

性能特点

射频频率范围：21~24 GHz

本振频率范围：8.5~13.5 GHz

变频增益：15.5 dB

噪声系数：2.5 dB

输入 IP3：0 dBm

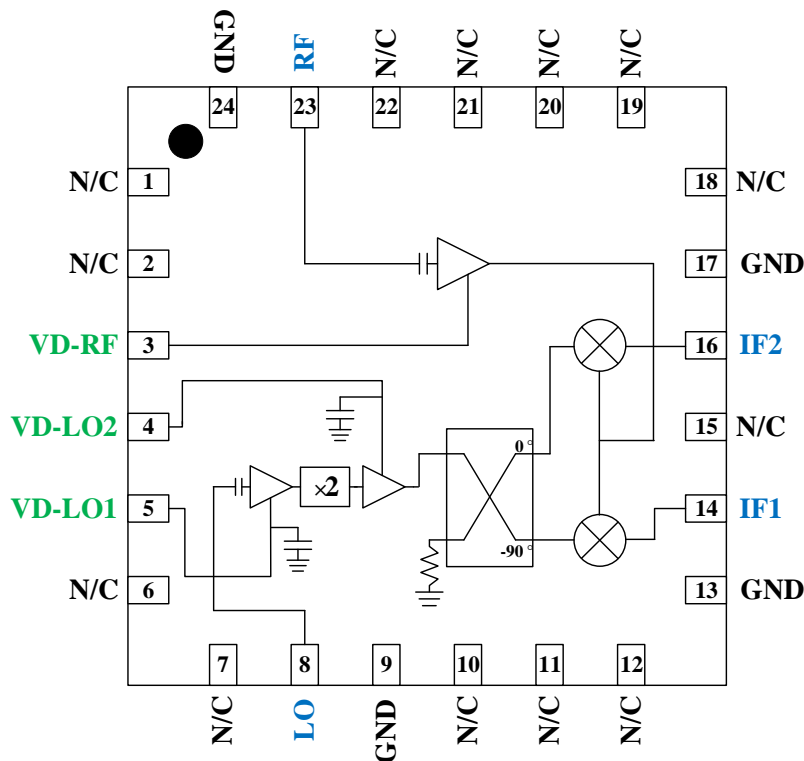
射频供电：3.5V@80mA；

本振供电：3.5V@80mA

芯片尺寸：4 mm×4 mm

产品简介

ZRM7301 是一款 GaAs pHEMT MMIC I/Q 下变频芯片，芯片由镜像抑制混频器、本振有源倍频放大器和低噪声放大器组成，其工作频率覆盖 21~24GHz。变频增益 15.5dB，噪声系数 2.5dB，带内镜像抑制度 25dBc 以上。ZRM7301 提供 I/Q 混频输出，但需要外接 90°电桥选择所需边带。ZRM7301 使用 QFN 封装，芯片面积 4×4×0.75mm，共 24 引脚。



芯片功能框图

性能参数表

发射电参数($T_A=+25^{\circ}\text{C}$, $V_{d_RF}=3.5\text{ V}$, $V_{d_LO}=3.5\text{ V}$, $I_F=1.5\text{ GHz}$, $P_{LO}=6\text{ dBm}$)

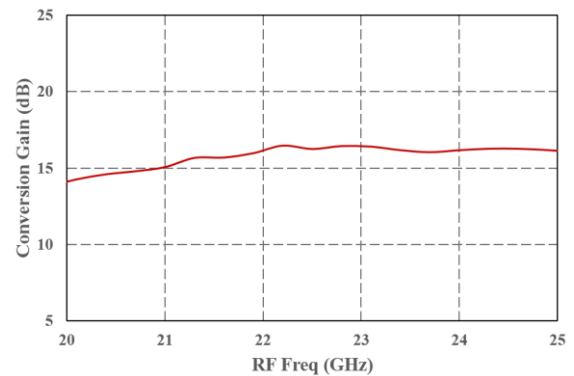
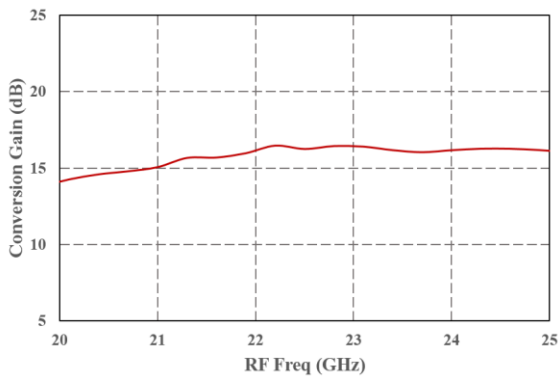
Parameter	ZRM7301			Units
	Min.	Typ.	Max.	
Frequency range, RF	21-24			GHz
Frequency range, LO	8.75-13.5			GHz
Frequency range, IF	DC-3.5			GHz
LO Driver Range	2	4	6	dBm
Conversion Gain		15.5		dB
Image Rejection		25		dBc
Noise Figure		2.5		dB
Input P ₁ dB		-10		dBm
Output P ₁ dB		2.5		dBm
Input IP3		0		dBm
Output IP3		15		dBm
RF Return Loss		13		dB
LO Amplifier Current		80		mA
RF Amplifier Current		80		mA

典型性能参数

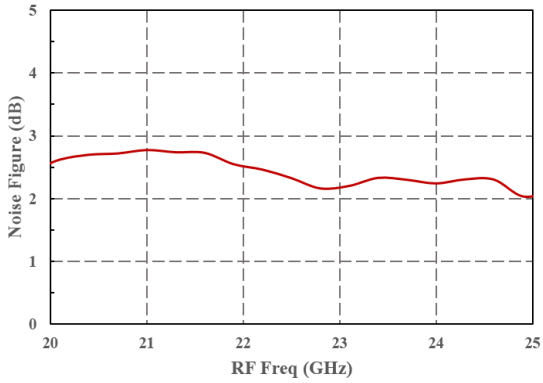
Data Taken As IRM With External IF 90° Hybrid, IF=RF-LO= 1.5 GHz

变频增益

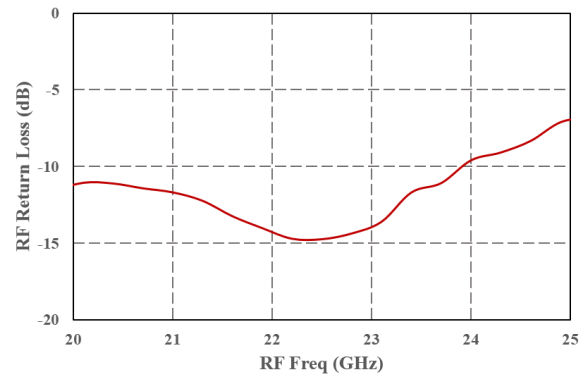
镜像抑制度



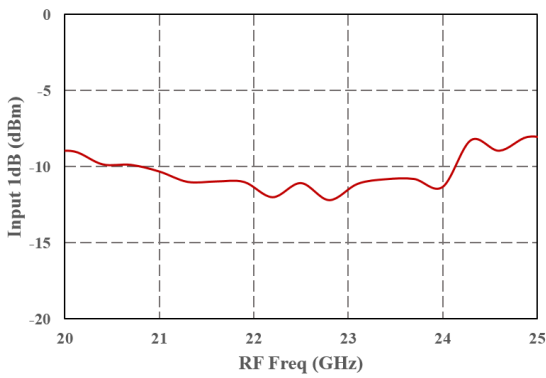
噪声系数



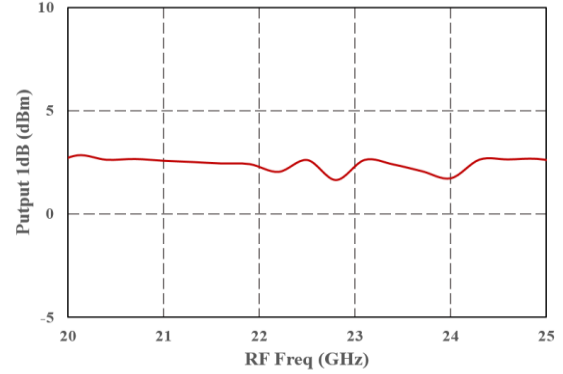
射频回波损耗



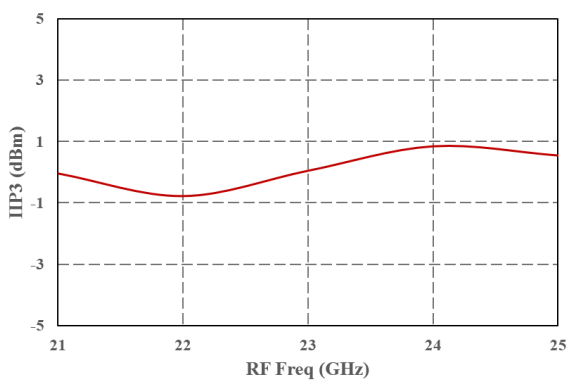
输入 1dB 压缩点



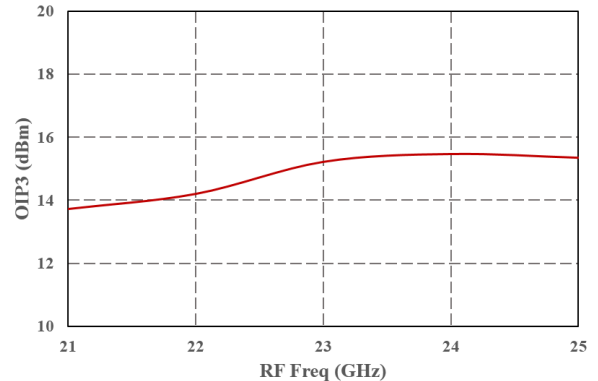
输出 1dB 压缩点



输入 IP3

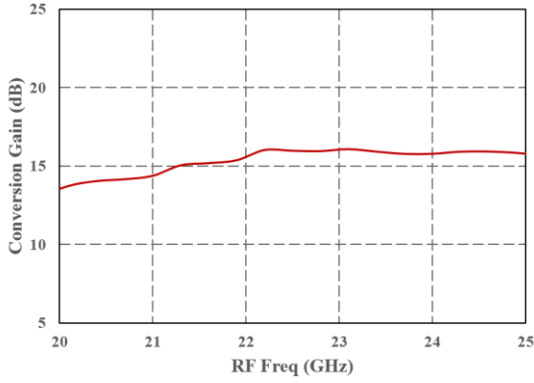


输出 IP3

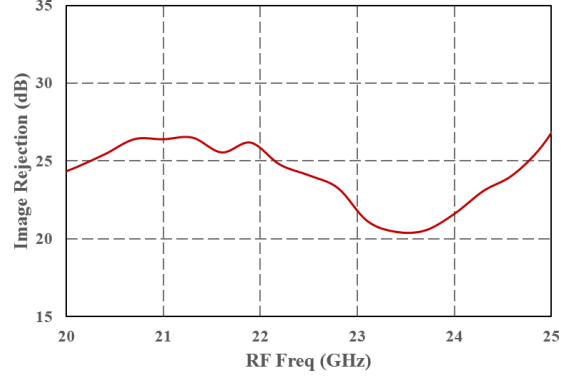


Data Taken As IRM With External IF 90° Hybrid, IF=RF-LO= 3 GHz

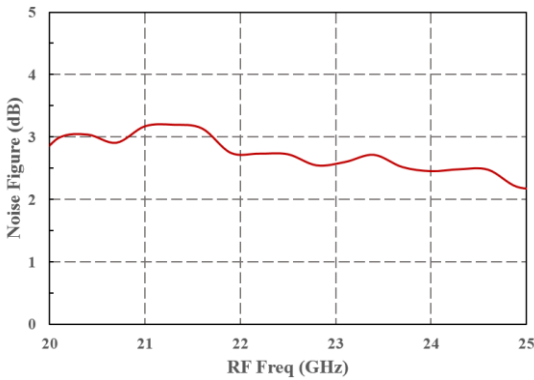
变频增益



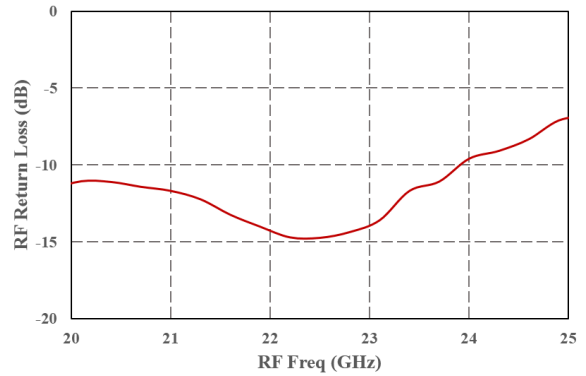
镜像抑制度



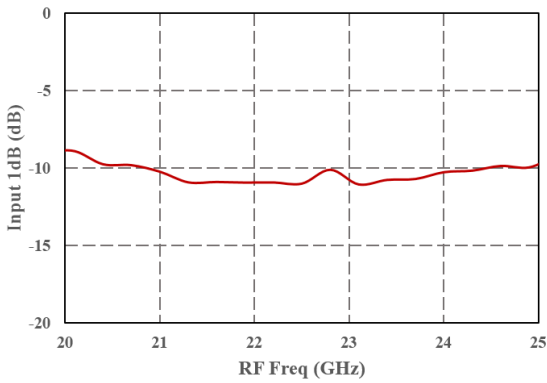
噪声系数



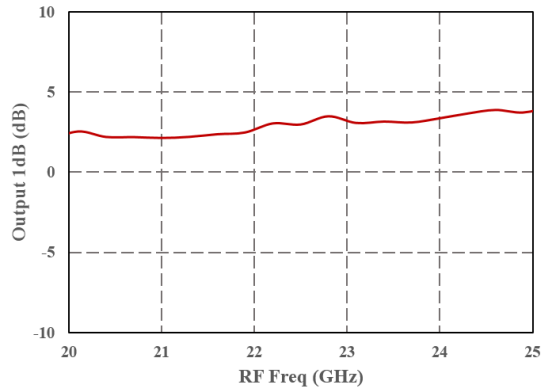
射频回波损耗



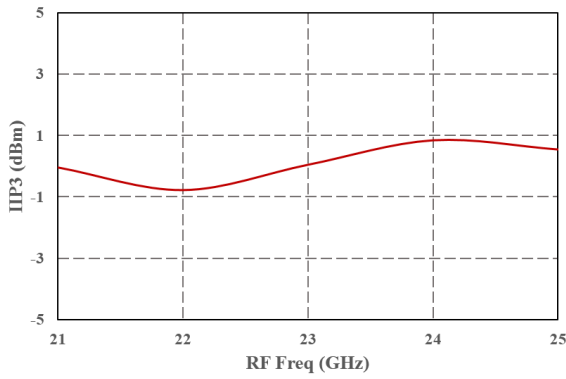
输入 1dB 压缩点



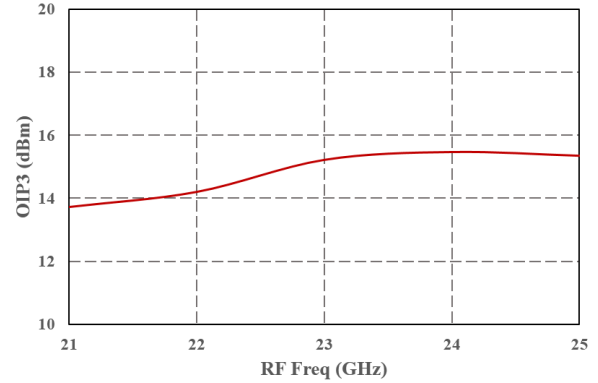
输出 1dB 压缩点



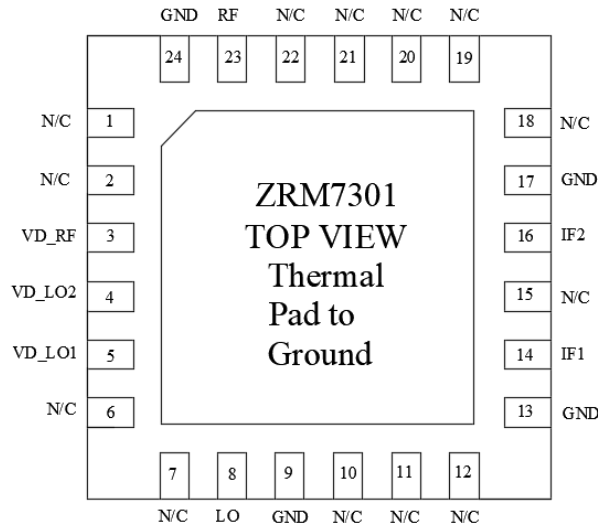
输入 IP3



输出 IP3

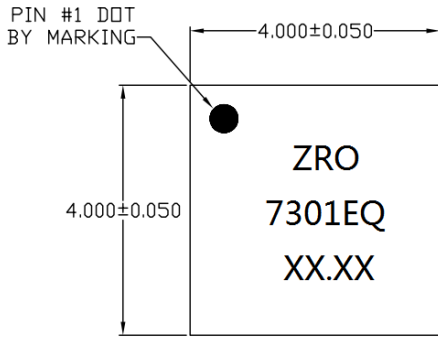


管脚描述

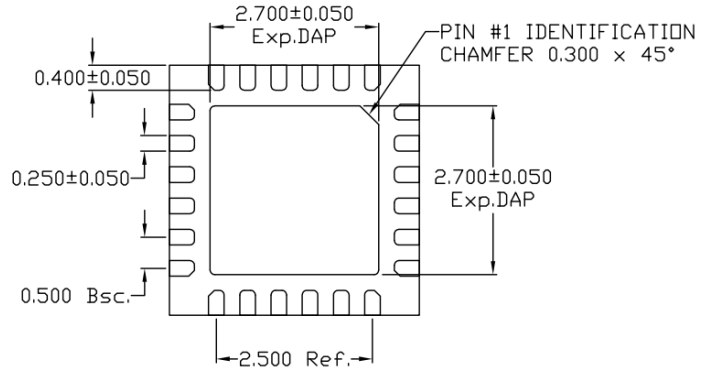


管脚号	管脚名	管脚描述
1,2,6,7,10,11,12,15,18,19,20,21,22	N/C	不连接
3	VD_RF	射频供电接口
4,5	VD_LO2,VD_LO1	本振供电接口
8	LO	本振信号接口
9,13,17,24	GND	接地
14,16	IF1,IF2	中频信号接口
23	RF	射频信号接口

外形尺寸



TOP VIEW

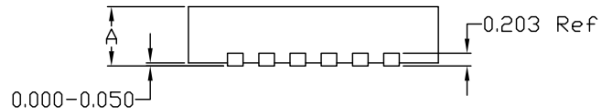


BOTTOM VIEW

NOTE:

1) TSLP AND SLP SHARE THE SAME EXPOSE OUTLINE BUT WITH DIFFERENT THICKNESS:

A		TSLP	SLP
	MAX.	0.800	0.900
NOM.	0.750	0.850	
MIN.	0.700	0.800	



SIDE VIEW