

关键指标

- 频率范围：30KHz~40GHz
- 增益：12dB
- 输出 P_{1dB} : 15dBm@40GHz
- 供电电源：+6V@130mA/-Vg
- QFN5x5 表贴封装

典型应用

- 宽带通信
- 测试测量仪器

产品简介

XT3946Q5 是一款工作频率为 30KHz~40GHz 的分布式放大器, 该放大器采用 GaAs 工艺制成, 在 130mA 工作电流下, 可提供 12dB 增益, 在 40GHz 时输出 P_{1dB} 为 15dBm

电性能 ($T_A=25^{\circ}\text{C}$, $V_D=+6\text{V}$, $I_D=120\text{mA}$, $Z_0=50\Omega$)

指标	最小值	典型值	最大值	单位
频率	0.00003~40			GHz
增益	—	12	—	dB
增益平坦度	—	± 1.5	± 2.5	dB
输入/输出驻波比	—	1.6	2.7	: 1
噪声系数	—	7	—	dB
反向隔离度	—	40	15	dB
输出 P_{1dB}	10	15	—	dBm
工作电流	—	120	150	mA

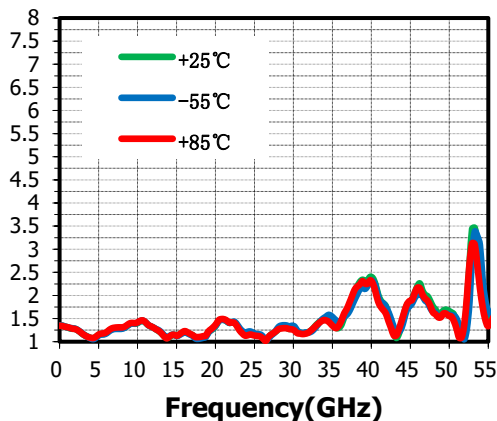
绝对最大额定值

最大输入功率	+17dBm 30s CW	工作温度	-55°C~+85°C
沟道温度	+150°C	贮存温度	-55°C~+150°C
V_D	+8V		

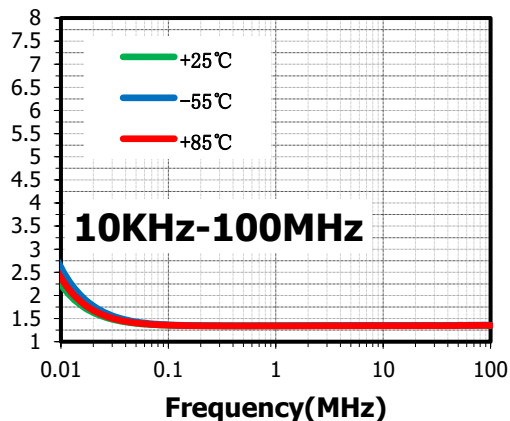
典型性能测试曲线

VD=+6V, IDQ=120mA, 夹具测试, 数据去嵌入,VNA Bias

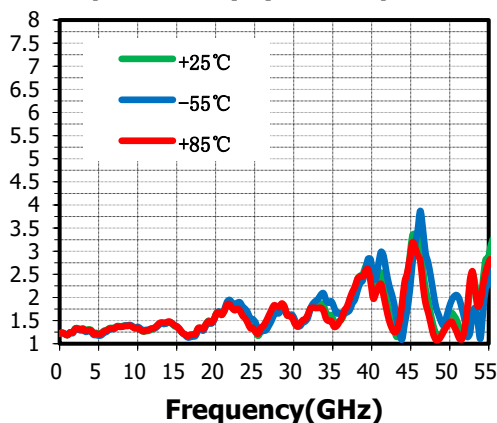
Input VSWR(:1) vs.Temperature



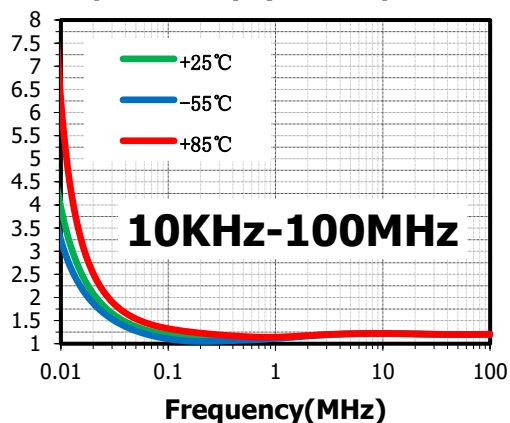
Input VSWR(:1) vs.Temperature



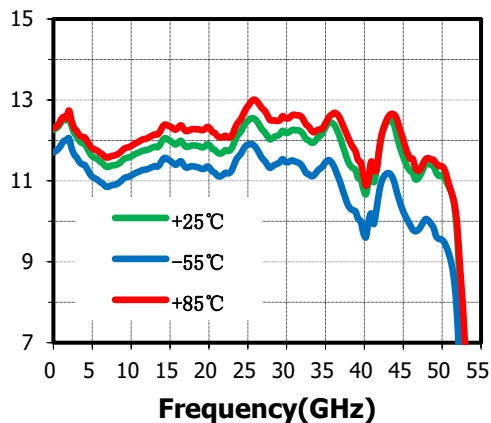
Output VSWR(:1) vs.Temperature



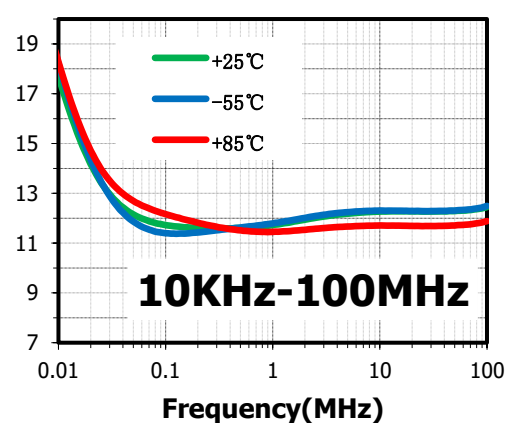
Output VSWR(:1) vs.Temperature



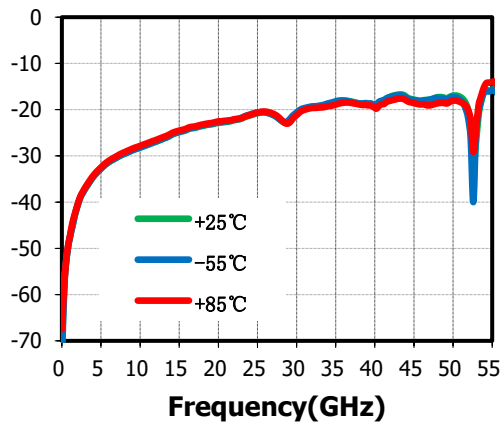
Small Signal Gain(dB) vs.Temperature



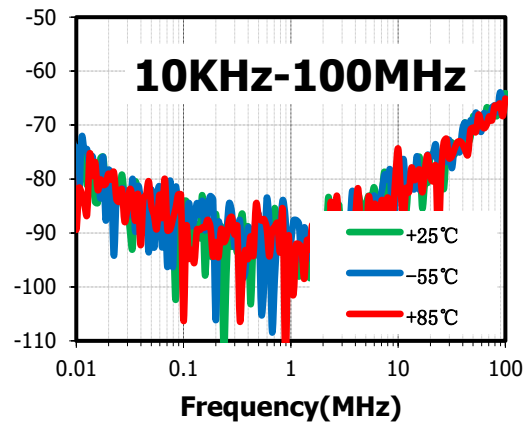
Small Signal Gain(dB) vs.Temperature



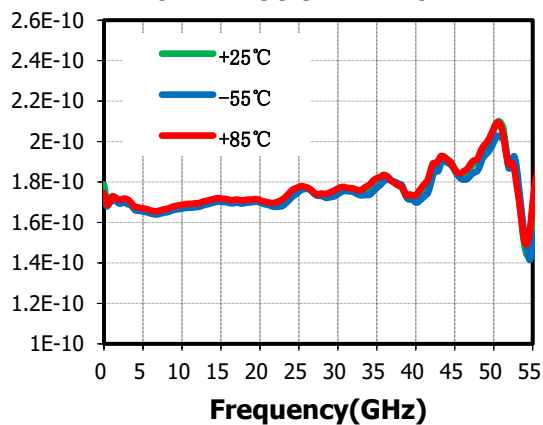
Isolation(dB) vs.Temperature



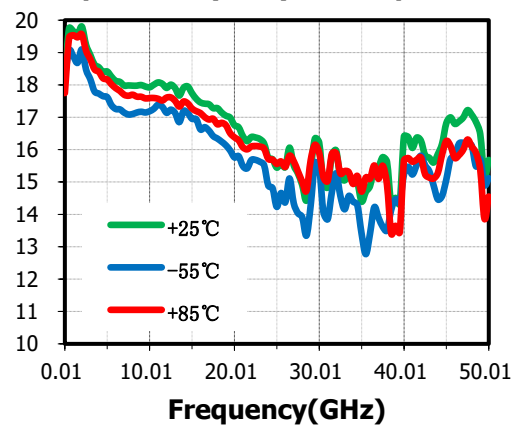
Isolation(dB) vs.Temperature



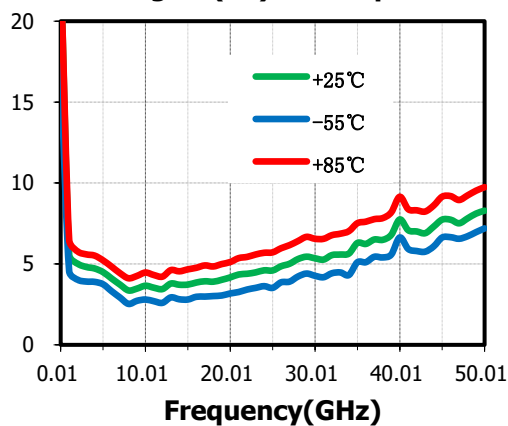
Groupe Delay(S) vs.Temperature



Output P-1dB(dBm) vs.Temperature



Noise Figure(dB) vs.Temperature



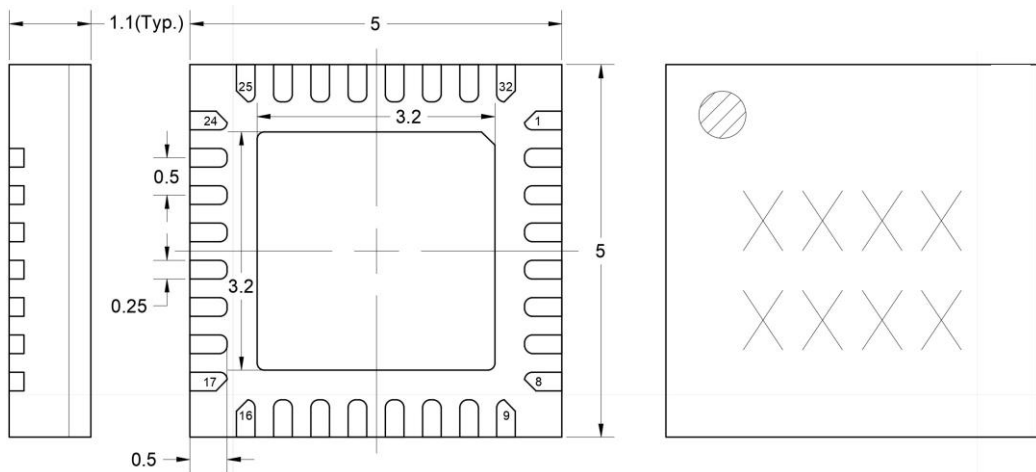
XT3946Q5



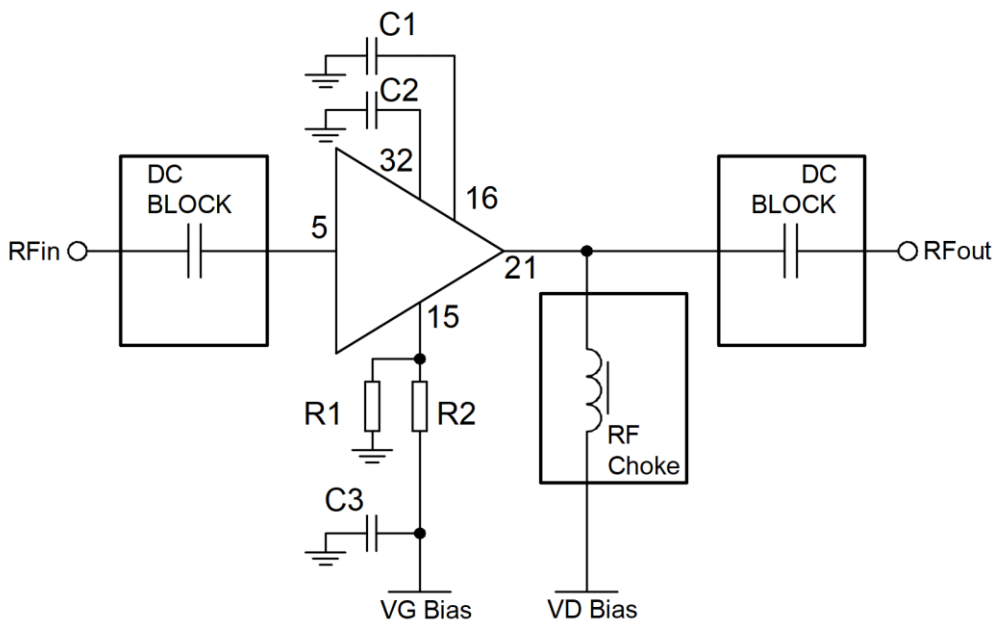
GaAs 单片驱动放大器
30KHz~40GHz

Rev 1.0

外形和端口尺寸 (mm)



应用电路图



元件清单

编号	数值	型号	制造商
R2	1000Ω	TFPT0603L1001FV(热敏电阻)	VISHAY
R1*	91Ω	-	-
C1~C3	0.47 μF	LWK105BJ474MP	Taiyo Yuden

*微调此电阻可改变静态工作电流(I_{DQ}), VG Bias=-5V



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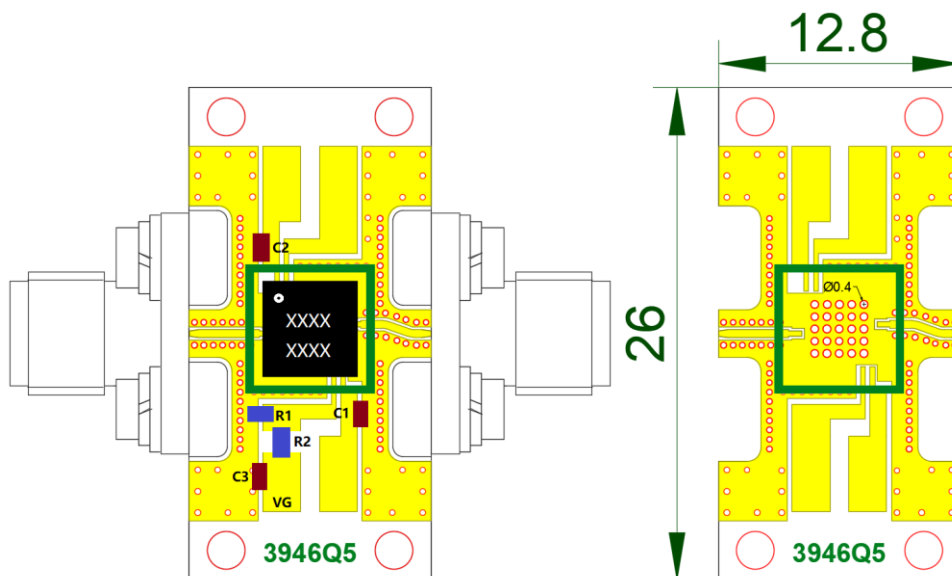
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网址：www.fairchild-tech.com 邮箱：sales@fairchild-tech.com

引脚定义

编号	功能	编号	功能	编号	功能	编号	功能
1	Connect to GND	11	Connect to GND	21	RFOUT/VD Bias	31	Connect to GND
2	Connect to GND	12	Connect to GND	22	Connect to GND	32	ACD
3	Connect to GND	13	Connect to GND	23	Connect to GND		
4	Connect to GND	14	Connect to GND	24	Connect to GND		
5	RFIN(DC Coupled)	15	VG Bias	25	Connect to GND		
6	Connect to GND	16	ACG	26	Connect to GND		
7	Connect to GND	17	Connect to GND	27	Connect to GND		
8	Connect to GND	18	Connect to GND	28	Connect to GND		
9	Connect to GND	19	Connect to GND	29	Connect to GND		
10	Connect to GND	20	Connect to GND	30	Connect to GND		

评估板



评估版材料为 Ro4350b, 介质厚度 0.254mm

注意事项

1. 芯片对静电敏感, 在储存和使用过程中注意防静电。