時科 TECHNOLOGY

2SC3357

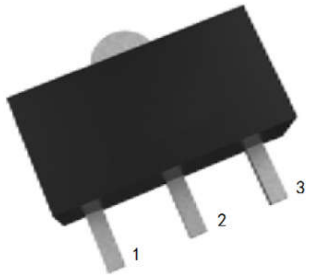
NPN SILICON RF TRANSISTOR

Feature

High gain: $|S_{21e}|^2$ TYP. Value is 10dB @ V_{CE}=10V，I_C=20mA，f=1GHz
Low noise: NF TYP. Value is 1.7dB @ V_{CE}=10V，I_C=7mA，f=1GHz
f_T (TYP.) : TYP. Value is 6.5GHz @ V_{CE}=10V，I_C=20mA，f=1GHz

PIN DEFINITION:

1：（Base） 2：（Collector） 3：（Emitter）



SOT-89

Absolute Maximum Ratings TA=25℃ Unless Otherwise noted

PARAMETER	SYMBLE	MAXIMUM VALUE	UNIT
Collector-base breakdown voltage	V_{CBO}	20	V
Collector-emitter breakdown voltage	V_{CEO}	12	V
Emitter-base breakdown voltage	V_{EBO}	3	V
Collector current	I_C	100	mA
*Collector Power Dissipation	*P_D	1.2	W
Junction Temperature	T_j	150	℃
Storage Temperature	T_{stg}	-65 ~ +150	℃

*With heat dissipation panel

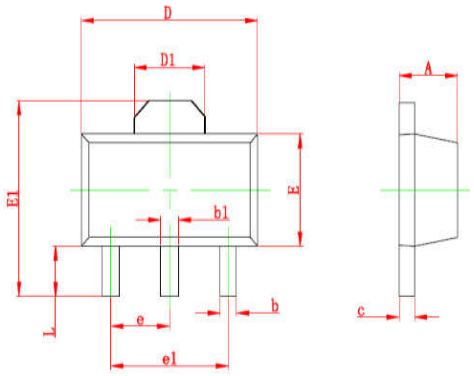
hFE Classification

Classification	A	B	C	D	E
Marking	RH	RF	RE		
hFE	60~100	90~140	130~180	170~250	250~300

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

PARAMETER	SYMBLE	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Collector-base breakdown voltage	V_{CBO}	20			V	I_C=1.0μA
Collector- Emitter breakdown voltage	V_{CEO}	12			V	I_C=100μA
Collector cut-off current	I_{CBO}			0.1	μA	V_{CB}=10V
Emitter cut-off current	I_{EBO}			0.1	μA	V_{EB}=1V
DC current gain	hFE	60	150	300		V_{CE}=10V,I_C=20mA
Transit frequency	f_T		6.5		GHz	V_{CE}=10V,I_C=20mA
Output feedback capacitance	C_{re}		0.65		pF	V_{CB}=10V,I_E=0mA,f=1MHz
Power gain	$\|S_{21e}\|^2$	9	10		dB	V_{CE}=10V,I_C=20mA,f=1GHz
Noise factor	NF		2.6	3.2	dB	V_{CE}=10V,I_C=40mA,f=1GHz
			1.7	2.3		V_{CE}=10V,Ic=7mA,f=1GHz

Package &Dimension：



SOT-89

SYMBOL	MIN (mm)	MAX (mm)
A	1.4	1.6
b	0.32	0.52
b1	0.4	0.58
c	0.35	0.44
D	4.4	4.6
D1	1.55	
E	2.3	2.6
E1	3.94	4.25
e	1.5	
e1	3	
L	0.9	1.2

Fig01:TA & PC

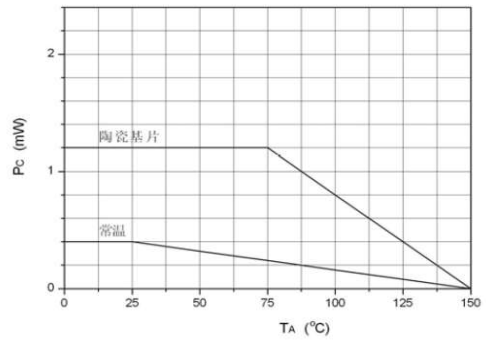


Fig02:VCB & Cre

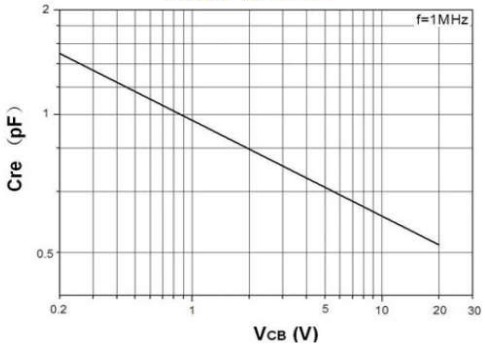


Fig03: hFE & Ic

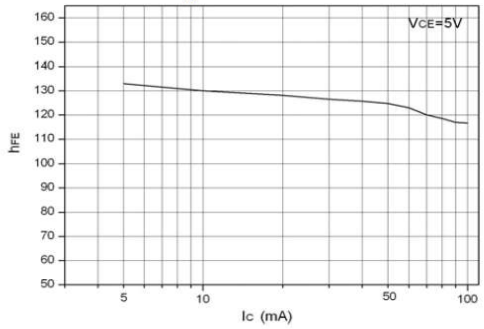


Fig04: fT & Ic

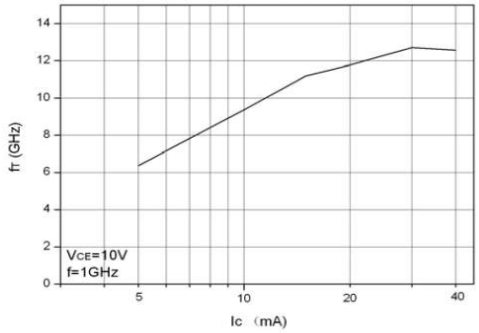


Fig05:|S21e|² & f

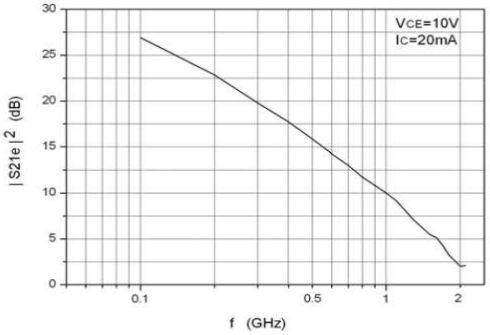


Fig06:|S21E|² & Ic

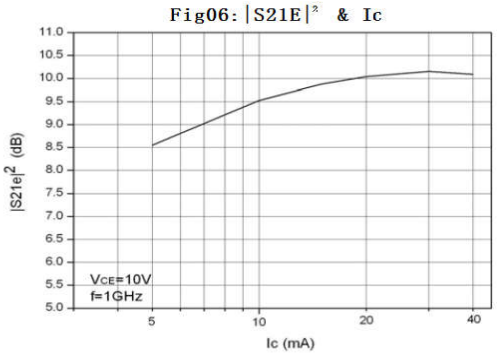


Fig07: NF & Ic

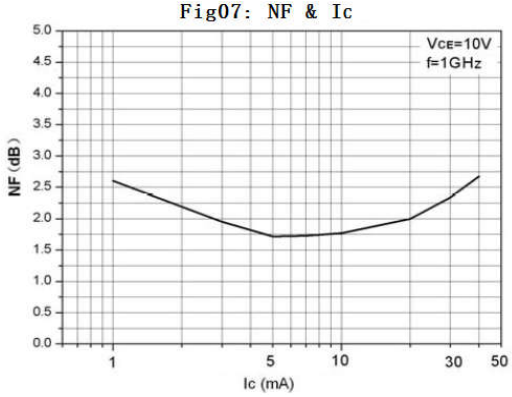
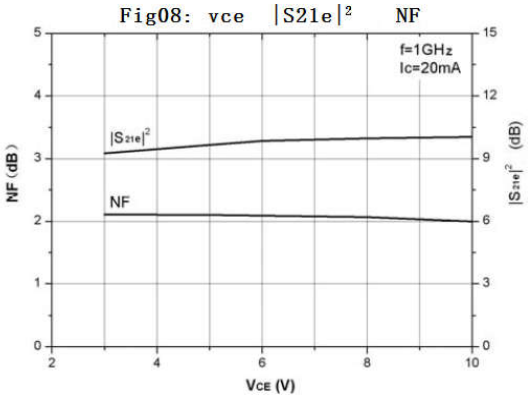


Fig08: vce |S21e|² NF



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