

DESCRIPTION

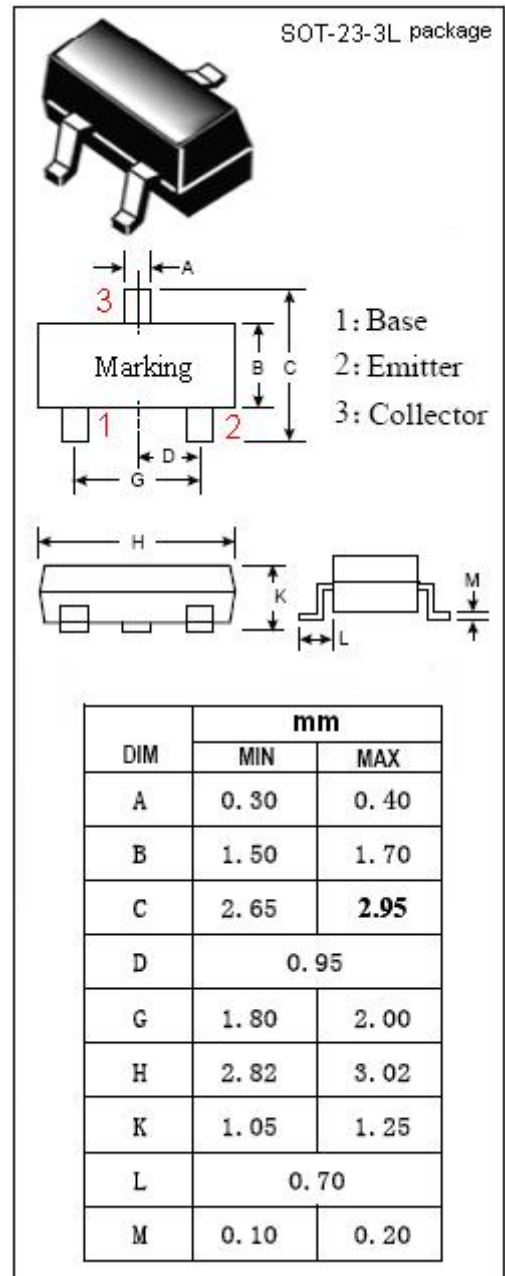
- Low Noise and High Gain
 $NF = 1.1 \text{ dB TYP.}, G_a = 11 \text{ dB TYP.}$
 $@V_{CE} = 10 \text{ V}, I_C = 7 \text{ mA}, f = 1.0 \text{ GHz}$
- High Power Gain
 $MAG = 13 \text{ dB TYP.}$
 $@V_{CE} = 10 \text{ V}, I_C = 20 \text{ mA}, f = 1.0 \text{ GHz}$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for low noise amplifier at VHF, UHF and CATV band.

ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	20	V
V_{CEO}	Collector-Emitter Voltage	12	V
V_{EBO}	Emitter-Base Voltage	3.0	V
I_C	Collector Current-Continuous	0.1	A
P_C	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	0.2	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$



isc Silicon NPN RF Transistor
2SC3356
ELECTRICAL CHARACTERISTICS

 T_c=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
I _{CB0}	Collector Cutoff Current	V _{CB} = 10V; I _E = 0			1.0	μ A
I _{EB0}	Emitter Cutoff Current	V _{EB} = 1V; I _C = 0			1.0	μ A
h _{FE}	DC Current Gain	I _C = 20mA ; V _{CE} = 10V	50		300	
f _T	Current-Gain—Bandwidth Product	I _C = 20mA ; V _{CE} = 10V		7		GHz
C _{re}	Feed-Back Capacitance	I _E = 0 ; V _{CB} = 10V;f= 1.0MHz		0.55	1.0	pF
S _{21e} ²	Insertion Power Gain	I _C = 20mA ; V _{CE} = 10V;f= 1.0GHz		11.5		dB
NF	Noise Figure	I _C = 7mA ; V _{CE} = 10V;f= 1.0GHz		1.1	2.0	dB

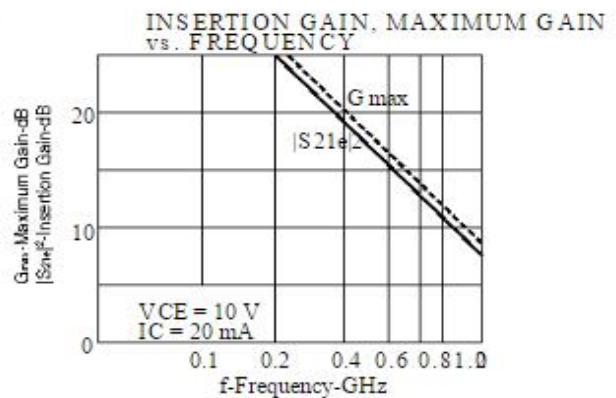
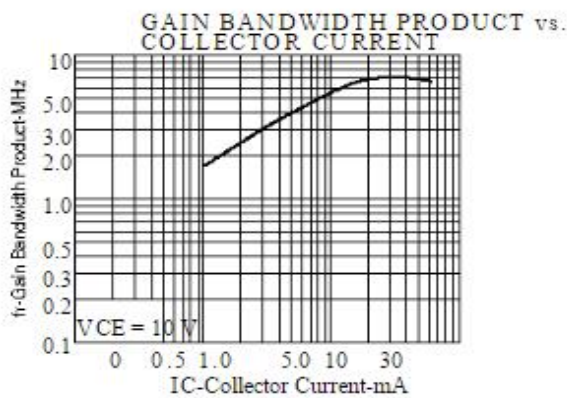
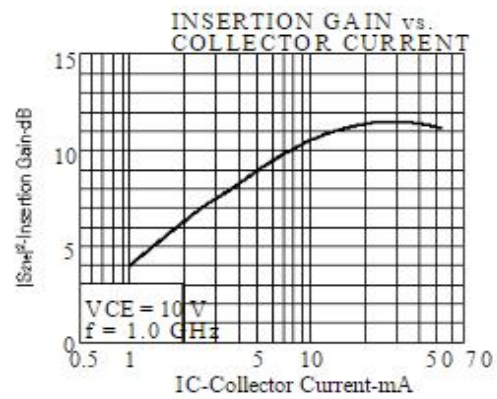
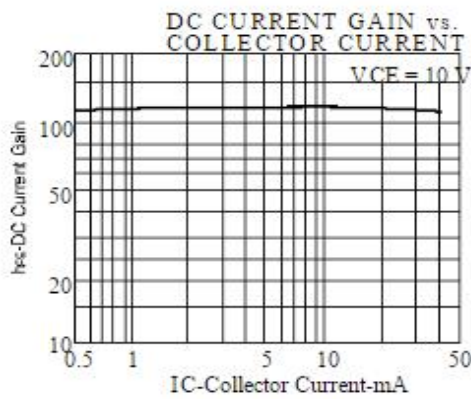
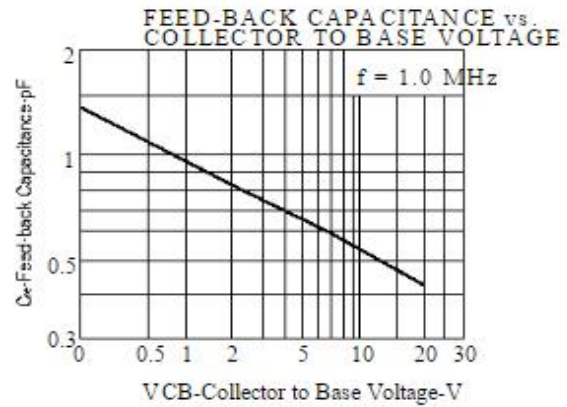
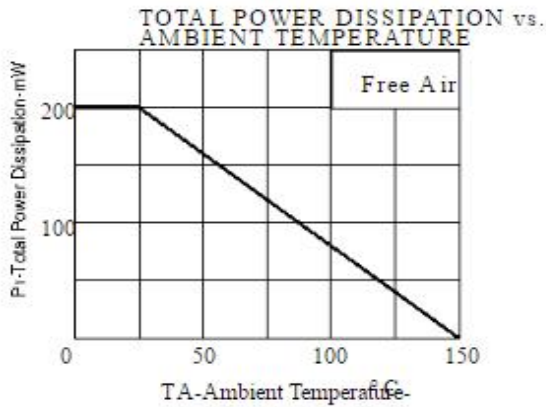
◆ h_{FE} Classification

Class	Q	R	S
Marking	R23	R24	R25
h _{FE}	50-100	80-160	125-250

isc Silicon NPN RF Transistor

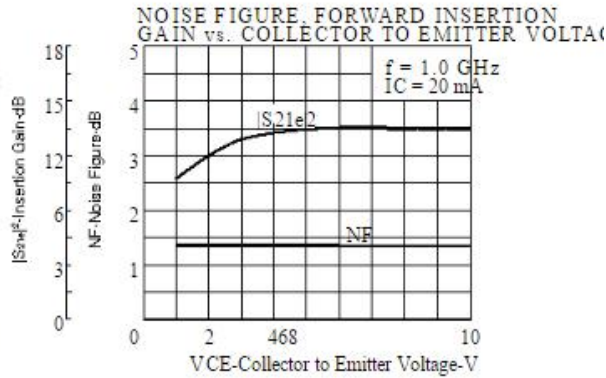
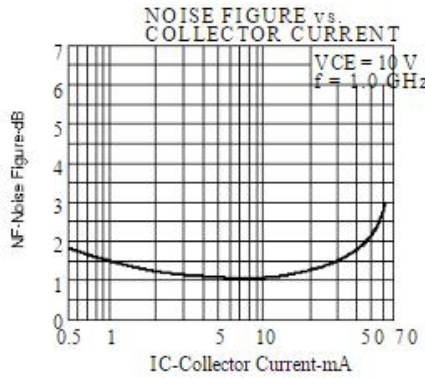
2SC3356

TYPICAL CHARACTERISTICS (TA = 25°C)



isc Silicon NPN RF Transistor

2SC3356



S-PARAMETER

VCE = 10 V, IC = 5 mA, ZO = 60

f (MHz)	rS11	rS11	rS21	rS21	rS12	rS12	rS22	rS22
200	0.651	∠69.3	10.616	129.3	0.051	59.2	0.735	∠28.1
400	0.467	∠113.3	6.856	104.4	0.071	54.4	0.550	∠34.1
600	0.391	∠139.3	4.852	90.9	0.086	56.0	0.468	∠33.9
800	0.360	∠159.2	3.802	81.2	0.101	59.1	0.426	∠33.6
1000	0.360	∠176.9	3.098	72.9	0.118	61.0	0.397	∠35.7
1200	0.361	172.7	2.646	67.3	0.137	63.5	0.373	∠38.3
1400	0.381	160.3	2.298	59.3	0.157	63.3	0.360	∠43.0
1600	0.398	152.2	2.071	55.2	0.180	64.1	0.337	∠45.9
1800	0.423	143.3	1.836	49.0	0.203	63.7	0.320	∠52.3
2000	0.445	137.6	1.689	46.2	0.220	64.7	0.302	∠52.2

VCE = 10 V, IC = 5 mA, ZO = 60

f (MHz)	rS11	rS11	rS21	rS21	rS12	rS12	rS22	rS22
200	0.339	∠107.0	16.516	108.7	0.035	66.1	0.459	∠36.6
400	0.258	∠147.3	8.928	92.1	0.060	71.0	0.343	∠32.9
600	0.243	∠167.7	6.022	83.0	0.085	71.9	0.305	∠29.9
800	0.242	177.0	4.633	76.2	0.109	72.2	0.284	∠29.4
1000	0.260	164.5	3.744	69.9	0.136	70.4	0.266	∠31.7
1200	0.269	157.6	3.193	65.7	0.160	69.9	0.246	∠35.0
1400	0.294	148.7	2.750	58.8	0.187	66.7	0.233	∠40.4
1600	0.314	143.1	2.479	55.5	0.212	65.2	0.208	∠43.6
1800	0.343	136.5	2.185	50.1	0.238	62.4	0.190	∠50.5
2000	0.367	131.4	2.016	47.8	0.254	61.6	0.173	∠48.3

NOTICE:

ISC reserves the rights to make changes of the content herein the datasheet at any time without notification. The information contained herein is presented only as a guide for the applications of our products.

ISC products are intended for usage in general electronic equipment. The products are not designed for use in equipment which require specialized quality and/or reliability, or in equipment which could have applications in hazardous environments, aerospace industry, or medical field. Please contact us if you intend our products to be used in these special applications.

ISC makes no warranty or guarantee regarding the suitability of its products for any particular purpose, nor does ISC assume any liability arising from the application or use of any products, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages.