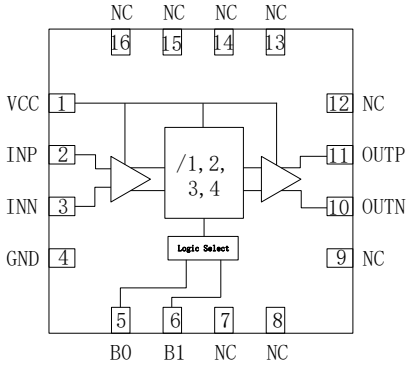
性能特点

- 工作频率：0.001~15GHz
- 单边带相位噪声：-158dBc@100KHz N=4
- 输出功率：0dBm
- 功耗：118mA
- 封装规格：QFN 3*3 16L

典型应用

- 蜂窝/3G基础设施

功能框图



概述

SID184SP3为一款低噪声连续可编程分频器，封装形式为3*3的QFN 16L，工作频率由DC至15GHz，典型工作情况下相位噪声低于-158dBc@100kHz。

电性能表（TA=25℃, VCC=3.3V）

参数	条件	最小值	典型值	最大值	单位
工作频率	单端输入	0.001		15	GHz
输入功率	单端输入, Freq=0.001~0.01GHz	0		10	dBm
	单端输入, Freq=0.01~10GHz	-15		10	dBm
	单端输入, Freq=10~15GHz	-8		7	dBm
输出功率	单端输出		0		dBm
附加相位噪声@10kHz	Fin=6GHz，Pin=10dBm, 分频比4		-157		dBc/Hz
附加相位噪声@100kHz			-158		dBc/Hz
附加相位噪声@1MHz			-158		dBc/Hz
VDD			3.3		V
Idd			118		mA

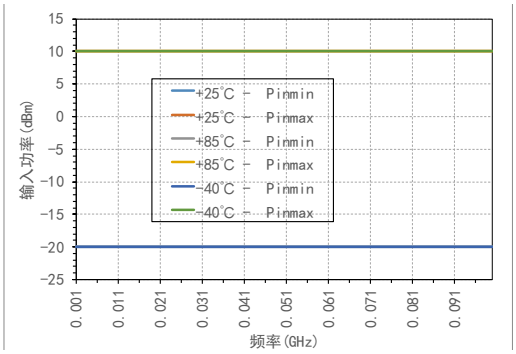
成都仕芯半导体有限公司 Tel:028-62680968 Fax：028-62680967 E-mail:info@sicoresemi.com
地址：成都市高新西区百川路9号
网址：www.sicoresemi.com

测试曲线(1分频)

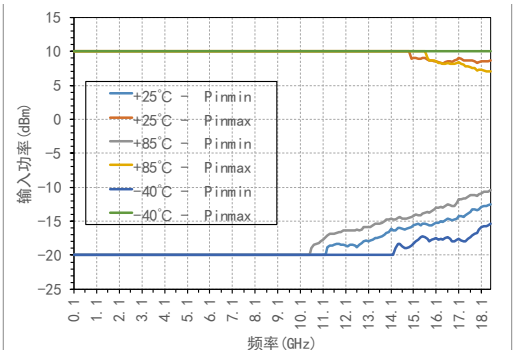
SID

可编程分频器

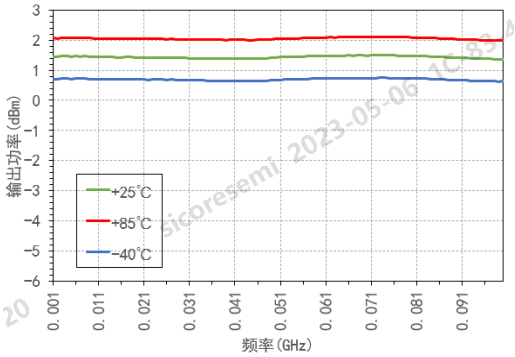
RFOUT分频 灵敏度 VS 频率



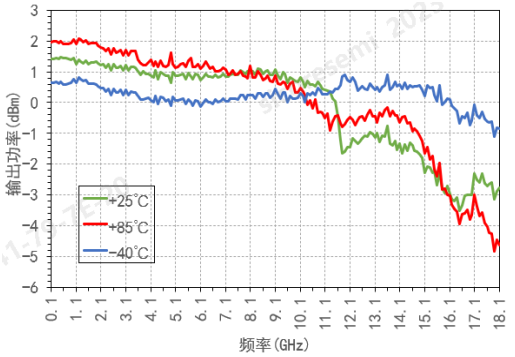
RFOUT分频 灵敏度 VS 频率



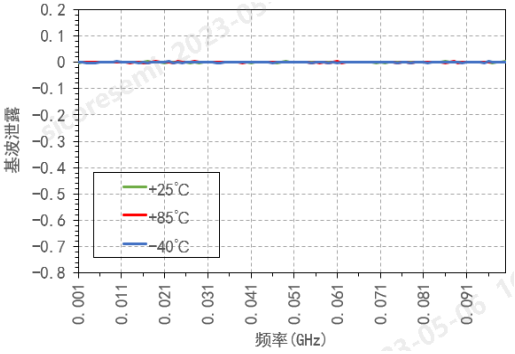
RFOUT输出功率 VS 频率@Pin=0dBm



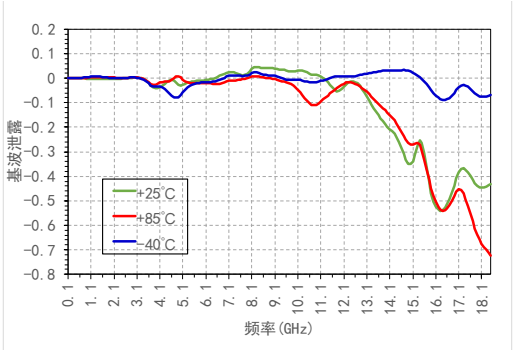
RFOUT输出功率 VS 频率@Pin=0dBm



基波泄露 VS 频率

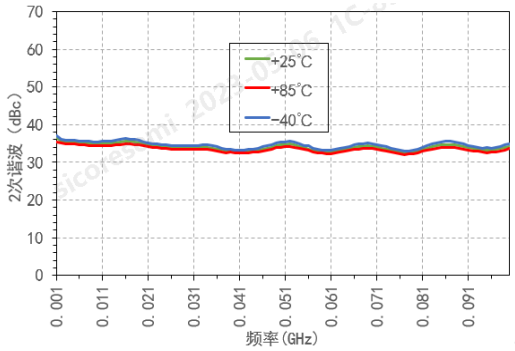


基波泄露 VS 频率

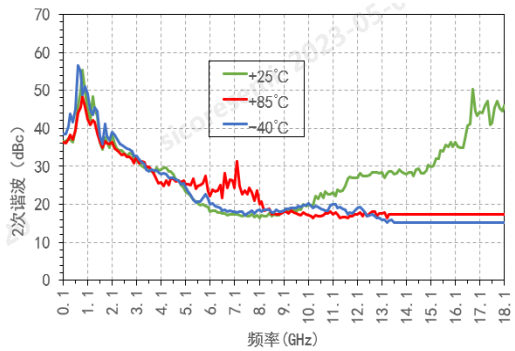


测试曲线(1分频)

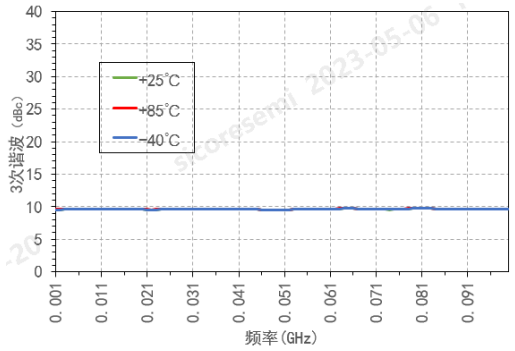
2次谐波 VS 频率



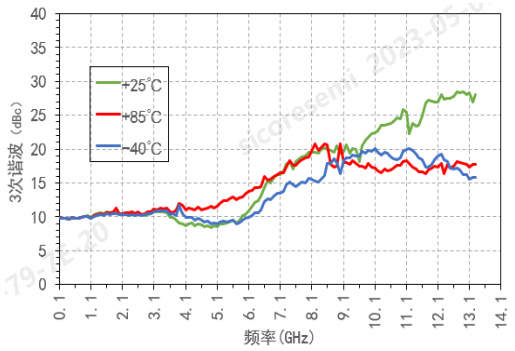
2次谐波 VS 频率



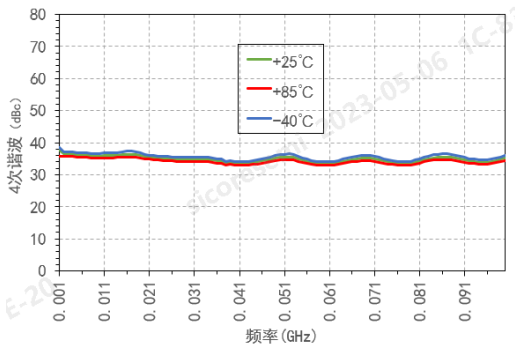
3次谐波 VS 频率



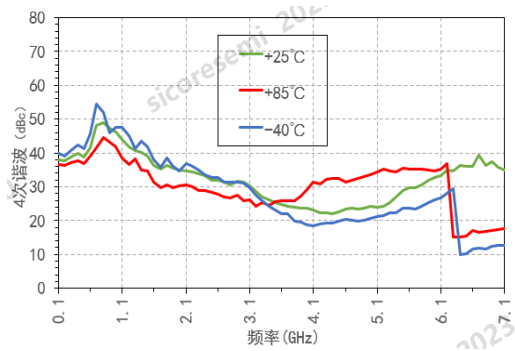
3次谐波 VS 频率



4次谐波 VS 频率

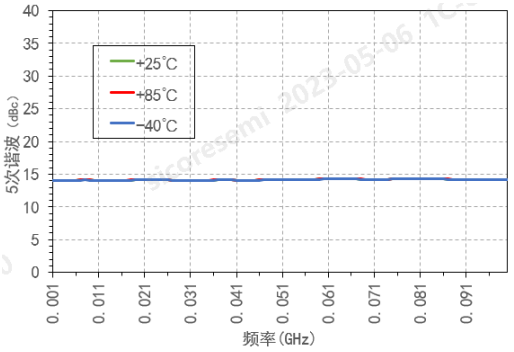


4次谐波 VS 频率

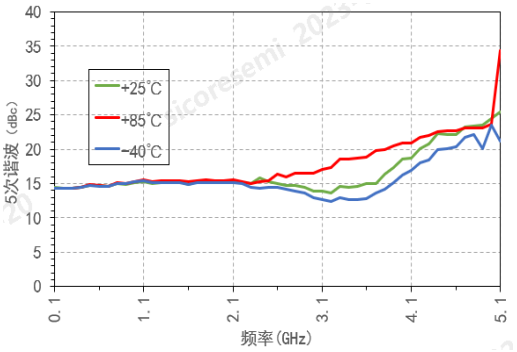


测试曲线(1分频)

5次谐波 VS 频率

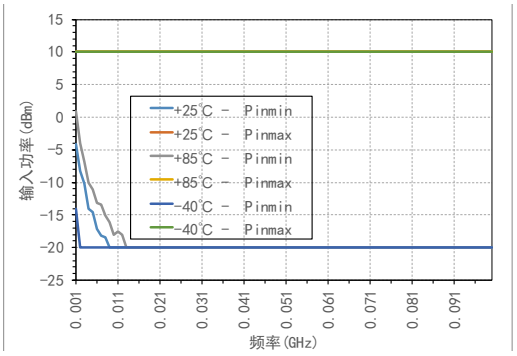


5次谐波 VS 频率

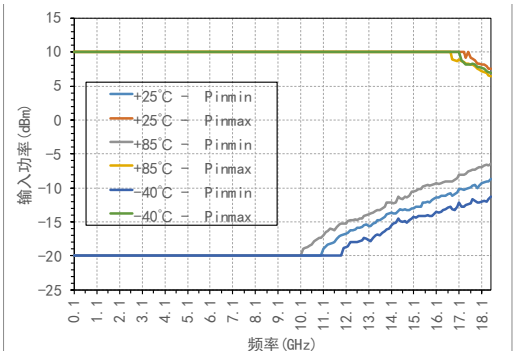


测试曲线(2分频)

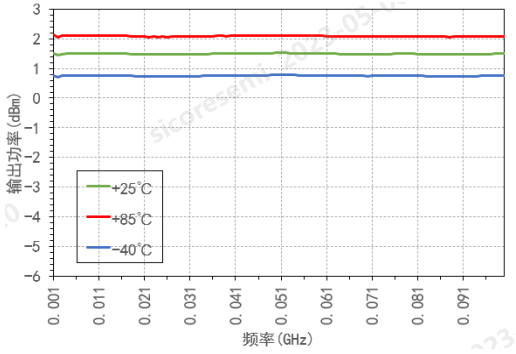
RFOUT分频 灵敏度 VS 频率



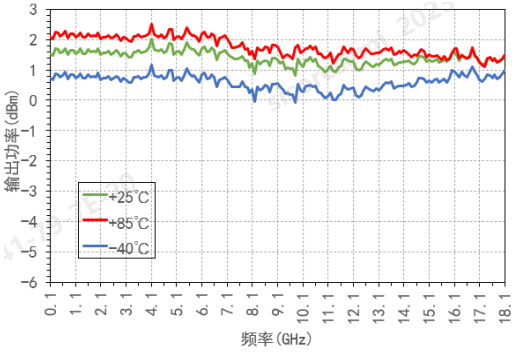
RFOUT分频 灵敏度 VS 频率



RFOUT输出功率 VS 频率@Pin=0dBm

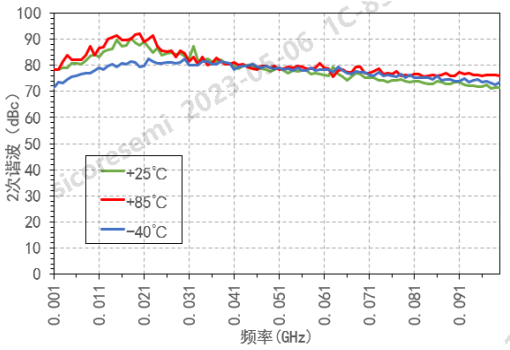


RFOUT输出功率 VS 频率@Pin=0dBm

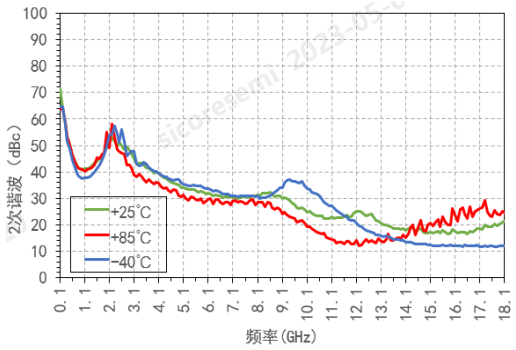


测试曲线(2分频)

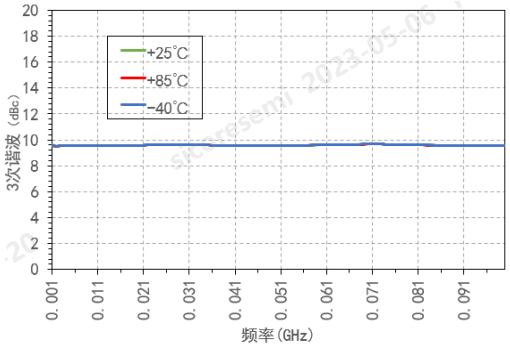
2次谐波 VS 频率



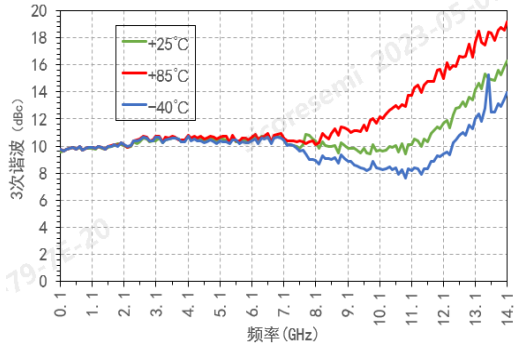
2次谐波 VS 频率



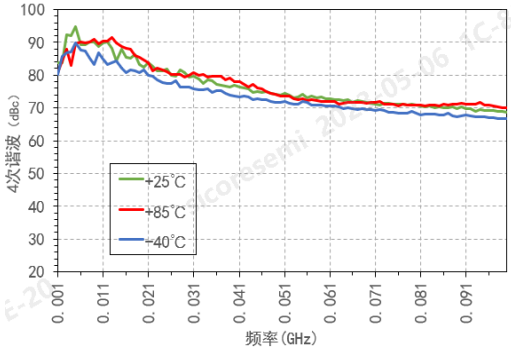
3次谐波 VS 频率



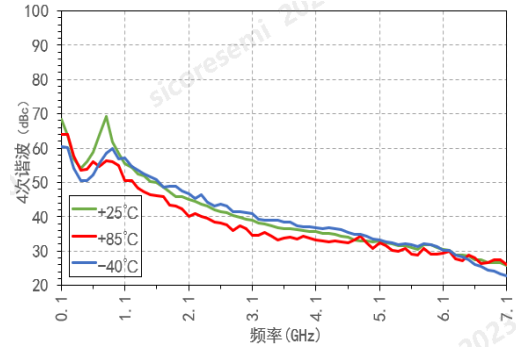
3次谐波 VS 频率



4次谐波 VS 频率

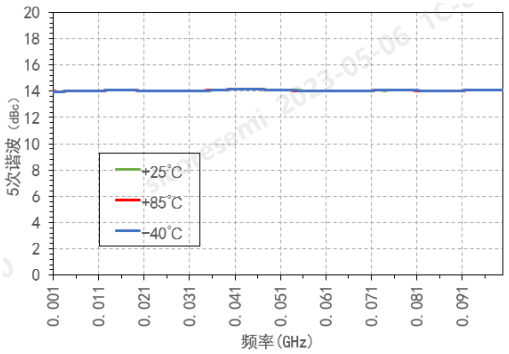


4次谐波 VS 频率

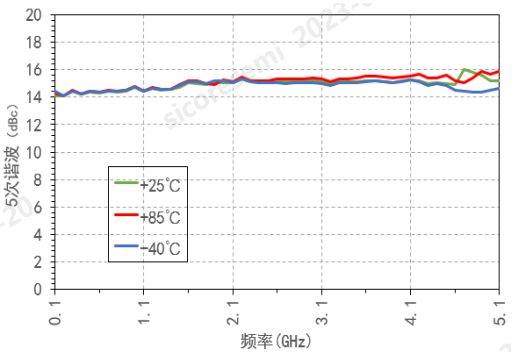


测试曲线(2分频)

5次谐波 VS 频率

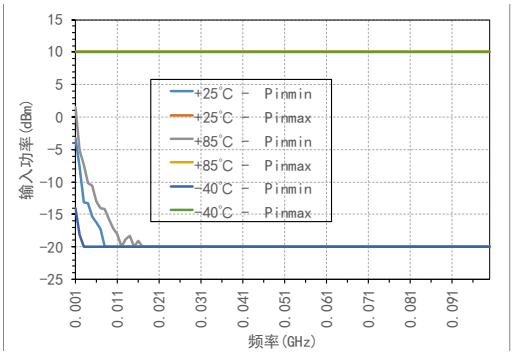


5次谐波 VS 频率

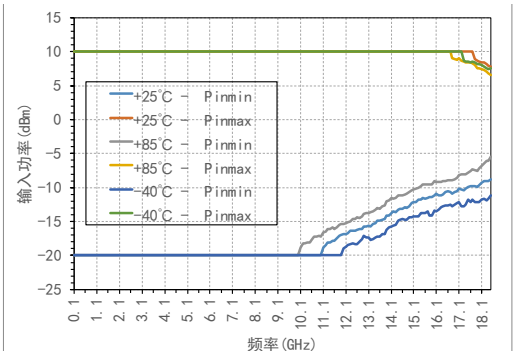


测试曲线(3分频)

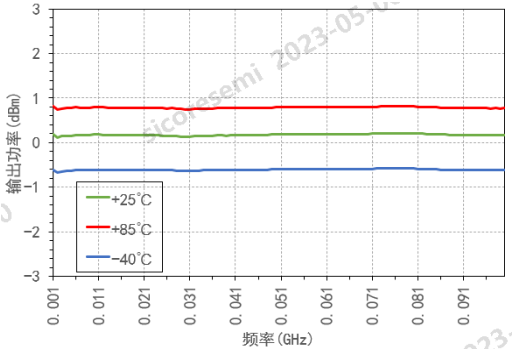
RFOUT分频 灵敏度 VS 频率



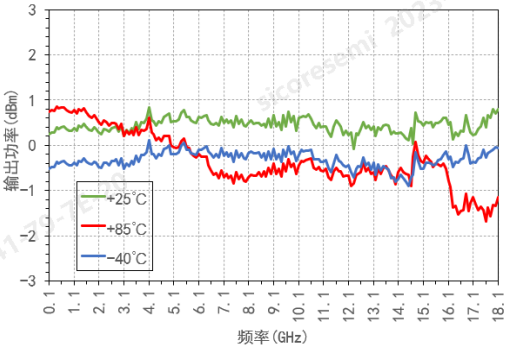
RFOUT分频 灵敏度 VS 频率



RFOUT输出功率 VS 频率@Pin=0dBm



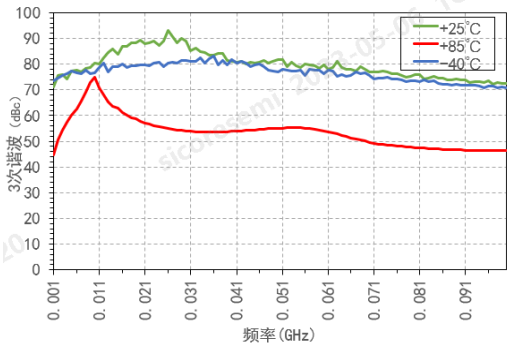
RFOUT输出功率 VS 频率@Pin=0dBm



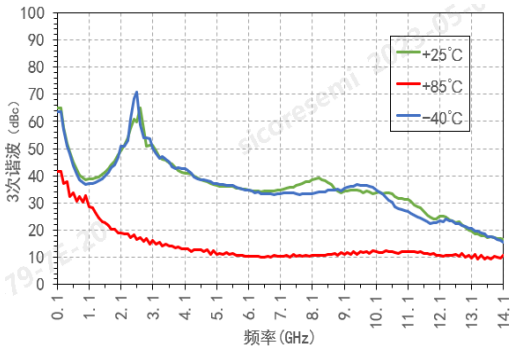
成都仕芯半导体有限公司 Tel:028-62680968 Fax：028-62680967 E-mail:info@sicoresemi.com
地址：成都市高新西区百川路9号
网址：www.sicoresemi.com

测试曲线(3分频)

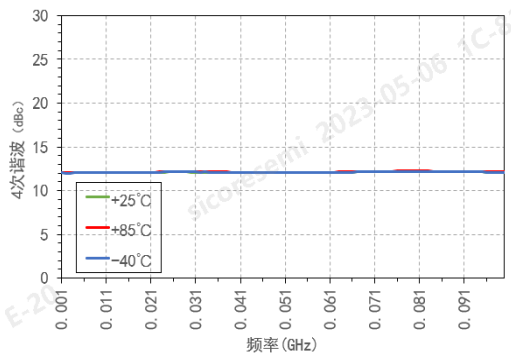
3次谐波 VS 频率



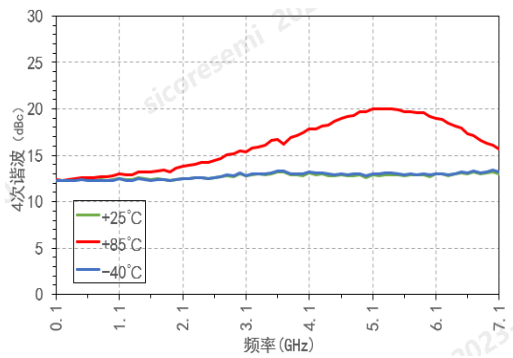
3次谐波 VS 频率



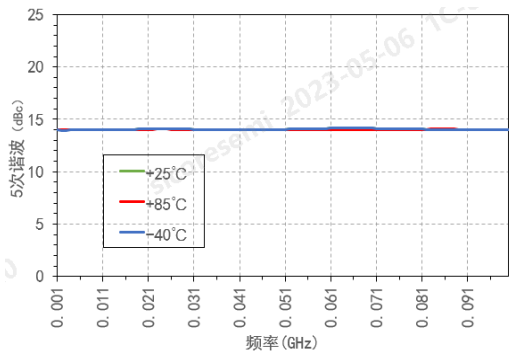
4次谐波 VS 频率



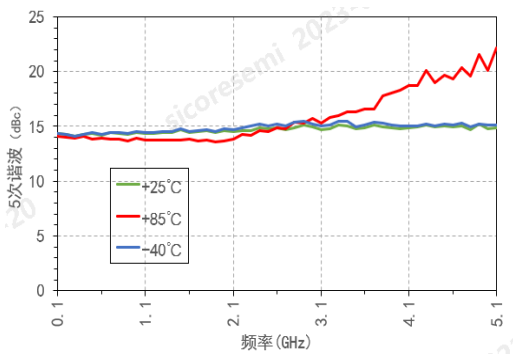
4次谐波 VS 频率



5次谐波 VS 频率

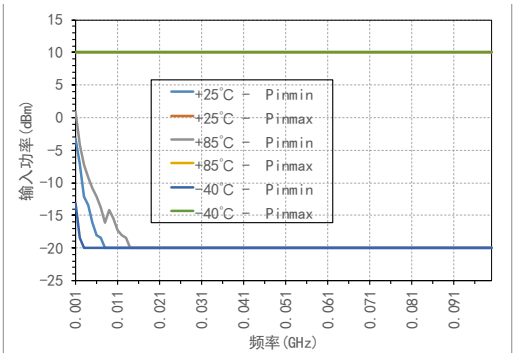


5次谐波 VS 频率

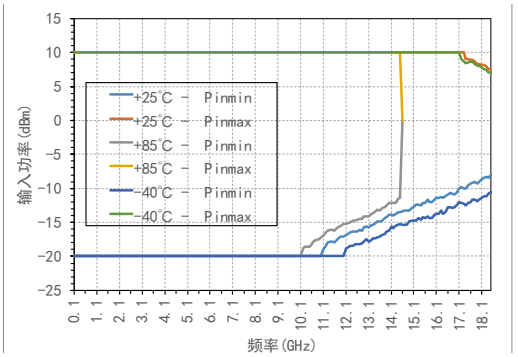


测试曲线(4分频)

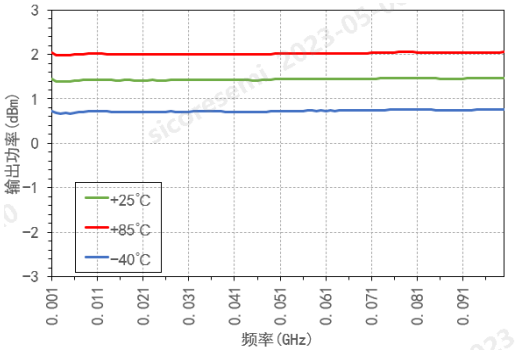
RFOUT分频 灵敏度 VS 频率



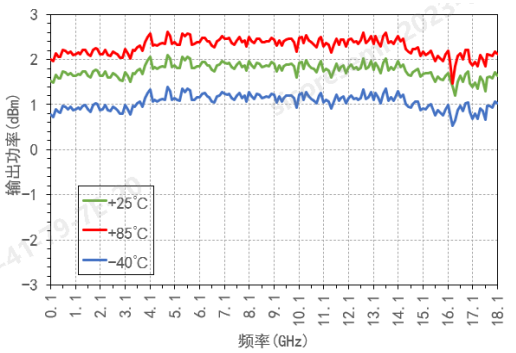
RFOUT分频 灵敏度 VS 频率



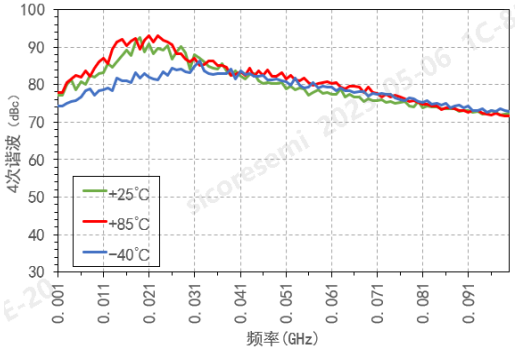
RFOUT输出功率 VS 频率@Pin=0dBm



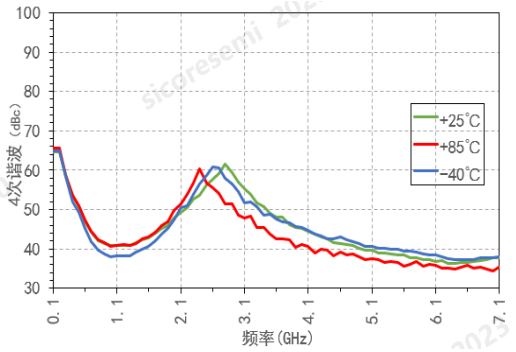
RFOUT输出功率 VS 频率@Pin=0dBm



4次谐波 VS 频率



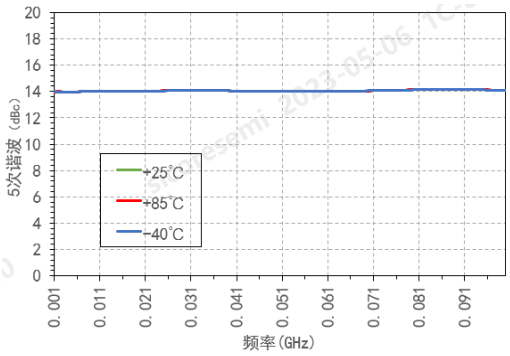
4次谐波 VS 频率



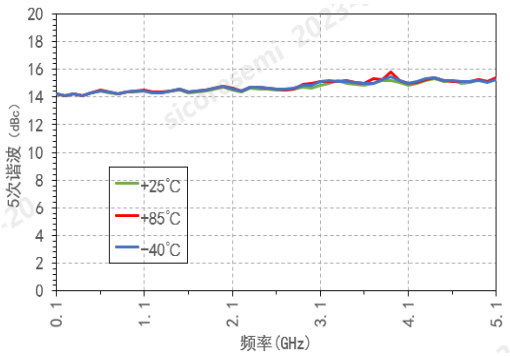
成都仕芯半导体有限公司 Tel:028-62680968 Fax:028-62680967 E-mail:info@sicoresemi.com
地址:成都市高新西区百川路9号
网址:www.sicoresemi.com

测试曲线（4分频）

5次谐波 VS 频率

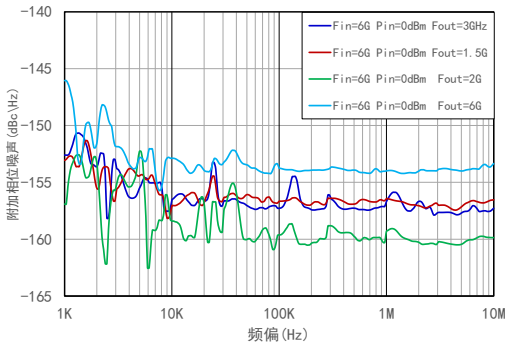


5次谐波 VS 频率

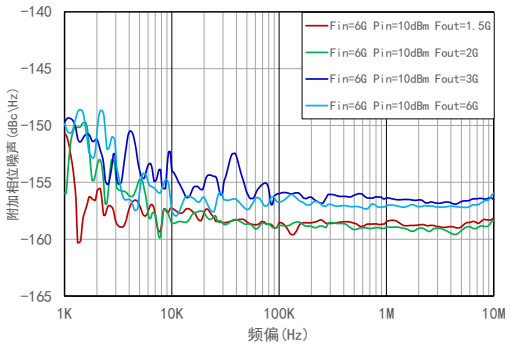


测试曲线

附加相位噪声 VS 频率



附加相位噪声 VS 频率



封装信息

型号	封装材料	焊盘镀层	MSL等级[1]	封装标识[2]	环保要求
SID184SP3	绿色树脂化合物	NiPdAuAg	MSL 3	S184 XXXXX	符合RoHS

[1] 最高回流焊温度260℃

[2] XXXXX为批号

真值表

B1	B0	分频数MOD
0	0	1
0	1	2
1	0	3
1	1	4

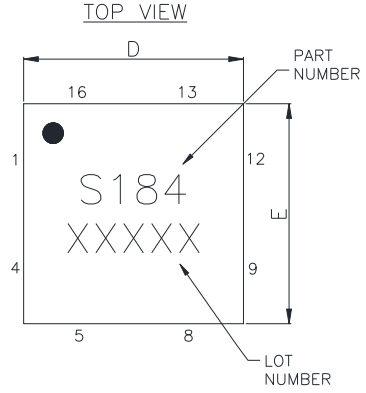
绝对最大额定值

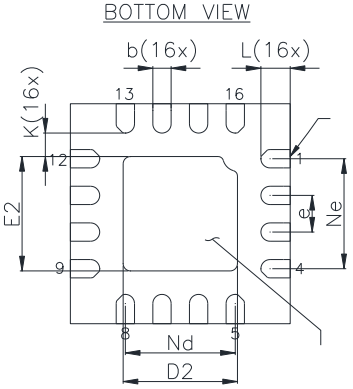
参数	范围
VCC	-0.3V~3.6V
B0,B1端口	-0.3V~VCC+0.3V
工作温度	-40℃~85℃
存储温度	-65℃~150℃
ESD(HBM)	Class 1C

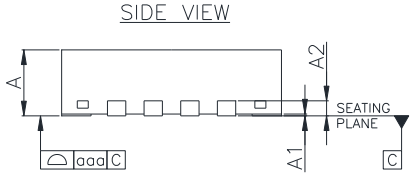
引脚定义

引脚编号	功能符号	功能描述	原理示意图
4	GND	射频地，封装底部exposed paddle也是RF&DC射频地	
2	INP	RF输入必须是直流阻断	
3	INN	RF输入180°相位差。交流单端接地	
11	OUTP	RF输出总线分割	
10	OUTN	RF输出总线分割180°相位差	
1	VCC	提供+3.3V电压	
7-9;12-16	NC	内部无连接	
5-6	B0:B1	逻辑输入端，控制分频数	

封装外形图



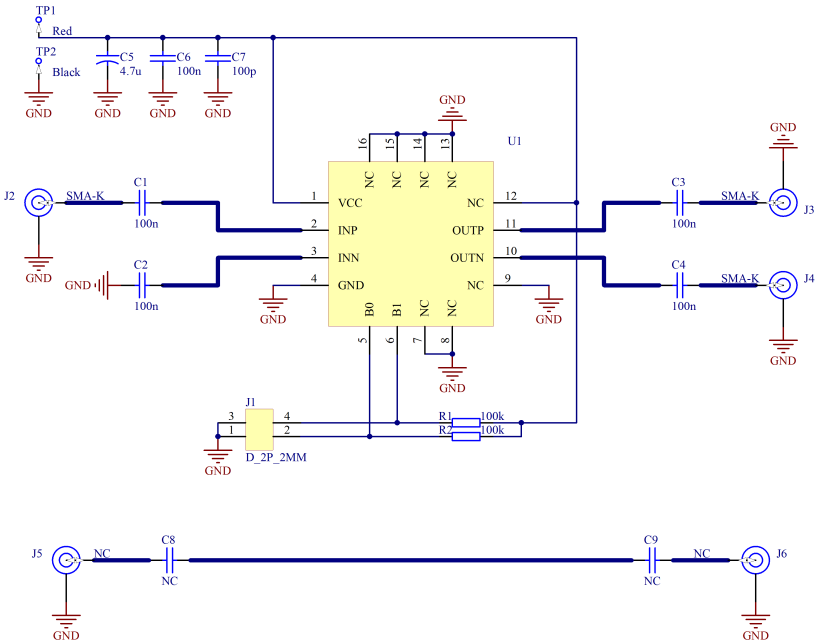


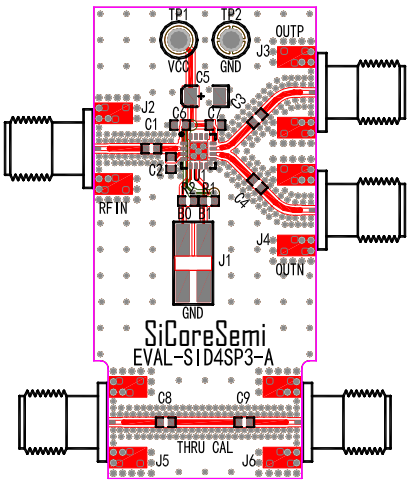


SP3 Dimension Table (unit:mm)			
Symbol	MIN	NOM	MAX
A	0.70	0.75	0.80
A1	0.00	0.02	0.05
A2		0.20Ref	
b	0.18	0.25	0.30
D	2.90	3.00	3.10
D2	1.41	1.56	1.70
e		0.50BSC	
Ne		1.50BSC	
Nd		1.50BSC	
E	2.90	3.00	3.10
E2	1.41	1.56	1.70
K	0.20	---	---
L	0.30	0.40	0.50
aaa		0.08	

说明：
1. 单位：mm
2. 引线框架材料：铜合金
3. 封装表面翘曲：≤0.05mm
4. 所有接地引脚请连接PCB射频地

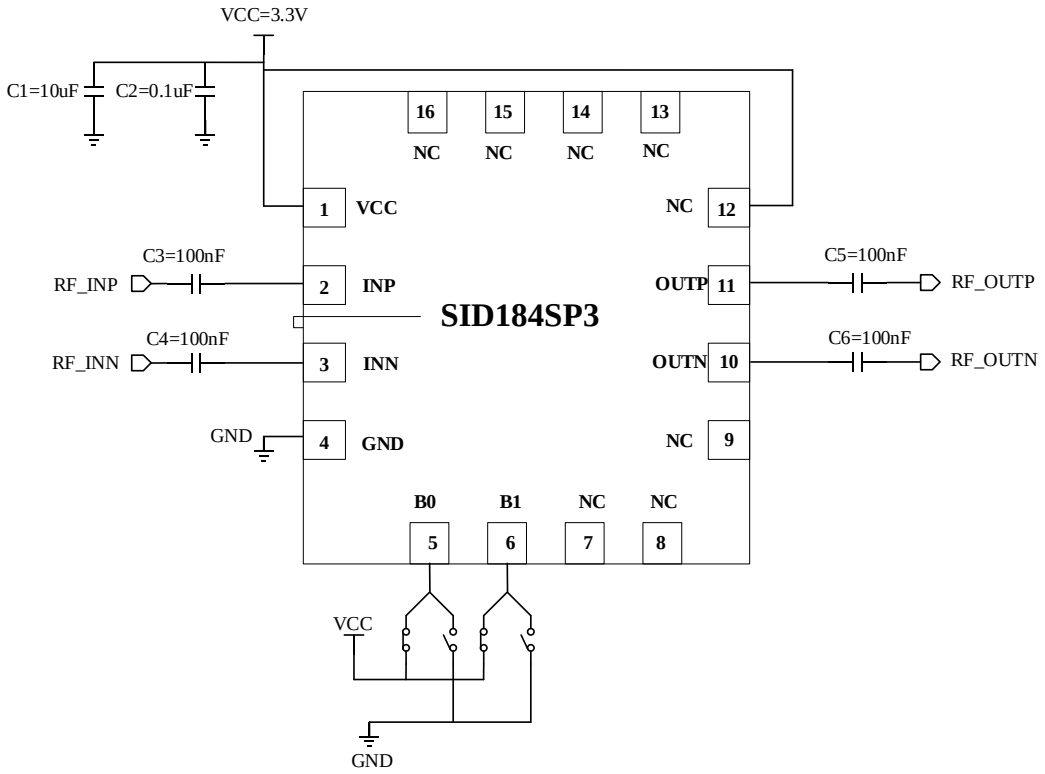
评估板电路图





Designator	Description
C5	钽电容 1206 4.7uF
C1, C2, C3, C4, C6	多层陶瓷电容 0402 100nF
C7	多层陶瓷电容 0402 100pF
J1	2.0mm DC 引脚
J2, J3, J4	SMA-K PCB 连接器
R1, R2	电阻 0402 100k
TP1, TP2	DC测试端子
U1	SID184SP3
J2, J3, J4 推荐使用南京傲文D550B12E01-023型SMA-K连接器	
NC表示为未使用端口或器件不焊接。芯片NC端口外部可连接到GND。	

典型应用图


VCC=3.3V
C1=10uF
C2=0.1uF
16
15
14
13
NC
NC
NC
NC
1
VCC
NC
12
C3=100nF
RF_INP
2
INP
SID184SP3
OUTP
11
C5=100nF
RF_OUTP
C4=100nF
RF_INN
3
INN
OUTN
10
C6=100nF
RF_OUTN
GND
4
GND
NC
9
B0
B1
NC
NC
5
6
7
8
VCC
GND