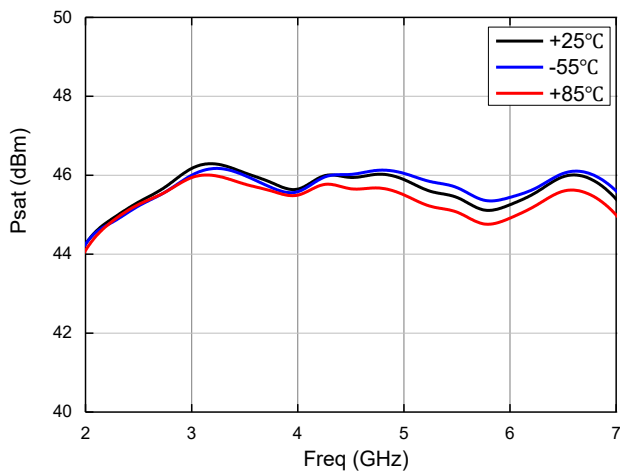
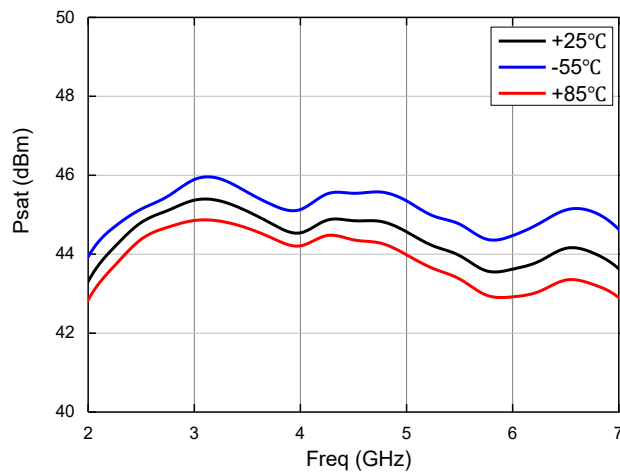
最大漏极工作电压	+32V
最大栅极工作电压	-5V
最大输入功率	+37dBm
贮存温度	-65°C ~ +150°C
工作温度	-55°C ~ +85°C

测试曲线 (VD = +28V, VG: -2.6V for Pulse, -2.6V for CW, Pulse模式测试条件: 100us/1ms)

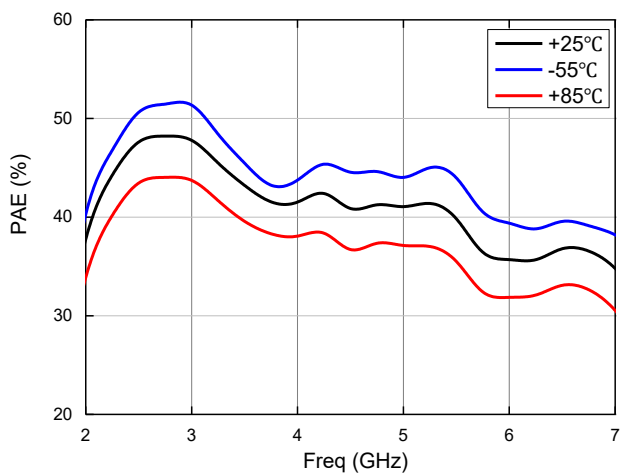
小信号增益 (Pulse模式)

小信号增益 (CW模式)

输入回波损耗 (Pulse模式)

输入回波损耗 (CW模式)


输出1dB压缩功率 (Pulse模式)

输出1dB压缩功率 (CW模式)

功率附加效率@OP1dB (Pulse模式)

功率附加效率@OP1dB (CW模式)

功率增益@OP1dB (Pulse模式)

功率增益@OP1dB (CW模式)


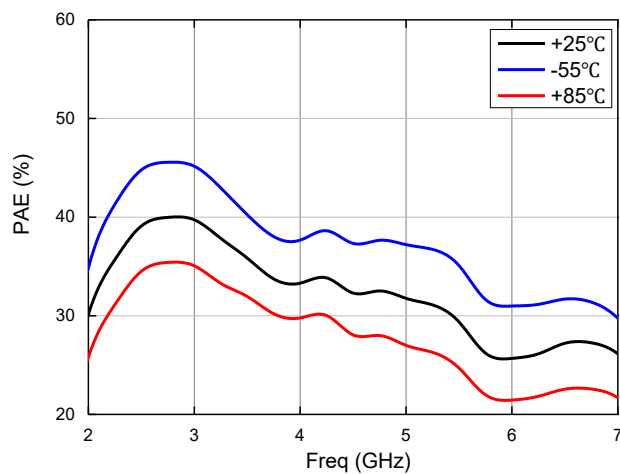
动态电流@OP1dB (Pulse模式)

动态电流@OP1dB (CW模式)

输出7dB压缩功率 (Pulse模式)

输出7dB压缩功率 (CW模式)

功率附加效率@OP7dB (Pulse模式)

功率附加效率@OP7dB (CW模式)


功率增益@OP7dB (Pulse模式)

功率增益@OP7dB (CW模式)

动态电流@OP7dB (Pulse模式)

动态电流@OP7dB (CW模式)

饱和输出功率 (Pulse模式)

饱和输出功率 (CW模式)


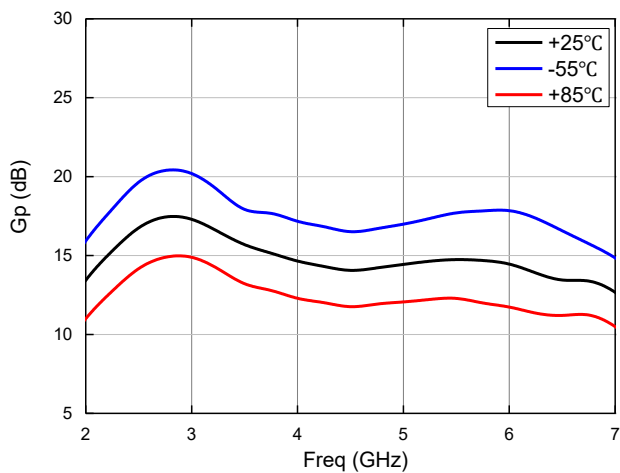
饱和功率附加效率 (Pulse模式)



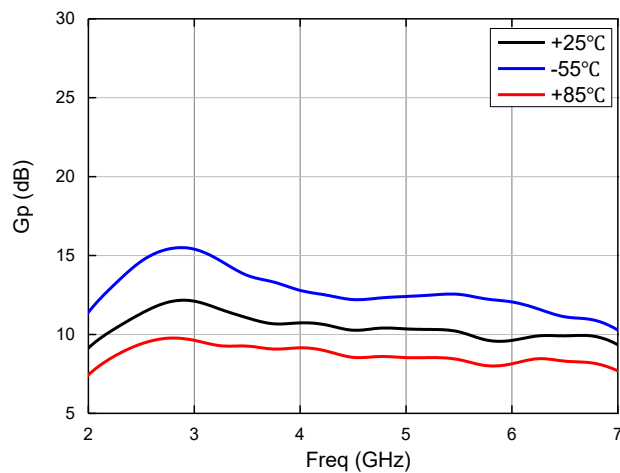
饱和功率附加效率 (CW模式)



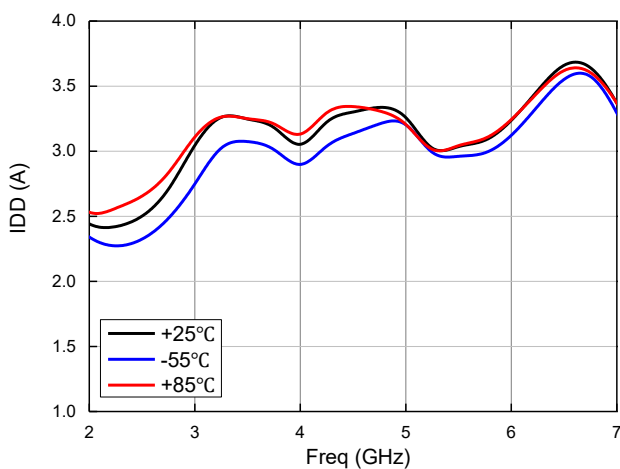
饱和功率增益 (Pulse模式)



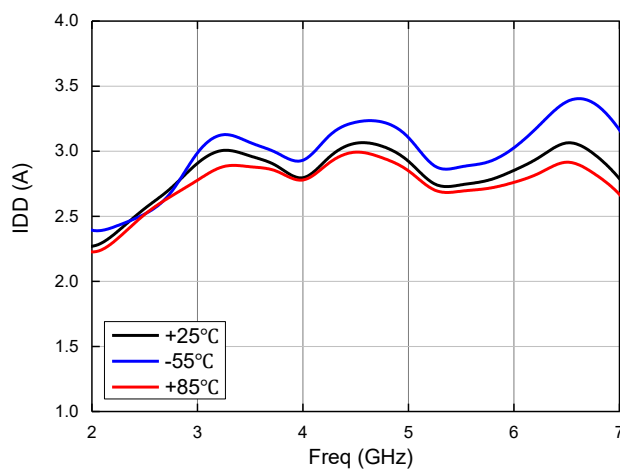
饱和功率增益 (CW模式)



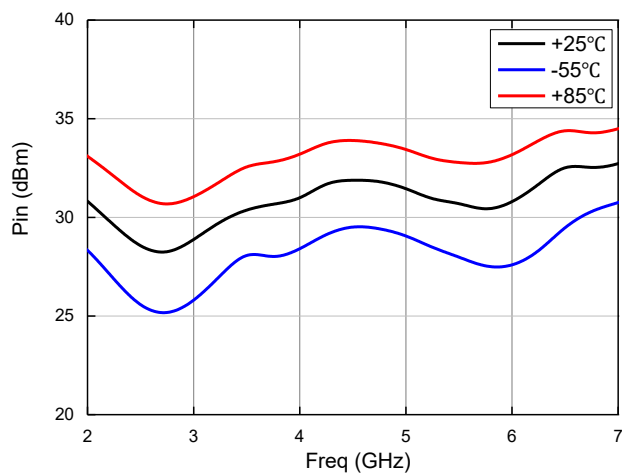
饱和动态电流 (Pulse模式)



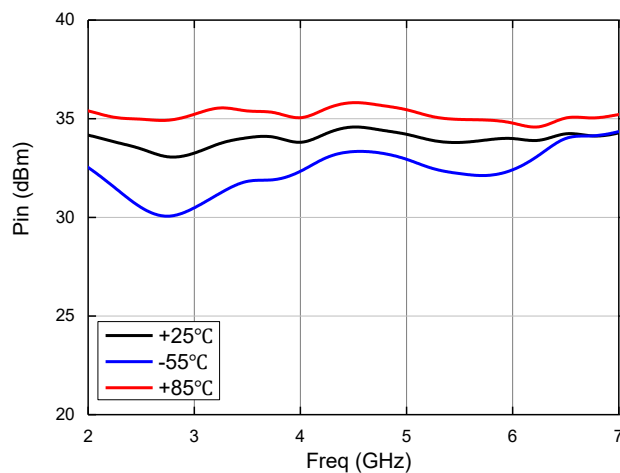
饱和动态电流 (CW模式)



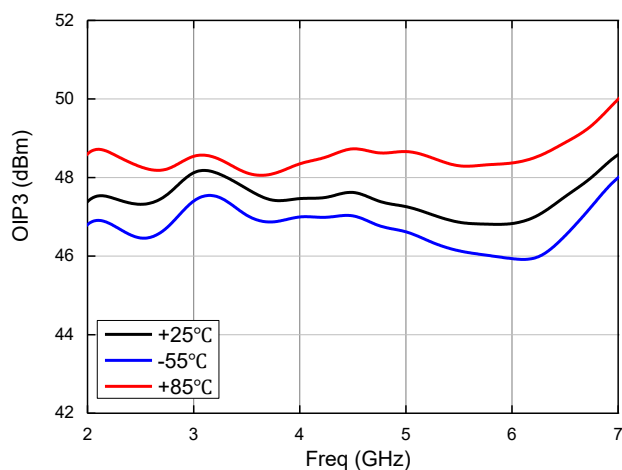
饱和输出时输入功率（Pulse模式）



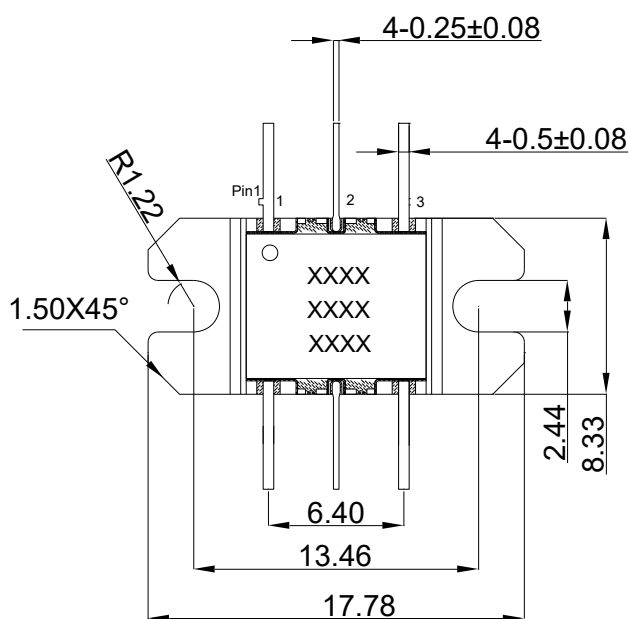
饱和输出时输入功率（CW模式）



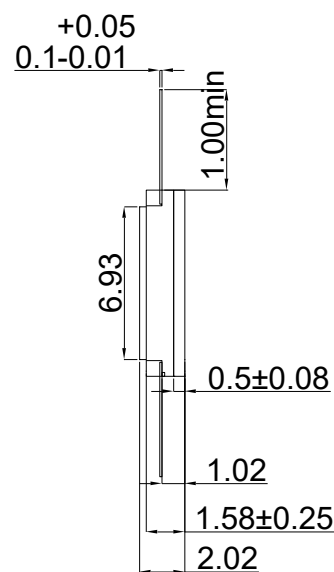
输出三阶交调功率（CW模式）



外形尺寸（单位：mm）

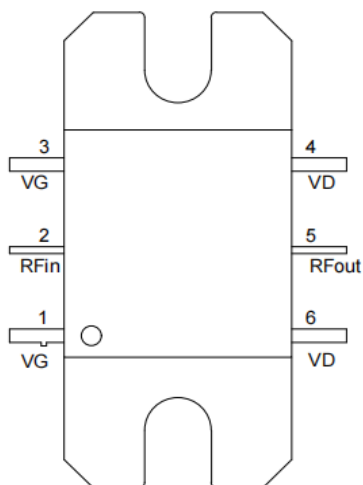


TOP VIEW



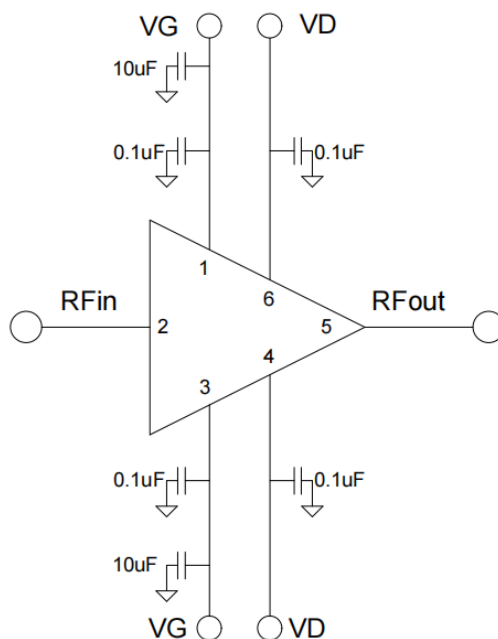
SIDE VIEW

端口定义



序号	端口名	定义	信号或电压
2	RFin	射频信号输入端，集成隔直电容	RF
5	RFout	射频信号输出端，集成隔直电容	RF
1/3	VG	栅极馈电端	-3~-2V DC
4/6	VD	漏极馈电端	+28V DC

应用电路



注意事项

- 1) 加电时请严格按照先负压后正压的次序；上电时，先加栅压，后加漏压；去电时，先降漏压，后降栅压；
- 2) 注意使用过程中请做好散热措施，管壳温度越低，器件使用寿命越长。连续波或高温使用时建议使用紫铜材料；如若使用铝腔体，芯片和电路板都要烧结在腔体上；
- 3) 在使用过程中，仪器，设备等应接地良好；本品属于静电敏感器件，储存和使用时注意防静电；
- 4) 请根据具体调制方式及相应要求合理选取电源。