



# DATA SHEET

SEMICONDUCTOR

2SC3356

## High-Frequency Amplifier Transistor



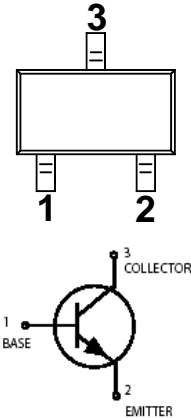
SOT-23 (TO-236AB)

### DESCRIPTION

The 2SC3356 is an NPN silicon epitaxial transistor designed for low noise amplifier at VHF, UHF and CATV band. It has dynamic range and good current characteristic.

### FEATURES

- Low Noise and High Gain  
NF = 1.1 dB TYP.,  $G_a = 11$  dB TYP. @  $V_{CE} = 10$  V,  $I_c = 7$  mA,  $f = 1.0$  GHz
- High Power Gain  
MAG = 13 dB TYP. @  $V_{CE} = 10$  V,  $I_c = 20$  mA,  $f = 1.0$  GHz



### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25 °C)

Collector to Base Voltage	V <sub>CB0</sub>	20	V
Collector to Emitter Voltage	V <sub>CEO</sub>	12	V
Emitter to Base Voltage	V <sub>EBO</sub>	3.0	V
Collector Current	I <sub>c</sub>	100	mA
Total Power Dissipation	P <sub>T</sub>	200	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C

### ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I <sub>cBO</sub>			1.0	μA	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0
Emitter Cutoff Current	I <sub>EBO</sub>			1.0	μA	V <sub>EB</sub> = 1.0 V, I <sub>c</sub> = 0
DC Current Gain	h <sub>FE</sub>	82	170	270		V <sub>CE</sub> = 10 V, I <sub>c</sub> = 20 mA
Gain Bandwidth Product	f <sub>T</sub>		7		GHz	V <sub>CE</sub> = 10 V, I <sub>c</sub> = 20 mA
Feed-Back Capacitance	C <sub>re</sub> **		0.55	1.0	pF	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1.0 MHz
Insertion Power Gain	S <sub>21e</sub>   <sup>2</sup>		11.5		dB	V <sub>CE</sub> = 10 V, I <sub>c</sub> = 20 mA, f = 1.0 GHz
Noise Figure	NF		1.1	2.0	dB	V <sub>CE</sub> = 10 V, I <sub>c</sub> = 7 mA, f = 1.0 GHz

\* Pulse Measurement PW ≤ 350 μs, Duty Cycle ≤ 2 %

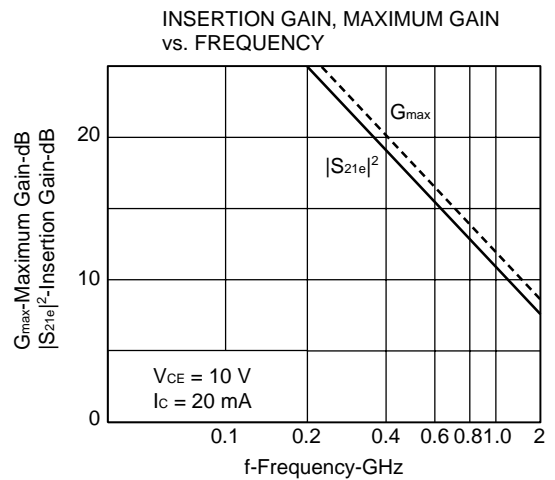
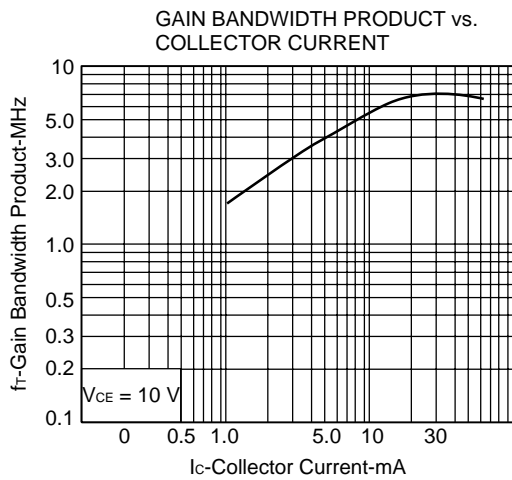
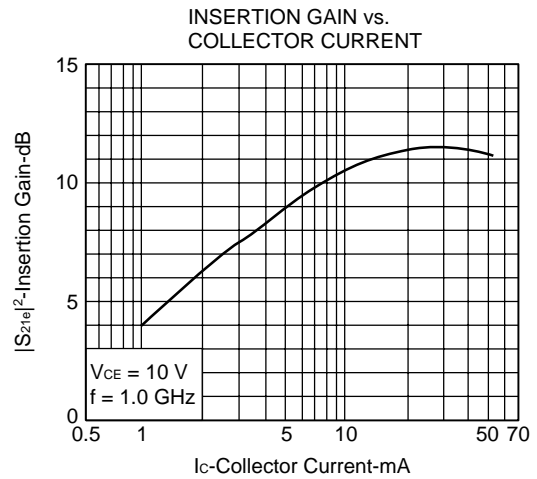
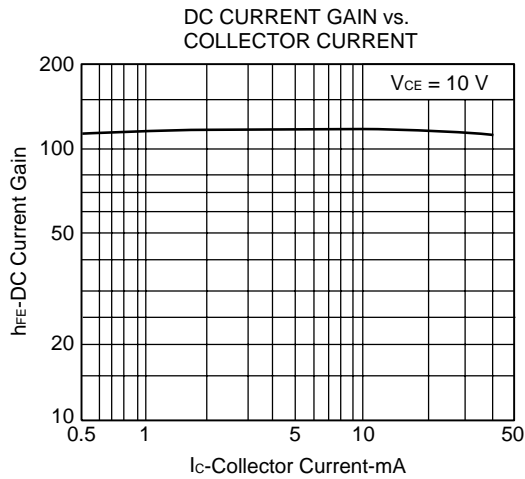
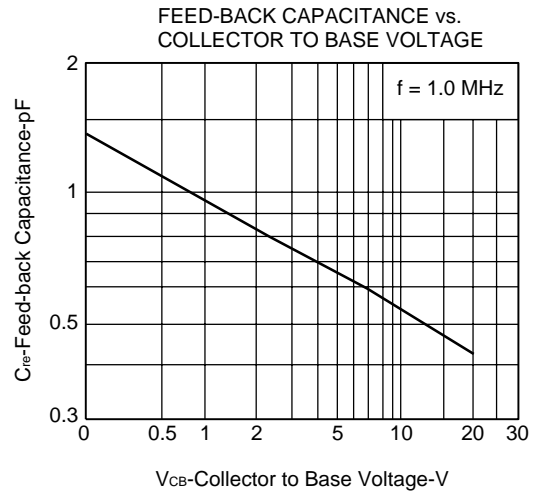
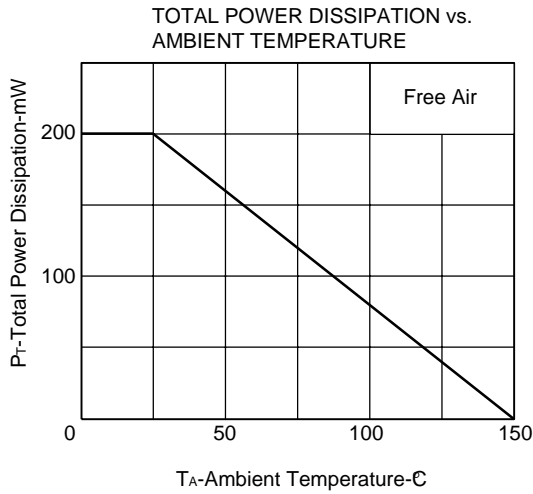
\*\* The emitter terminal and the case shall be connected to the guard terminal of the three-terminal capacitance bridge.

Marking	
2SC3356	R24

# DEVICE CHARACTERISTICS

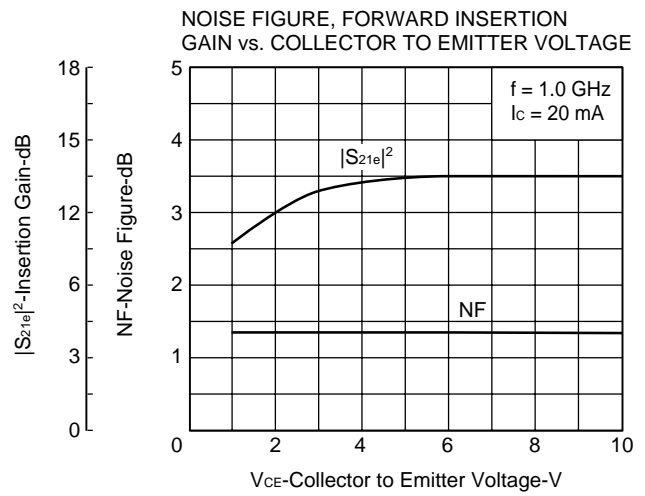
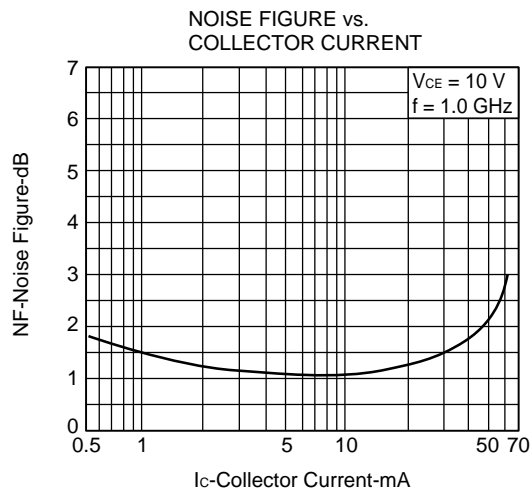
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### TYPICAL CHARACTERISTICS (T<sub>A</sub> = 25 °C)



# DEVICE CHARACTERISTICS

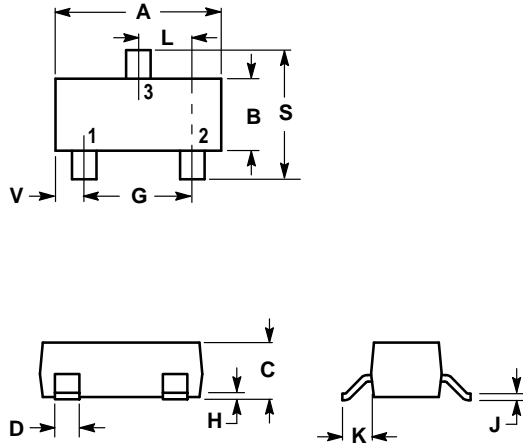
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# PACKAGE OUTLINE & DIMENSIONS

## 2SC3356

### SOT-23



#### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

- PIN 1. BASE  
 2. EMITTER  
 3. COLLECTOR

