

### 关键指标

- 频率范围：7GHz~11GHz
- 增益：21.5dB
- 噪声系数：1.2dB
- 输出 P<sub>1</sub>dB：16dBm
- 封装尺寸：QFN3x3mm

### 典型应用

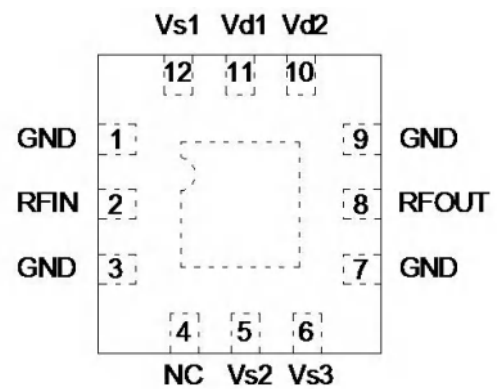
- 卫星通信
- 测试测量仪器
- 雷达

### 产品简介

HX130660F3是无引线 3x3mm 表面贴装封装的 GaAs MMIC 低噪声放大器，工作于7GHz~11GHz,采用 GaAs 工艺制成。该放大器的增益为 21.5dB，输出 P<sub>1</sub>dB 为 16dBm，在+5V 的电压下噪声系数为 1.2dB。

该放大器内部匹配到 50 欧姆。

### 功能框图



### 电性能 (T<sub>A</sub>=25°C, V<sub>D</sub>=+5V, I<sub>D</sub>=42mA, Z<sub>0</sub>=50Ω)

指标	最小值	典型值	最大值	单位
频率	7~11			GHz
增益	20	21.5	23	dB
增益平坦度	—	±1.5	—	dB
反向隔离度	-30	-34	—	dB
输入/输出回波损耗	—	-12	-8	dB
噪声系数	—	1.2	1.4	dB
输出 P <sub>1</sub> dB	13	16	—	dBm
输出 IP <sub>3</sub>	—	28	—	dBm

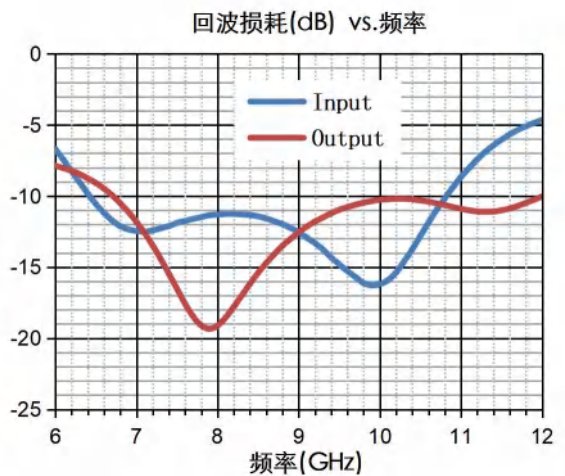
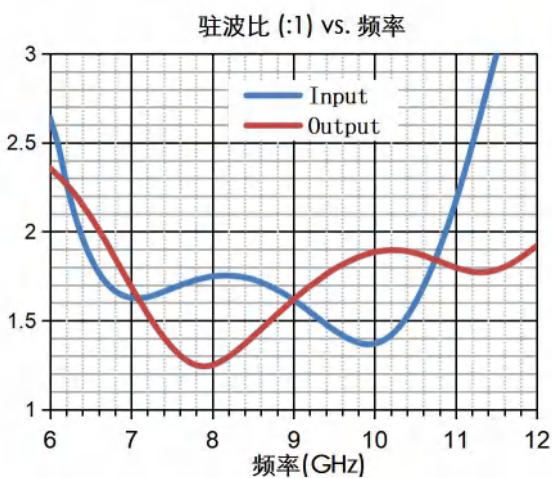
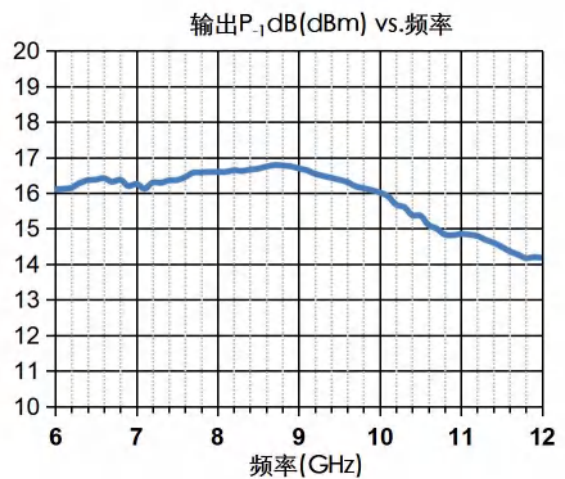
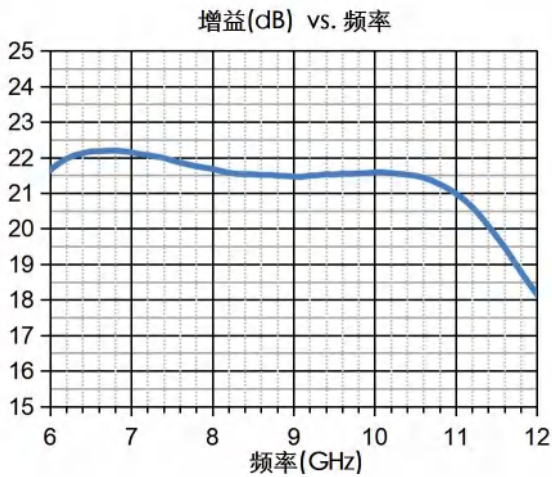
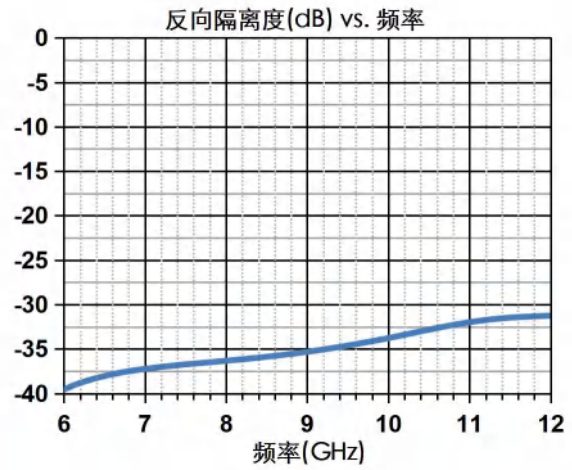
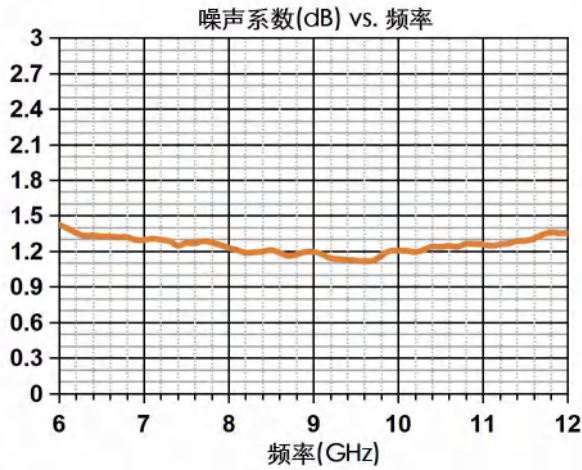
### 绝对最大额定值

最大输入功率	+20dBm	工作温度	-55°C~+85°C
沟道温度	+150°C	贮存温度	-65°C~+150°C
最大 V <sub>D</sub>	+6V		

典型测试曲线

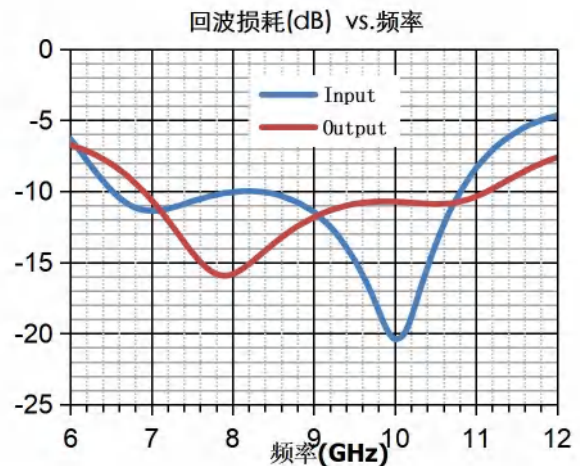
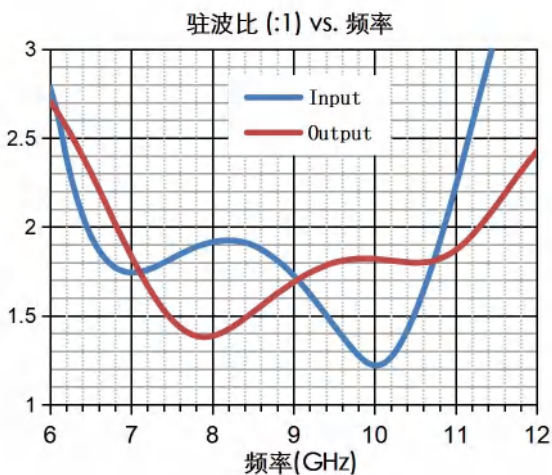
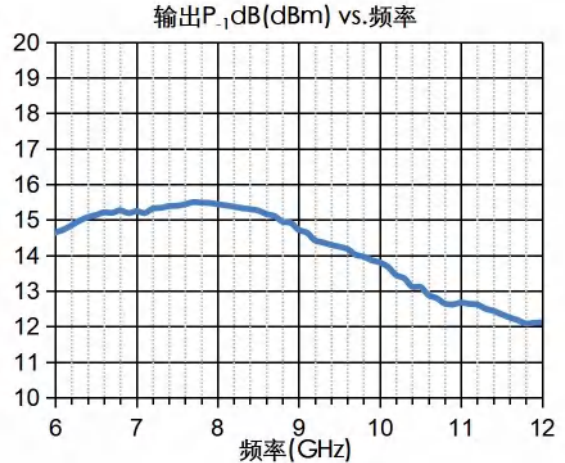
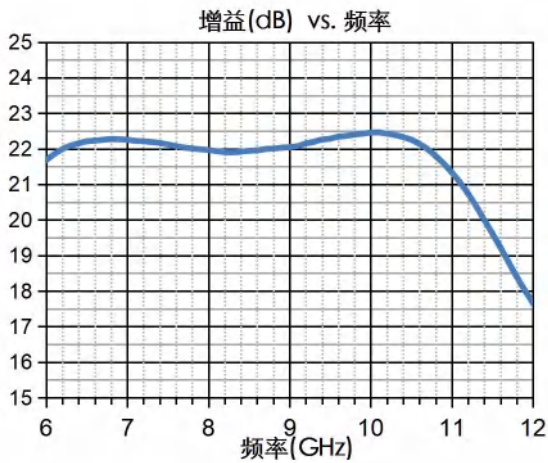
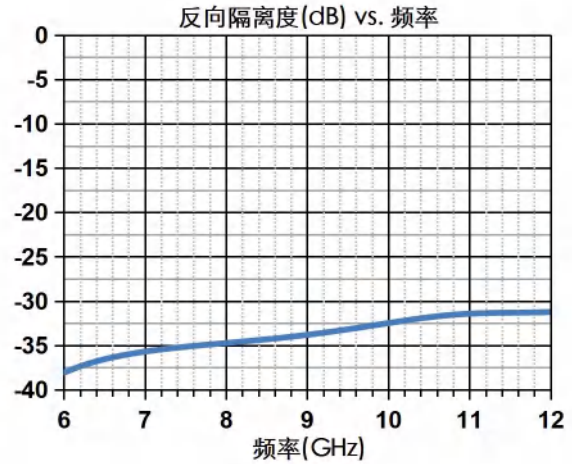
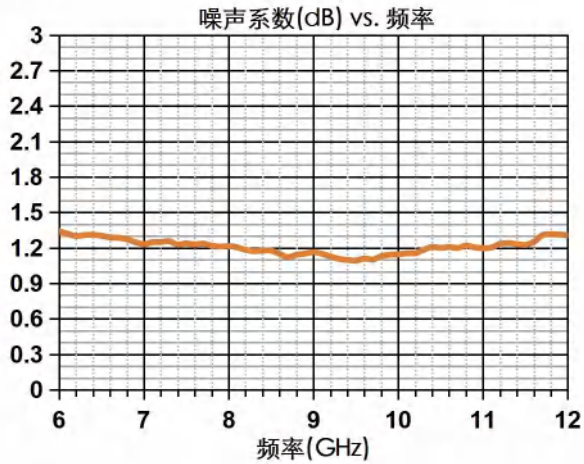
LNA bias at Vd1=5V, Id1=15mA, Vd2=5V, Id2=30mA

Vs1, Vs2, Vs3 no connect to GND



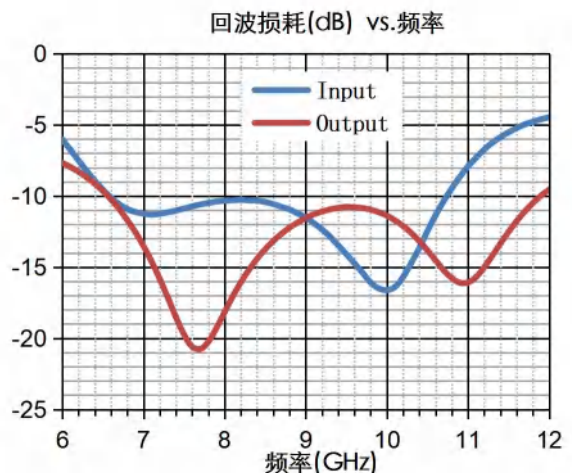
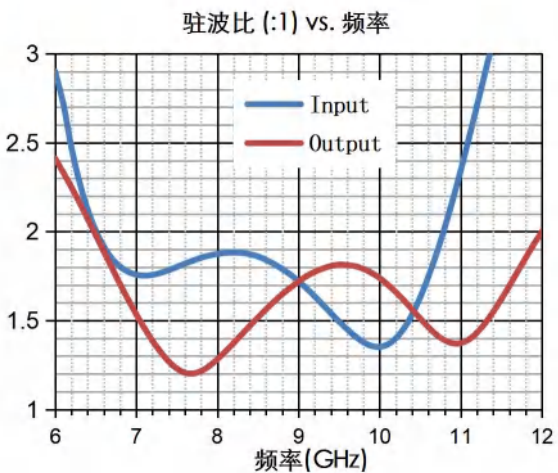
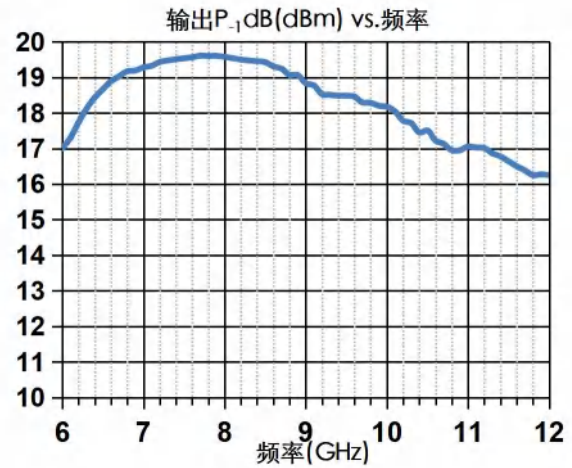
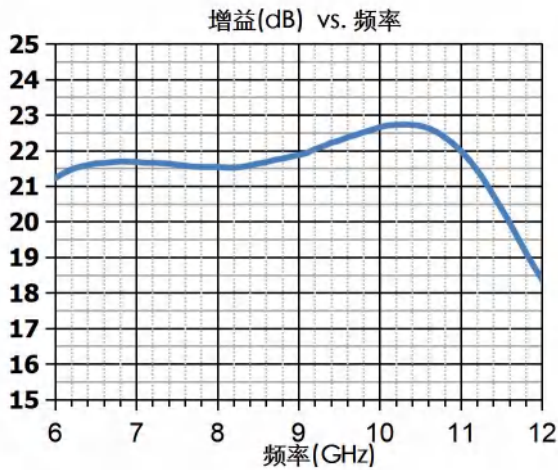
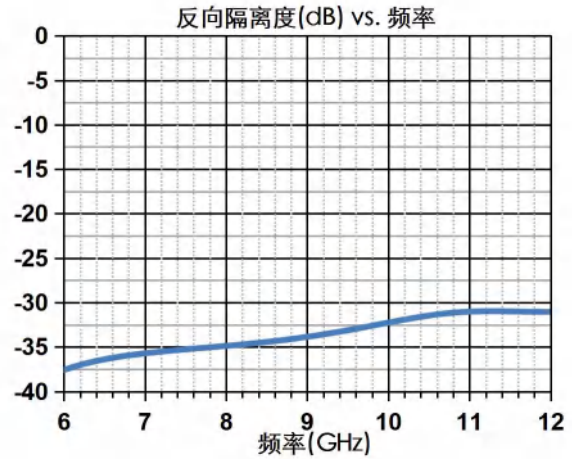
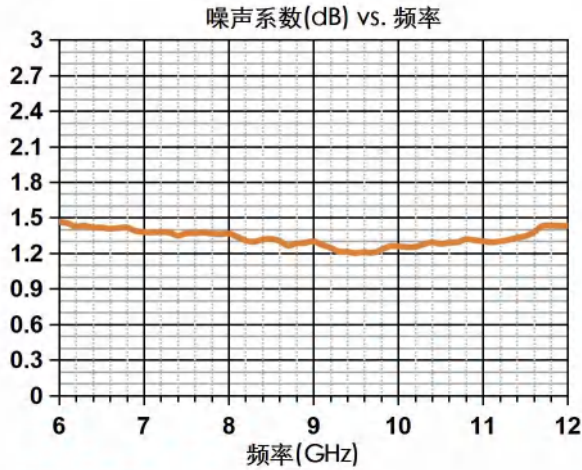
典型测试曲线

LNA bias at  $Vd1=3V, Id1=27mA, Vd2=4V, Id2=28mA$   
 (Vs1 connect to GND). the lowest noise figure Application



典型测试曲线

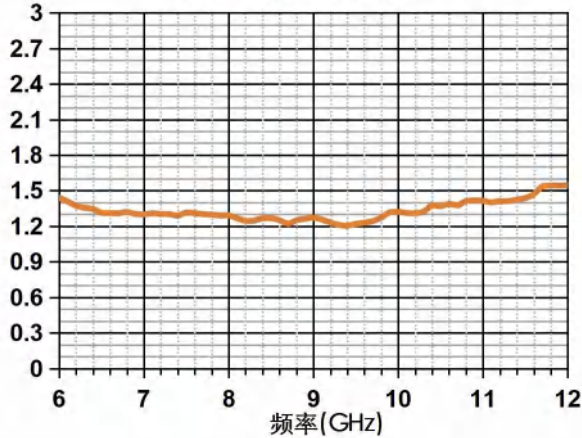
LNA bias at  $V_{d1}=3V, I_{d1}=15mA, V_{d2}=6V, I_{d2}=56mA$   
 ( $V_{s3}$  connect to GND). the highest  $P_{-1dB}$  Application



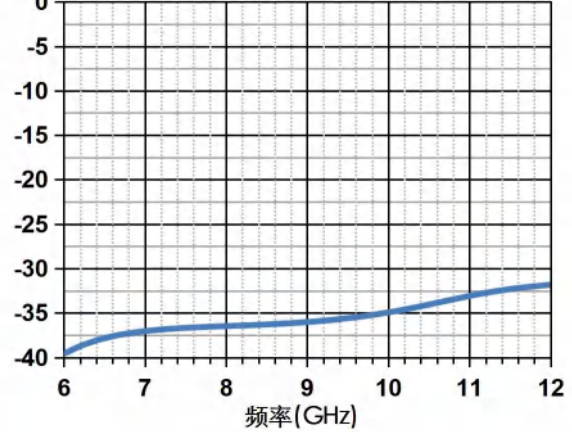
典型测试曲线

LNA bias at  $V_{d1}=5V, I_{d1}=28mA, V_{d2}=5V, I_{d2}=30mA$   
 (Vs1 connect to GND).

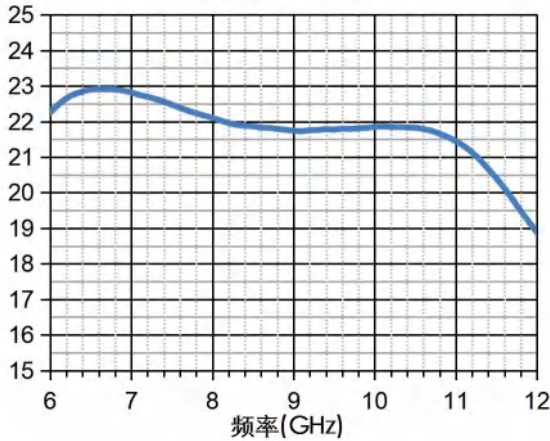
噪声系数(dB) vs. 频率



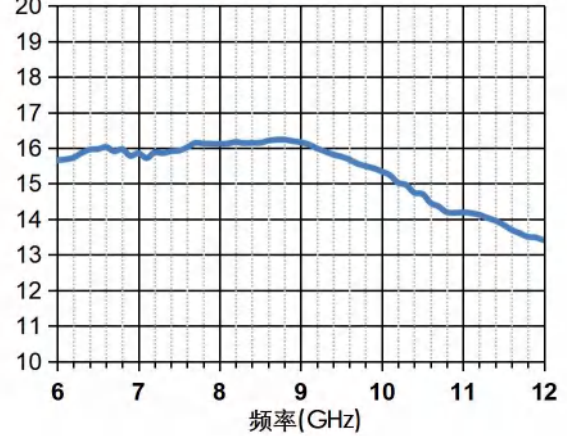
反向隔离度(dB) vs. 频率



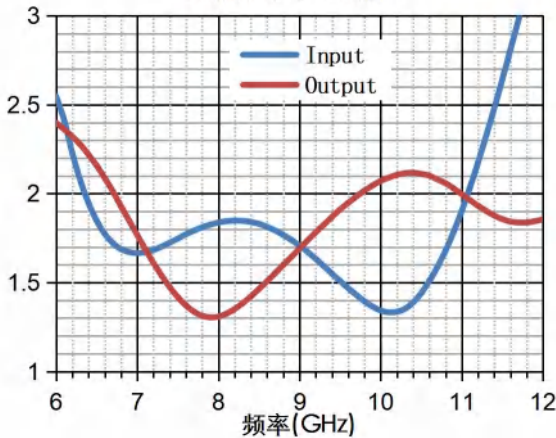
增益(dB) vs. 频率



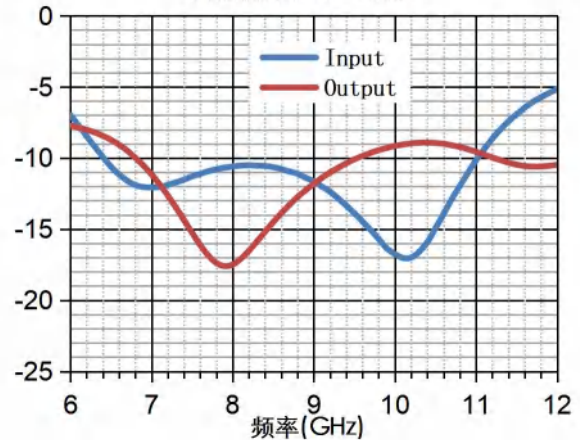
输出P<sub>1</sub>(dBm) vs. 频率

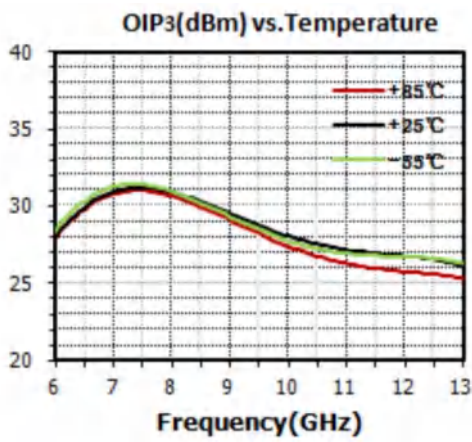


驻波比 (:1) vs. 频率

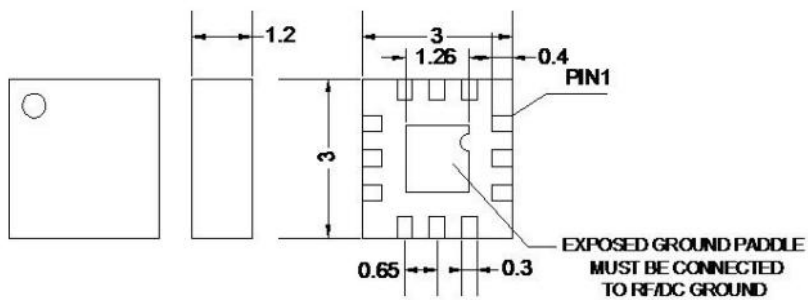


回波损耗(dB) vs. 频率





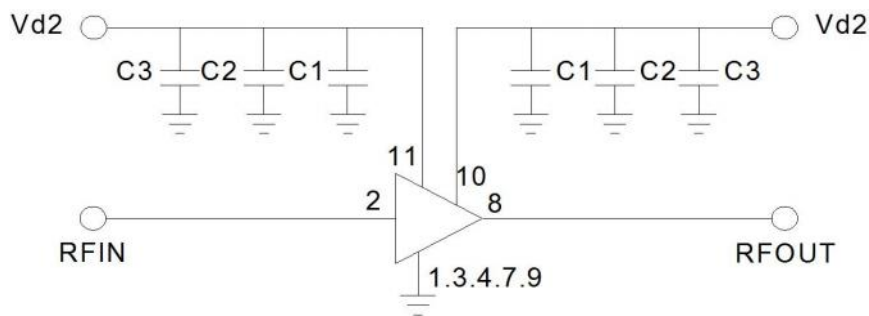
外形尺寸图(mm)



引脚定义

Pin No.	Func.	Pin No.	Func.
1	Connect to GND	7	Connect to GND
2	RF IN	8	RF OUT
3	Connect to GND	9	Connect to GND
4	NC	10	Vd2 Supply
5	Vs2	11	Vd1 Supply
6	Vs3	12	Vs1

## 装配图



## 元件清单

编号	数值	型号	制造商	尺寸
C1	100pF	GCM1555C1H101JA16D	村田	0402
C2	1000pF	GRM1555C1H102JA01D	村田	0402
C3	0.1 $\mu$ F	GCM155R71C104JA55D	村田	0402

## 注意事项:

- 1、产品防潮等级为 2a 级，存放环境小于或等于 30° C/60% RH，四周车间寿命；
- 2、撤除真空包装，上回流焊前需在 125+/-5° 环境中烘焙 6 小时，方可焊接。