

# SILICON TRANSISTOR

## NPN SILICON EPITAXIAL TRANSISTOR

### POWER MINI MOLD

#### DESCRIPTION

The 2SC3357 is an NPN silicon epitaxial transistor designed for low noise amplifier at VHF, UHF and CATV band. It has large dynamic range and good current characteristic.

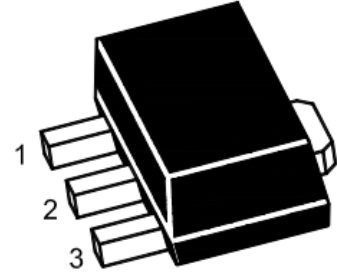
#### FEATURES

- Low Noise and High Gain  
NF = 1.1 dB TYP., Ga = 8.0 dB TYP. @VCE = 10 V,  
IC = 7 mA, f = 1.0 GHz  
NF = 1.8 dB TYP., Ga = 9.0 dB TYP. @VCE = 10 V,  
IC = 40 mA, f = 1.0 GHz
- Large PT in Small Package  
PT : 2 W with 16 cm<sup>2</sup> × 0.7 mm Ceramic Substrate.

#### ABSOLUTE MAXIMUM RATINGS (TA = 25 ° C)

Collector to Base Voltage	VCBO	20	V
Collector to Emitter Voltage	VCEO	12	V
Emitter to Base Voltage	VEBO	3.0	V
Collector Current	IC	100	mA
Total Power Dissipation	PT*	1.2	W
Thermal Resistance	Rth(j-a)*	62.5	° C/W
Junction Temperature	Tj	150	° C
Storage Temperature	Tstg	-65 to +150	° C

\* mounted on 16 cm<sup>2</sup> × 0.7 mm Ceramic Substrate



1.Base 2.Collector 3.Emitter  
SOT-89 Plastic Package

## ELECTRICAL CHARACTERISTICS (TA = 25 ° C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	ICBO			1.0	μA	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0
Emitter Cutoff Current	IEBO			1.0	μA	VEB = 1.0 V, I <sub>C</sub> = 0
DC Current Gain	h <sub>FE</sub> *	50	120	300		V <sub>CE</sub> = 10 V, I <sub>C</sub> = 20 mA
Gain Bandwidth Product	f <sub>T</sub>		6.5		GHz	V <sub>CE</sub> = 10 V, I <sub>C</sub> = 20 mA
Feed-Back Capacitance	C <sub>re</sub> **		0.65	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>		9		dB	V <sub>CE</sub> = 10 V, I <sub>C</sub> = 20 mA, f = 1.0 GHz
Noise Figure	NF		1.1		dB	V <sub>CE</sub> = 10 V, I <sub>C</sub> = 7 mA, f = 1.0 GHz
Noise Figure	NF		1.8	3.0	dB	V <sub>CE</sub> = 10 V, I <sub>C</sub> = 40 mA, f = 1.0 GHz

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

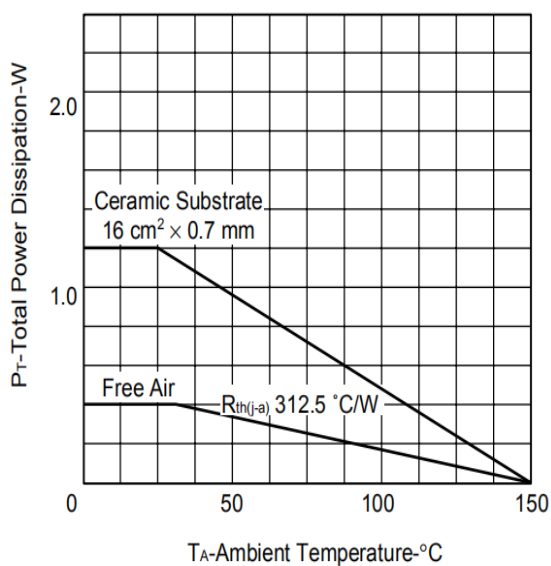
\*\* The emitter terminal and the case shall be connected to the guard terminal of the three-terminal capacitance bridge.

### h<sub>FE</sub> Classification

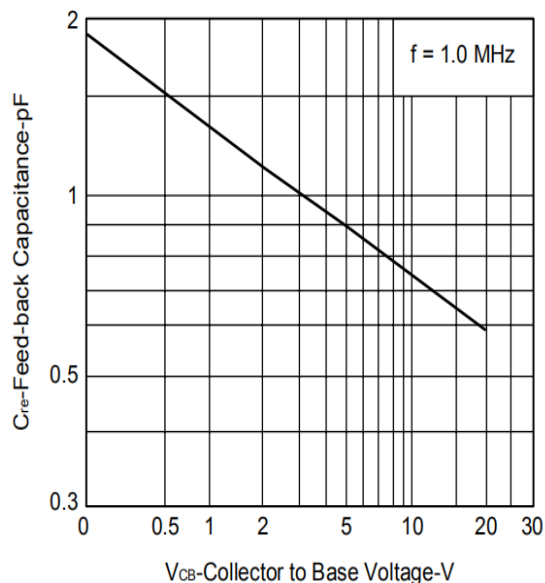
Class	RH	RF	RE
Marking	RH	RF	RE
h <sub>FE</sub>	50 to 100	80 to 160	125 to 250

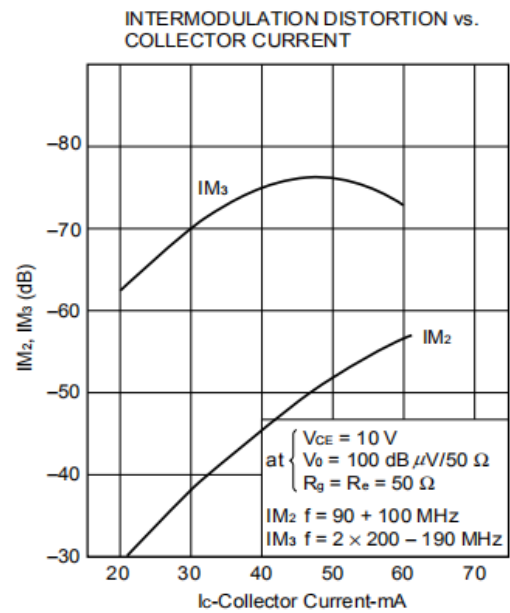
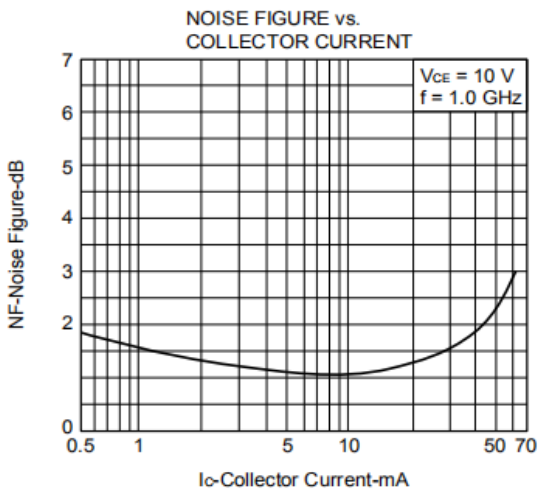
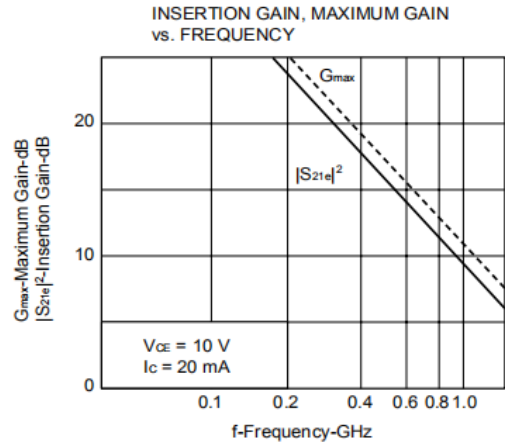
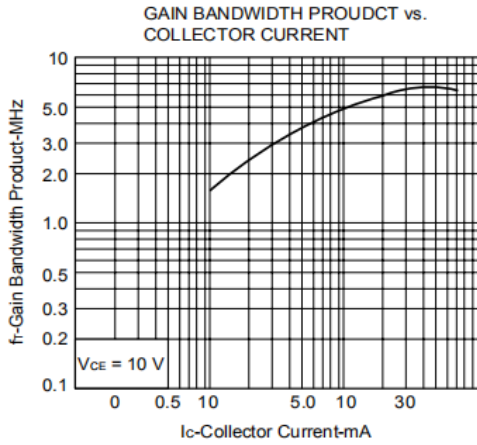
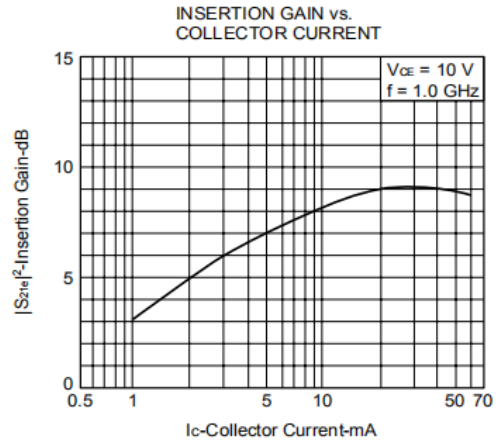
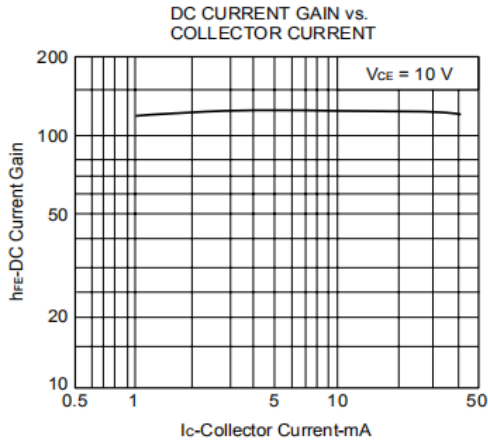
## TYPICAL CHARACTERISTICS (TA = 25 °C)

TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



FEED-BACK CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE





**SOT-89 PACKAGE OUTLINE**

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