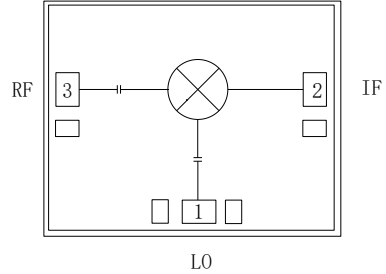


性能特点

- 变频增益: -7.5dB
- L0至RF隔离: 52dB
- L0至IF隔离: 42dB
- 无源双平衡拓扑结构
- 频率范围: 0.6~2GHz
- 芯片尺寸: 1.400mm*1.596mm

典型应用

- 点对点通信
- 仪器仪表
- 5G通信

功能框图

概述

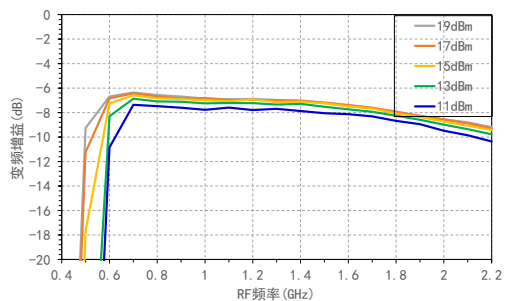
SIM273是一款通用型无源双平衡混频器,采用GaAs工艺制造。该器件为无源器件,无需偏置、外部元件或匹配电路。可用作频率0.6GHz至2GHz的上变频器或下变频器。

电性能表 (T_A=+25°C, IF=100MHz, LO=+13dBm USB)

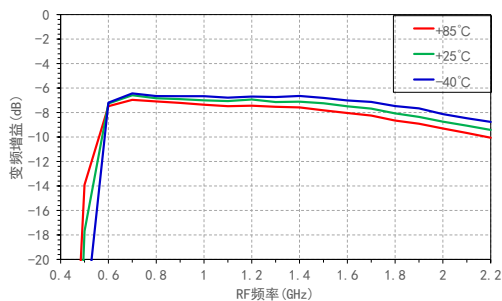
参数名称	描述	最小值	典型值	最大值	单位
频率范围	RF、L0端口	0.6~2.0			GHz
	IF端口	DC~1.0			GHz
本振输入功率范围		11		19	dBm
变频增益			-7.5		dB
噪声系数			7.5		dB
输入IP3	Pin=-10dBm/tone, Δf=1MHz		20		dBm
输入IP2	Pin=-10dBm/tone, Δf=1MHz		50		dBm
输入P1dB	下变频		12		dBm
回波损耗	RF端口		13		dB
	IF端口		5		dB
隔离度	RF到IF端口		15		dB
	L0到RF端口		52		dB
	L0到IF端口		42		dB

测试曲线 (IF=0.1GHz,USB)

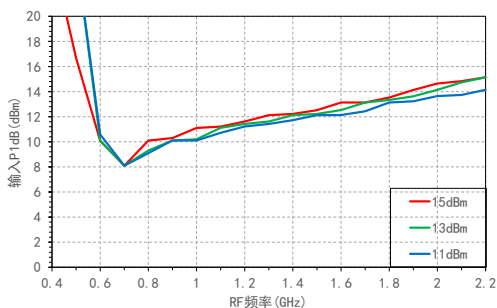
变频增益 VS 射频频率@本振功率



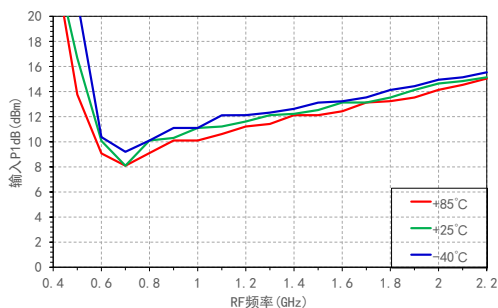
变频增益 VS 射频频率 @温度 (LO=15dBm)



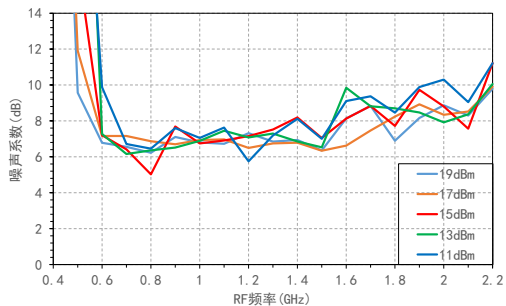
输入P1dB VS 射频频率@本振功率



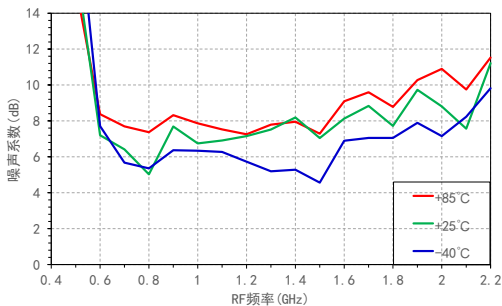
输入P1dB VS 射频频率@温度 (LO=15dBm)



噪声系数 VS 射频频率@本振功率

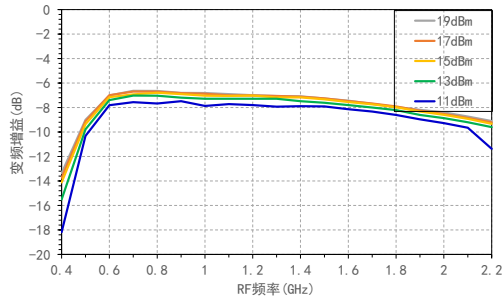


噪声系数 VS 射频频率@温度 (LO=15dBm)

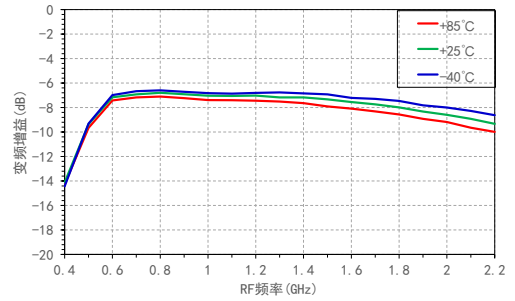


测试曲线 (IF=0.1GHz,LSB)

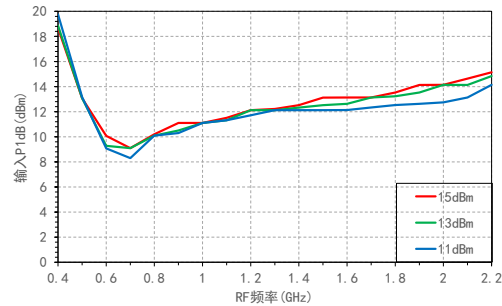
变频增益 VS 射频频率@本振功率



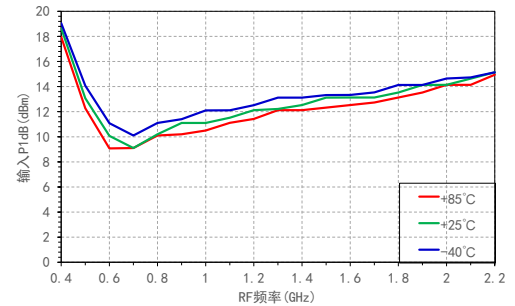
变频增益 VS 射频频率 @温度 (LO=15dBm)



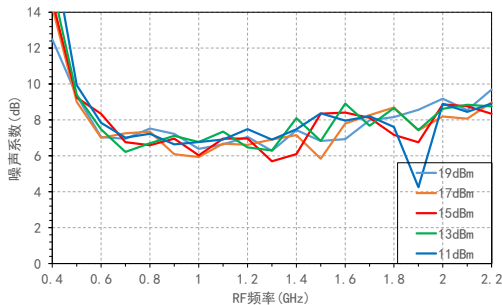
输入P1dB VS 射频频率@本振功率



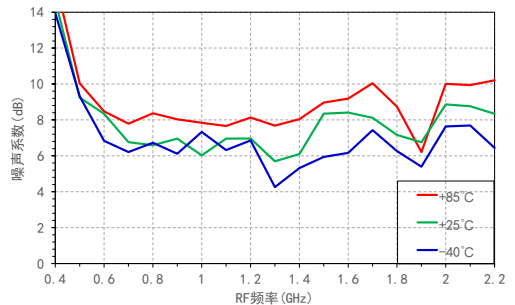
输入P1dB VS 射频频率@温度 (LO=15dBm)



噪声系数 VS 射频频率@本振功率

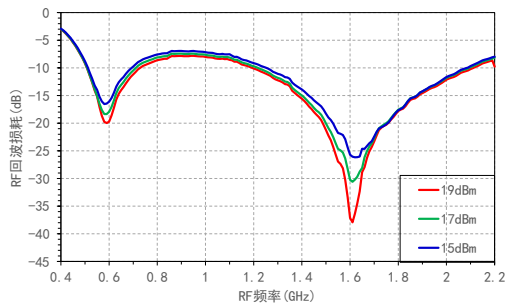


噪声系数 VS 射频频率@温度 (LO=15dBm)

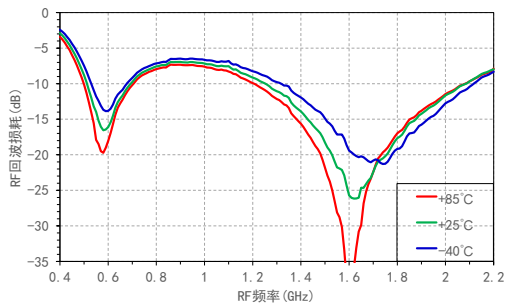


测试曲线

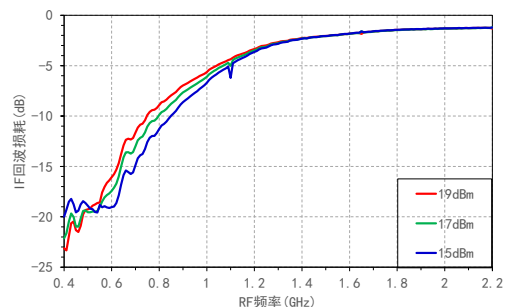
RF回波损耗 VS 射频频率@本振功率



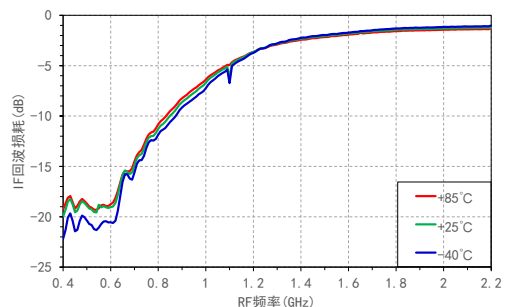
RF回波损耗 VS 射频频率 @温度 (LO=15dBm)



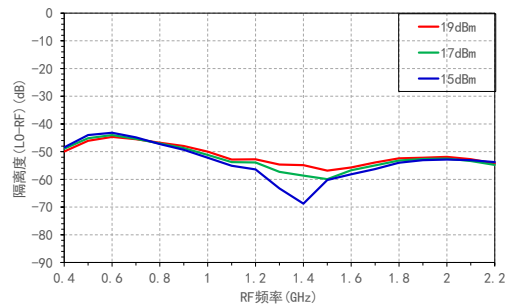
IF回波损耗 VS 射频频率@本振功率



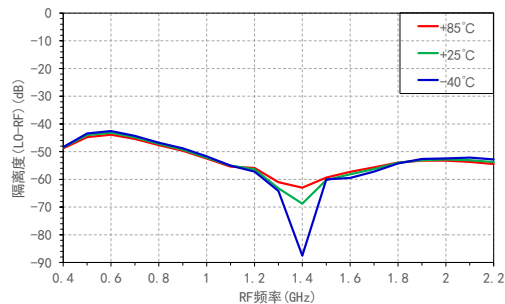
IF回波损耗 VS 射频频率@温度 (LO=15dBm)



隔离度 (LO-RF) VS 射频频率@本振功率

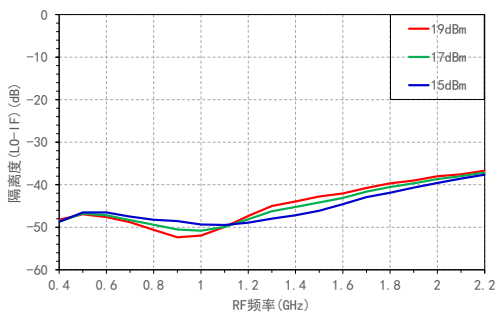


隔离度 (LO-RF) VS 射频频率@温度 (LO=15dBm)

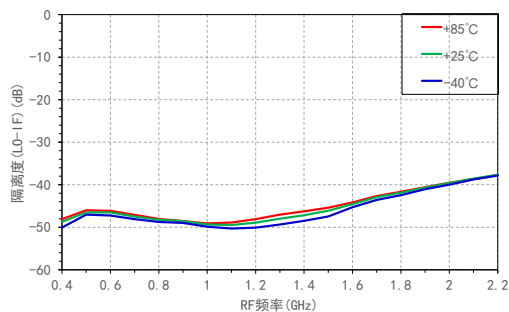


测试曲线

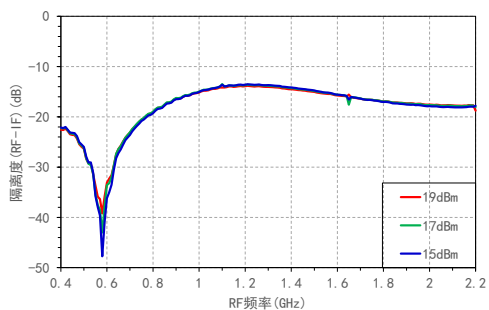
隔离度 (L0-IF) VS 射频频率@本振功率



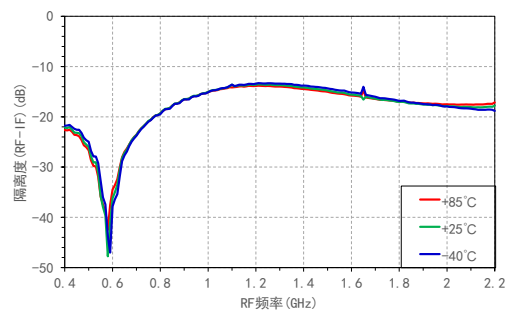
隔离度 (L0-IF) VS 射频频率@温度 (LO=15dBm)



隔离度 (RF-IF) VS 射频频率@本振功率



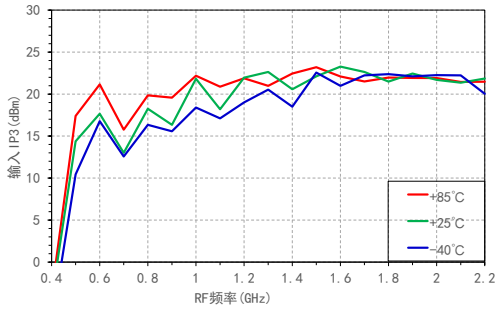
隔离度 (RF-IF) VS 射频频率@温度 (LO=15dBm)



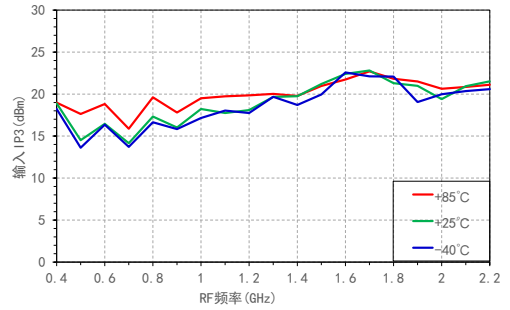
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测试曲线 (IF=0.1GHz)

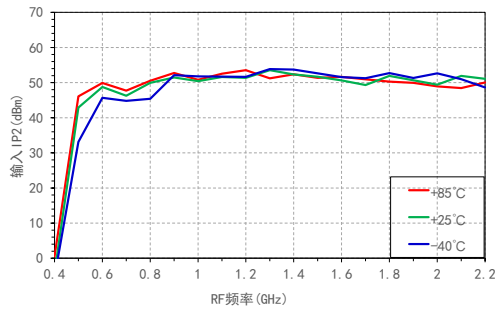
输入IP3 VS 射频频率 (USB IF=0.1GHz)



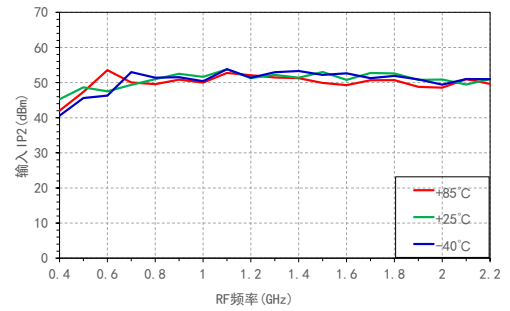
输入IP3 VS 射频频率 (LSB IF=0.1GHz)



输入IP2 VS 射频频率 (USB IF=0.1GHz)



输入IP2 VS 射频频率 (LSB IF=0.1GHz)



杂散（下变频）

射频/本振阶数M	0	1	2	3	4	5
0	/	15.67	31.13	-1.36	53.41	35.95
1	7.22	0.00	36.35	37.56	31.40	44.55
2	63.08	54.67	70.71	81.27	102.76	59.02
3	80.18	69.64	63.61	59.24	74.53	94.89
4	97.62	86.38	83.12	96.66	102.55	102.57
5	79.00	95.15	85.92	81.26	99.71	103.38
IF=0.175GHz, L0=1.2GHz						

射频/本振阶数M	0	1	2	3	4	5
0	/	12.54	28.66	12.70	46.59	28.22
1	6.35	0.00	36.30	39.05	33.80	46.14
2	59.67	57.11	73.91	70.91	101.17	66.53
3	66.46	71.29	67.11	63.47	72.23	76.92
4	79.51	102.15	78.61	87.84	92.88	101.89
5	86.60	77.84	90.19	71.51	63.22	66.76
IF=0.175GHz, L0=1.4GHz						

射频/本振阶数M	0	1	2	3	4	5
0	/	8.97	18.77	18.93	43.14	28.24
1	6.63	0.00	36.32	43.45	35.27	46.34
2	61.23	66.71	72.24	95.59	67.76	68.04
3	82.25	74.12	67.94	66.07	70.58	94.56
4	84.06	96.52	107.74	84.29	82.39	82.53
5	84.99	79.30	85.00	87.22	113.92	100.44
IF=0.175GHz, L0=1.6GHz						

射频/本振阶数M	0	1	2	3	4	5
0	/	15.62	31.06	-1.40	53.04	35.92
1	8.21	0.00	43.68	38.74	31.12	43.93
2	63.95	54.68	66.77	76.74	102.19	60.68
3	105.11	68.19	65.07	57.80	71.55	78.77
4	73.40	83.61	81.51	93.61	80.01	83.09
5	73.65	84.51	99.80	82.00	104.33	97.40
IF=0.275GHz, L0=1.2GHz						

射频/本振阶数M	0	1	2	3	4	5
0	/	12.72	28.91	12.92	46.96	28.45
1	6.20	0.00	39.57	39.62	32.98	45.81
2	67.10	59.49	70.13	76.68	69.11	69.06
3	98.92	67.57	66.33	60.04	73.64	80.54
4	79.54	82.84	85.63	85.63	101.15	78.94
5	101.04	101.98	81.26	101.59	84.37	91.27
IF=0.275GHz, L0=1.4GHz						

射频/本振阶数M	0	1	2	3	4	5
0	/	9.12	18.94	19.08	43.43	28.37
1	6.18	0.00	38.81	41.76	34.70	46.48
2	61.44	60.54	70.57	101.75	74.10	70.42
3	69.52	73.00	68.82	66.10	71.33	74.97
4	78.48	94.12	100.56	104.99	87.09	93.82
5	78.07	106.54	85.13	94.71	80.24	98.79
IF=0.275GHz, L0=1.6GHz						

工作参数

工作温度	-40°C~+85°C
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绝对最大额定值

RF/IF输入功率	28dBm
L0输入功率	28dBm
存储温度	-65°C~+150°C
工作温度	-40°C~+85°C
ESD_HBM	Class 1A

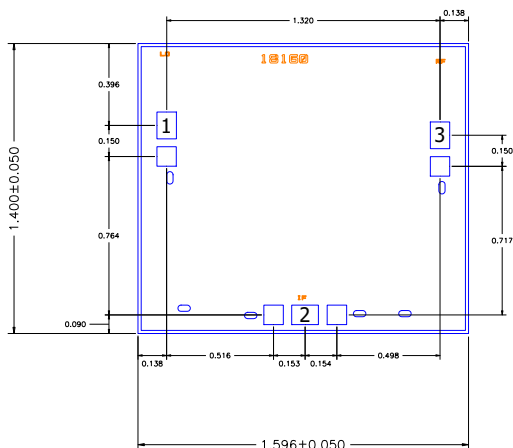
注意事项

1. 禁止试图用湿化学方法清洁芯片表面。
2. 本品属于静电敏感器件，储存和使用时要注意防静电。
3. 干燥、氮气环境储存。


键合压点定义

序号	功能符号	功能描述	尺寸
1	L0	本振输入端口，内部有隔直电容	94um X 129um
2	IF	中频输入端口，内部有隔直电容	94um X 129um
3	RF	射频端口，内部无隔直电容	94um X 129um

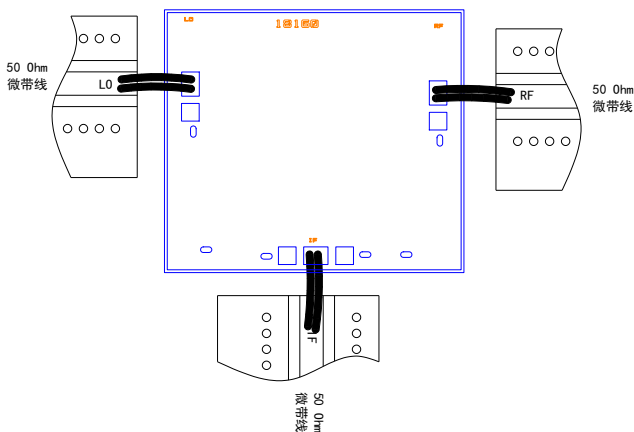
外形尺寸图



说明:

1. 单位: 毫米
2. 键合压点材质镀金
3. 芯片厚度: 0.100 ± 0.015 (mm)
4. 不能在通孔上进行键合, 未编号键合压点也不需要键合
5. 芯片背面金属化
6. 芯片背面接地

芯片装配图



说明:

1. 芯片背面接地, 粘接材料: 导电胶
2. 芯片键合线材料: 1mil Au
3. 键合时注意线长尽量短