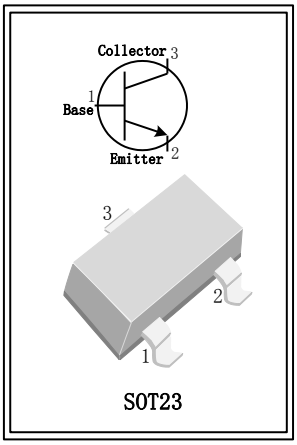
PBR951 NPN TRANSISTOR

MICROWAVE LOW NOISE AMPLIFIER NPN SILICON EPITAXIAL TRANSISTOR

1. 简述:



- 本芯片采用硅外延工艺制造，具有高功率增益放大、宽带以及低噪声、低漏电流、小结电容特性，较大的动态范围，理想的电流线性;
- 主要应用于超高频微波、VHF、UHF 和 CATV 高频宽带低噪声放大器中，如卫星电视调谐器、CATV 放大器、模拟数字无绳电话、雷达感应探测器、无线安防报警器、射频模块和光纤模块等产品;
- 封装形式(Package): SOT23。

2. 封装形式和引脚定义:

型号(Model)	PBR951	PBR951B
封装形式(Package)	SOT23	SOT23
本体激光标示(Marking)	W2	W2+

3. 极限参数（Tamb=25℃）:

参数名称	符号	PBR951	PBR951B	单位
集电极-基极电压	V_{CBO}	20	30	V
集电极-发射极电压	V_{CEO}	10	23	V
发射极-基极电压	V_{EBO}	1.5	3.0	V
集电极电流	I_{CM}	100	100	mA
耗散功率	P_T	365	365	mW
芯片结温	T_J	150	150	℃
储存温度	T_{stg}	-65 ~ +150		℃

4. 电参数及规格（Tamb=25℃）:

参数名称	符号	测试条件		最小值	典型值	最大值	单位
集电极-基极击穿电压	BV_{CBO}		PBR951	20			V
			PBR951B	30	-	-	
集电极-发射极击穿高压	BV_{CEO}		PBR951	10			V
			PBR951B	23	-	-	
集电极-发射极击穿电压	BV_{CEO}		PBR951	1.5	-	-	V
			PBR951B	3.0			
集电极截止电流	I_{CBO}	V_{CB}=10V,I_E=0		-	-	0.1	μA
直流电流放大系数	h_{FE}	V_{CE}=6V,I_C=5mA VCE=6V,IC=15mA	PBR951	50	100 100	250	
		V_{CE}=10V,I_C=5mA VCE=10V,IC=15mA	PBR951B	50	100 100	250	
特征频率	f_T	V_{CE}=8V,I_C=30mA	PBR951	8.5	9.0	-	GHz
		V_{CE}=10V,I_C=20mA	PBR951B	8.0	8.5		
反馈电容	Cre	I_C=i_C=0,V_{CB}=6V,f=1MHz		-	0.4	-	pF
集电极电容	CC	I_E=i_e=0,V_{CB}=8V,f=1MHz		-	0.6	-	pF
发射极电容	Ce	I_C=i_C=0,V_{EB}=0.5V,f=1MHz		-	1.5	-	pF
插入功率增益	$\|S_{21}\|^2$	I_C=30mA,V_{CE}=6V,f=1GHz	PBR951	13	14	-	dB
		I_C=20mA,V_{CE}=10V,f=1GHz	PBR951B	12	13		

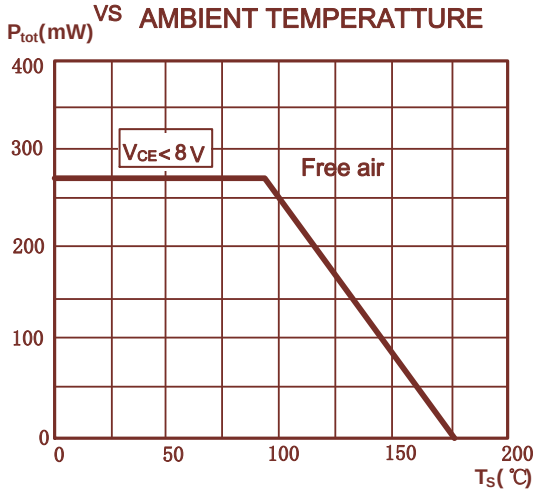
噪声系数	NF	V_{CE}=6V,I_C=5mA,f=1GHz		-	1.3	-	dB
		V_{CE}=6V,I_C=5mA,f=2GHz		-	2.0	-	dB
最大单边功率增益	G_{UM}	I_C=30mA,V_{CE}=6V,f=1GHz	PBR951	-	15	-	dB
		I_C=30mA,V_{CE}=6V,f=2GHz		-	8.5	-	dB
		I_C=20mA,V_{CE}=6V,f=1GHz	PBR951B		14		dB
		I_C=20mA,V_{CE}=6V,f=2GHz			7.5		dB

其中：$G_{UM} = 10\log\frac{|S_{21}|^2}{(1-S_{11})^2(1-S_{22})^2} dB$

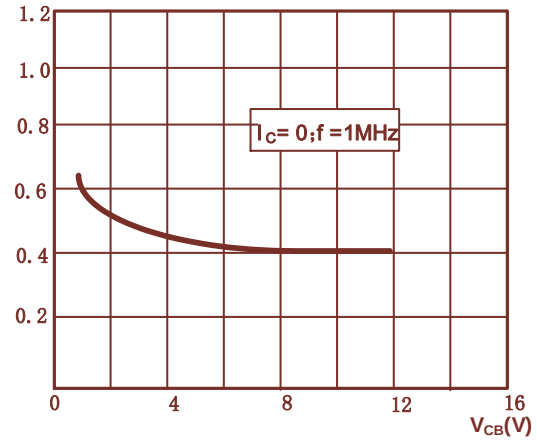
5. 典型特征曲线：

TYPICAL CHARACTERISTICS
(T_A=25℃,unless otherwise specified)

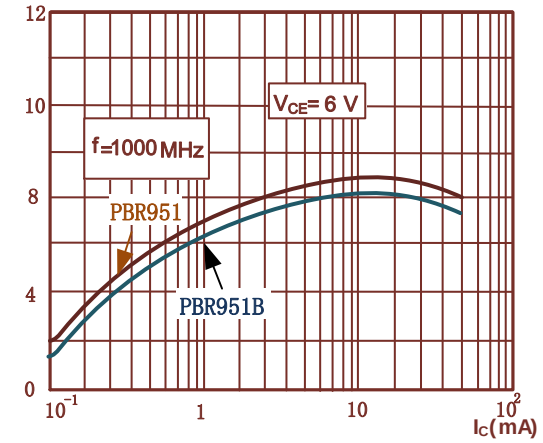
TOTAL POWER DISSIPATION VS AMBIENT TEMPERATTURE



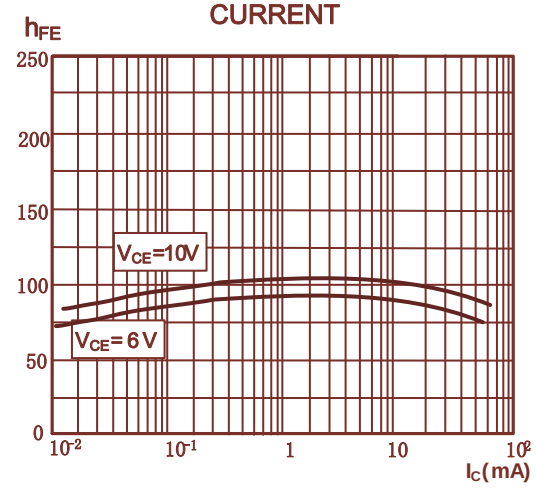
REVERSE TRANSFER CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE



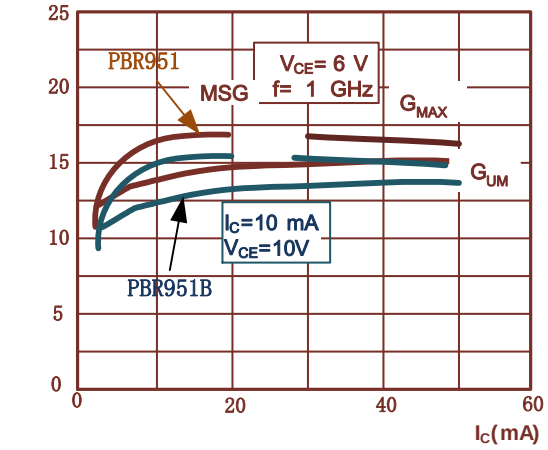
FREQUENCY VS. COLLECTOR CURRENT



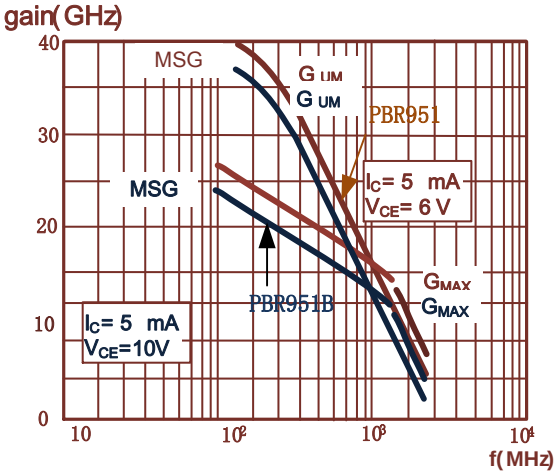
DC CURRENTVS. COLLECTOR CURRENT



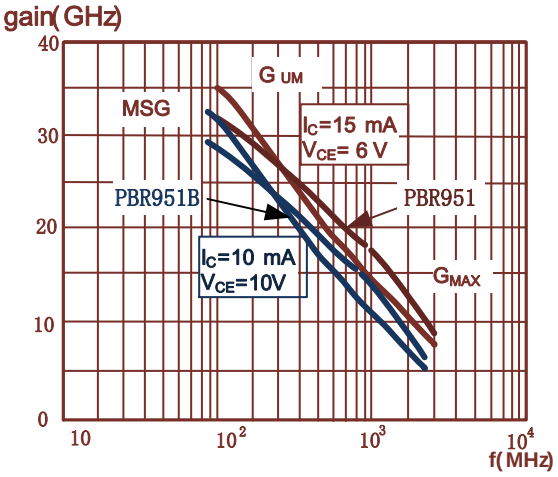
GAINvs. FUNCTION of COLLECTOR CURRENT



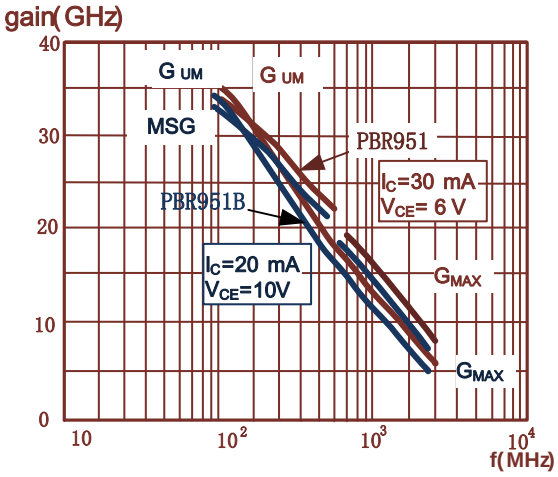
GAINvs. FUNCTION of FREQUENCY



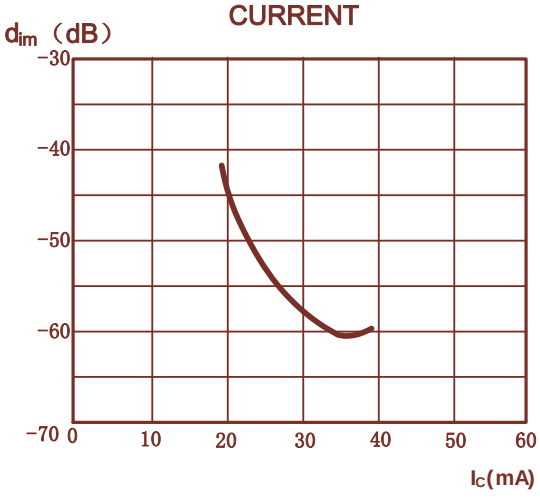
GAIN vs. FUNCTION of FREQUENCY



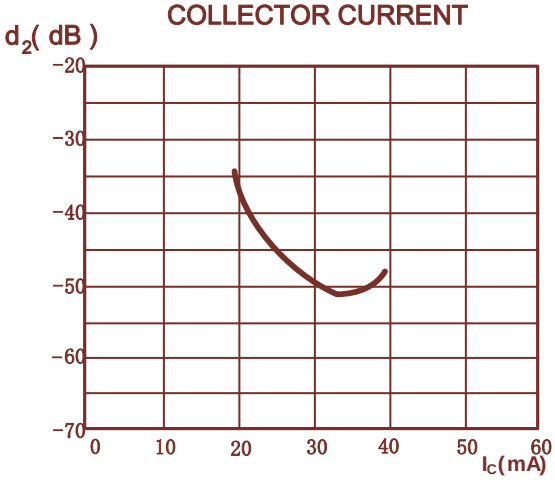
GAIN vs. FUNCTION of FREQUENCY



INTERMODULATION DISTORTION vs. FUNCTION of COLLECTOR CURRENT



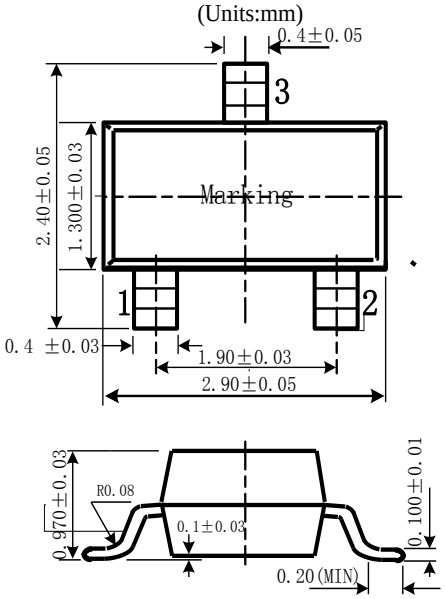
SECOND ORDER INTERMODULATION DISTORTION vs. FUNCTION of COLLECTOR CURRENT



6. 封装尺寸示意图:

SOT-23 PACKAGE DIMENSIONS

(Units:mm)



PIN CONNECTIONS

1.Base 2. Emitter 3.Collector

7. 包装信息:

PACKAGE INFORMATION

Device	Package	Shipping	Inner Box	Carton
PBR951	SOT-23	3000/Tape&Reel	10 Tape&Reel	4 Inner Box
PBR951B	SOT-23	3000/Tape&Reel	10 Tape&Reel	4 Inner Box