



描述

FC6356 是国芯佳品半导体有限公司生产的超高频低噪声晶体管，采用平面 NPN 硅外延双极型工艺。具有高功率增益、低噪声系数、大动态范围和理想的电流特性，采用 SC59 贴片式封装，主要应用于 VHF，UHF 和 CATV 高频宽带低噪声放大器。

主要特性

高增益: $|S_{21e}|^2$ 典型值为 11dB
低噪声: NF 典型值为 1.5dB
增益带宽乘积: f_T 典型值为 7GHz

@ $V_{CE}=10V$, $I_C=20mA$, $f=1GHz$
@ $V_{CE}=10V$, $I_C=7mA$, $f=1GHz$
@ $V_{CE}=10V$, $I_C=20mA$, $f=1GHz$

订购信息

产品号	标准包装
FC6356	3K/盘

极限工作条件范围 (TA=25°C)

参数	符号	极值	单位
集电极基极击穿电压	VCBO	20	V
集电极发射极击穿电压	VCEO	12	V
发射极基极击穿电压	VEBO	3.0	V
集电极电流	IC	100	mA
功耗	PC	200	mW
结温度	Tj	150	°C
存储温度	Tstg	-65 ~ +150	°C

HFE 档位

分档	B	C	D
标号	R25		
HFE	90-140	130-180	170-250

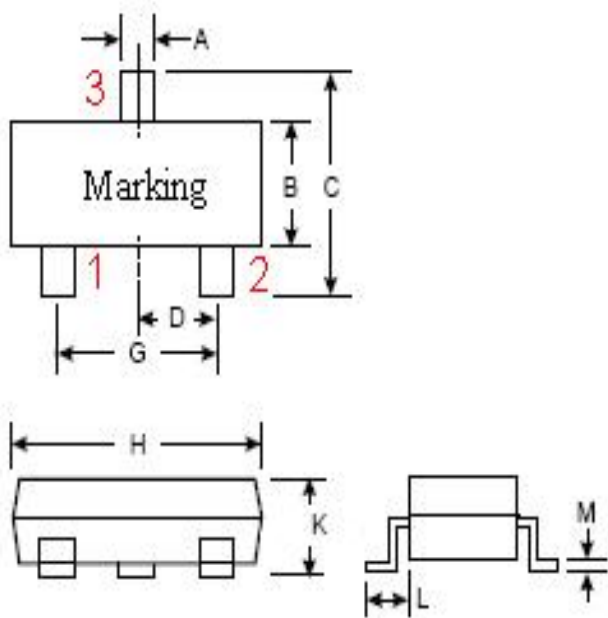
电学特性 (TA=25°C)

参数	符号	最小	典型	最大	单位	测试条件
集电极基极击穿电压	VCBO	20			V	IC=1.0μA
集电极基极漏电流	ICBO			0.1	μA	VCB=10V
发射极基极漏电流	IEBO			0.1	μA	VEB=1V
增益带宽乘积	f _T	5	7		GHz	VCE=10V, IC=20mA
输出反馈电容	Cre		0.65		pF	VCB=10V, IE=0mA, f=1MHz
功率增益	S _{21e} ²		11		dB	VCE=10V, IC=20mA, f=1GHz
噪声因子	NF		1.5		dB	VCE=10V, IC=7mA, f=1GHz

封装形式

SC59

管脚定义：1：基极 (Base) 2：发射极 (Emitter) 3：集电极 (Collector)

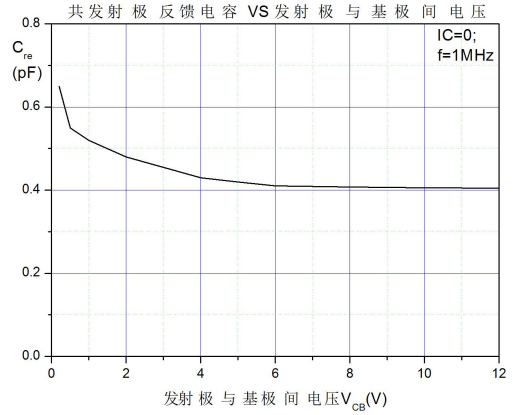
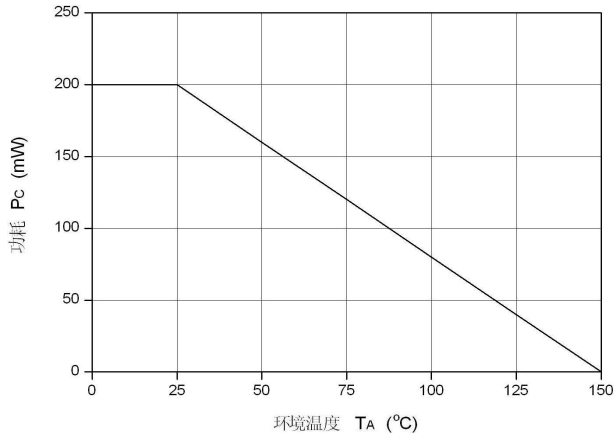


SC-59		
符号	最小值 (mm)	最大值 (mm)
A	0.35	0.5
B	1.4	1.7
C	2.7	3.1
D	0.95	
G	1.7	2.1
H	2.7	3.1
K	1	1.3
L	0.5	0.85
M	0.1	0.35

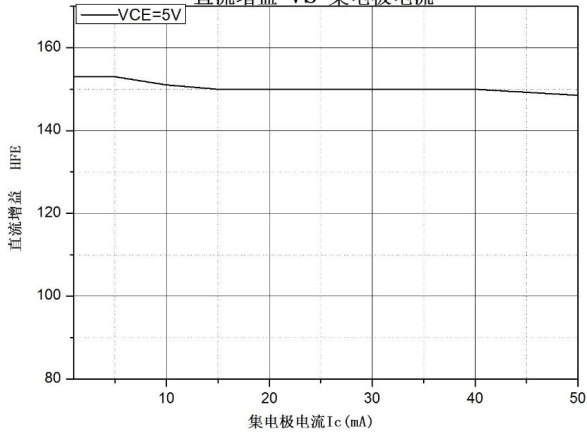


典型特性曲线 (TA = 25°C)

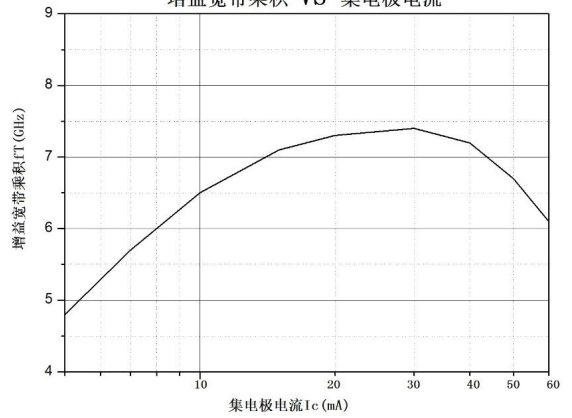
功耗 vs. 环境温度



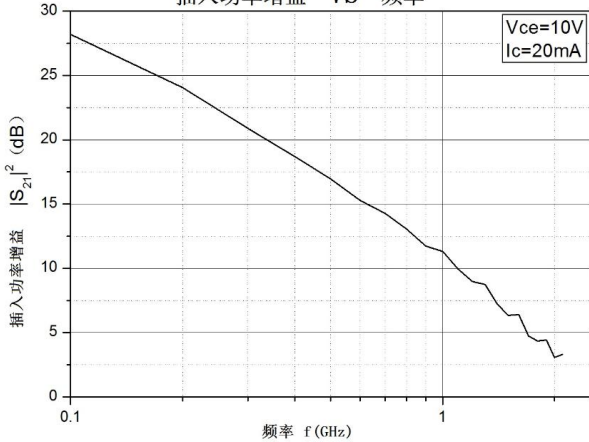
直流增益 VS 集电极电流



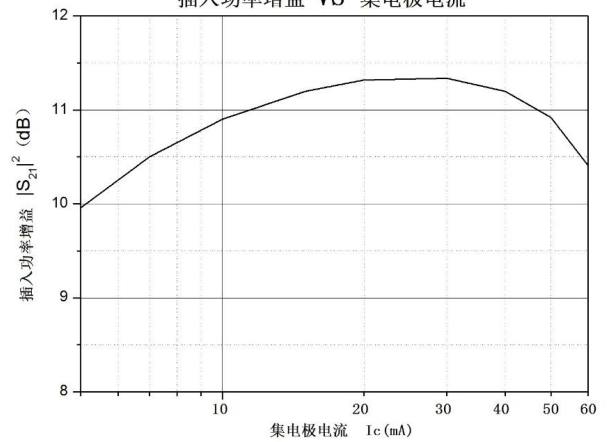
增益带宽乘积 VS 集电极电流

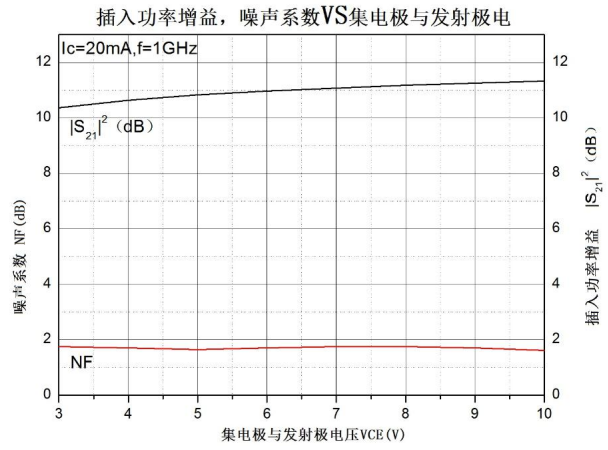
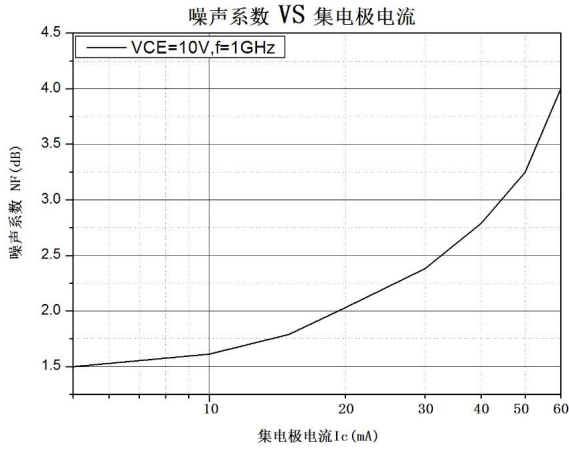


插入功率增益 VS 频率



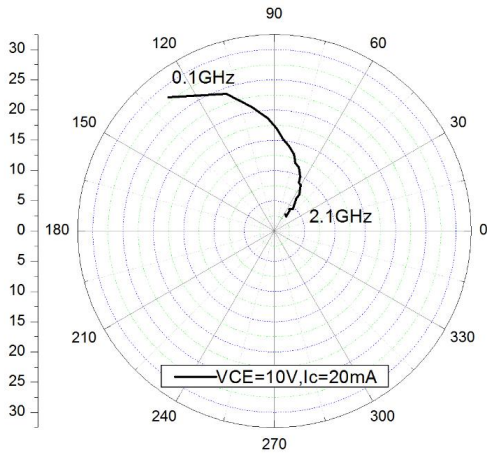
插入功率增益 VS 集电极电流



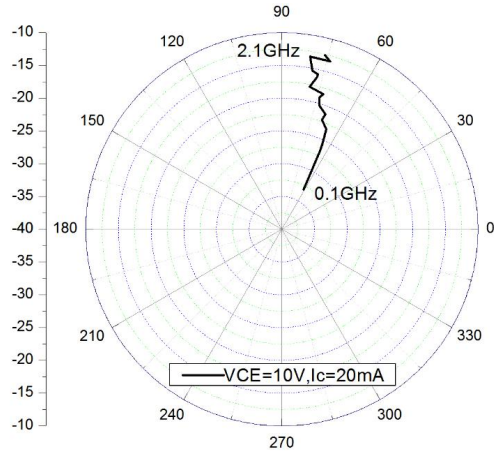


SMITH 图

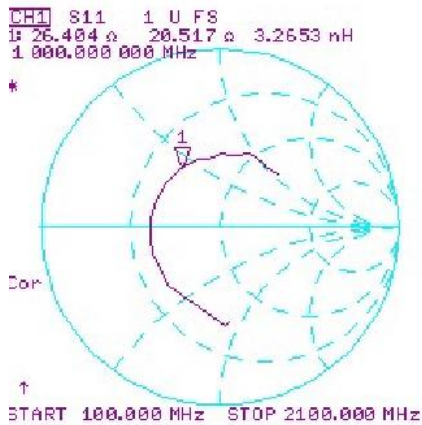
测试条件: $V_{CE}=10V, I_c=20mA$
 S_{21e} -FREQUENCY



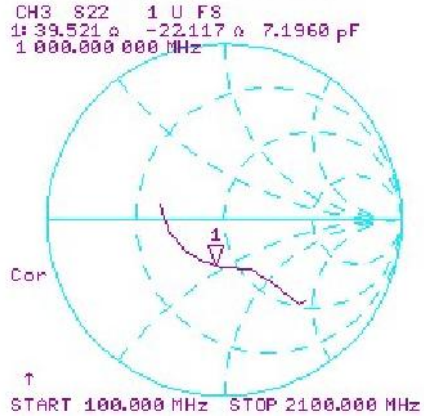
S_{12e} -FREQUENCY



S_{11e} -FREQUENCY



S_{22e} -FREQUENCY





散射参数 (S-PARAMETER)

测试条件: $V_{CE}=10V, I_c=30mA, Z_0=50\Omega$

测试频率 GHz	S ₁₁		S ₂₁		S ₁₂		S ₂₂	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
0.1	-4.8831	-87.675	28.19	128.3	-33.077	61.569	61.569	-44.1545
0.2	-7.2044	-130.02	24.062	109.34	-29.191	63.325	63.325	-55.6067
0.3	-8.2797	-155.74	20.894	100.43	-26.616	64.028	64.028	-61.4376
0.4	-8.6779	-172.87	18.692	93.374	-25.319	64.8	64.8	-67.0751
0.5	-8.7794	172.22	16.954	88.768	-23.309	66.081	66.081	-73.01
0.6	-8.7442	159.88	15.273	84.576	-22.222	69.951	69.951	-78.869
0.7	-8.6869	148.09	14.269	80.497	-21.256	69.112	69.112	-85.866
0.8	-8.6401	138.27	13.038	75.568	-20.252	73.065	73.065	-93.01
0.9	-8.4647	129.24	11.726	73.01	-19.098	74.149	74.149	-99.761
1	-8.306	119.9	11.326	69.089	-18.43	72.903	72.903	-107.396
1.1	-8.4985	112.35	9.9545	64.492	-17.828	78.853	78.853	-113.928
1.2	-8.136	105.04	8.9809	63.112	-16.274	77.092	77.092	-120.595
1.3	-8.1824	96.46	8.7246	60.428	-15.746	76.788	76.788	-129.534
1.4	-8.2206	90.906	7.2697	55.278	-15.324	79.119	79.119	-135.399
1.5	-7.684	86.623	6.3371	56.176	-13.333	80.605	80.605	-141.214
1.6	-7.7506	76.479	6.3951	55.374	-13.33	73.943	73.943	-151.46
1.7	-7.7999	72.739	4.7261	49.735	-12.627	76.105	76.105	-154.385
1.8	-7.0399	67.065	4.3437	55.849	-11.155	76.145	76.145	-160.238
1.9	-7.1751	56.379	4.4145	53.999	-10.842	65.098	65.098	-175.185
2	-7.4651	54.134	3.0677	50.569	-10.632	69.815	69.815	-177.924
2.1	-6.8328	45.213	3.2894	57.456	-9.5906	65.701	65.701	-187.218 1