

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
 $NF = 1.1 \text{ dB TYP.}, Ga = 8.0 \text{ dB TYP. @} V_{CE} = 10 \text{ V},$
 $I_C = 7 \text{ mA}, f = 1.0 \text{ GHz}$
 $NF = 1.8 \text{ dB TYP.}, Ga = 9.0 \text{ dB TYP. @} V_{CE} = 10 \text{ V},$
 $I_C = 40 \text{ mA}, f = 1.0 \text{ GHz}$
- ◆Large PT in Small Package
 $PT : 2 \text{ W with } 16 \text{ cm}^2 \times 0.7 \text{ mm Ceramic Substrate.}$

Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

Characteristics	Symbols	Value	Units
Collector-Base Voltage	V_{CBO}	20	V
Collector-Emitter Voltage	V_{CEO}	12	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current -Continuous	I_C	100	mA
Total Power Dissipation	PT^*	1.2	W
Thermal Resistance	$R_{th(j-a)}^*$	62.5	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-65 to +150	$^\circ\text{C}$

* mounted on $16 \text{ cm}^2 \times 0.7 \text{ mm}$ Ceramic Substrate

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$)

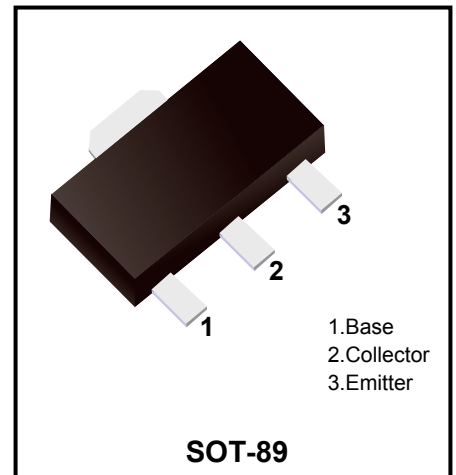
CHARACTERISTIC	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Collector Cutoff Current	I_{CBO}	$V_{CB} = 10\text{V}, I_E = 0$			1.0	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 1.0\text{V}, I_C = 0$			1.0	μA
DC Current Gain	h_{FE}^*	$V_{CE} = 10\text{V}, I_C = 20 \text{ mA}$	50	120	300	
Gain Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_C = 20 \text{ mA}$		6.5		GHz
Feed-Back Capacitance	C_{re}^{**}	$V_{CB} = 10\text{V}, I_E = 0, f = 1.0\text{MHz}$		0.65	1.0	pF
Insertion Power Gain	$ S_{21e} ^2$	$V_{CE} = 10\text{V}, I_C = 20 \text{ mA}, f = 1.0 \text{ GHz}$		9		dB
Noise Figure	NF	$V_{CE} = 10\text{V}, I_C = 7 \text{ mA}, f = 1.0\text{GHz}$		1.1		dB
Noise Figure	NF	$V_{CE} = 10\text{V}, I_C = 40 \text{ mA}, f = 1.0 \text{ GHz}$		1.8	3.0	dB

* Pulse Measurement $PW \leq 350 \text{ us}$, Duty Cycle $\leq 2 \%$

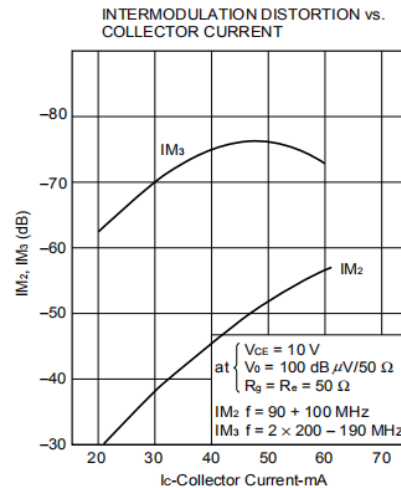
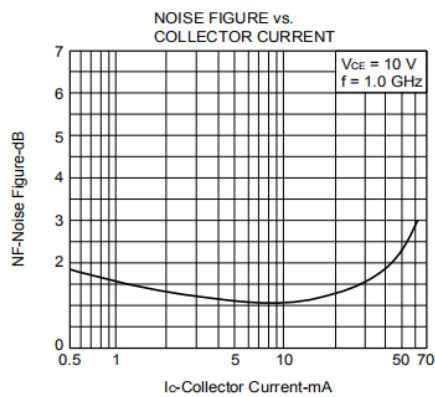
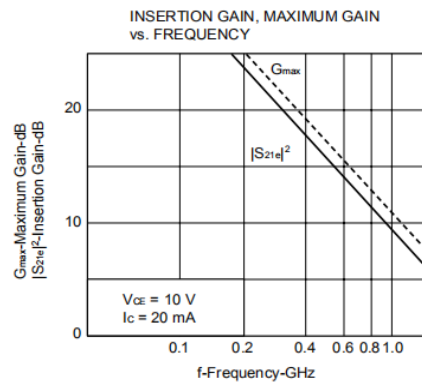
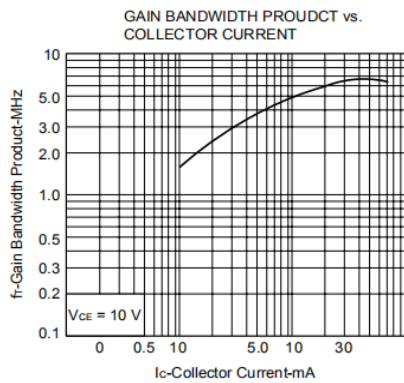
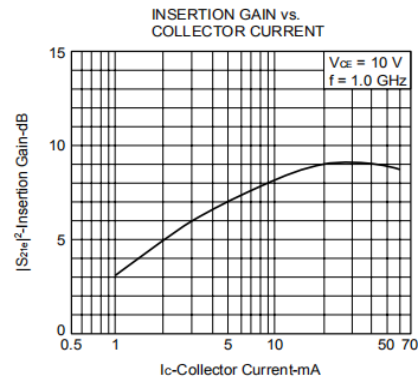
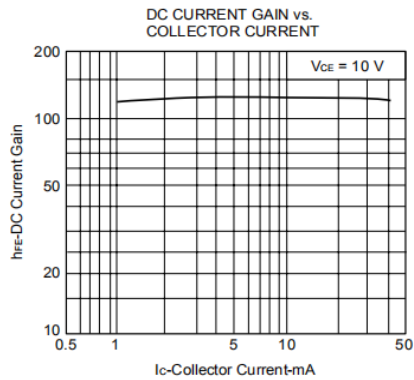
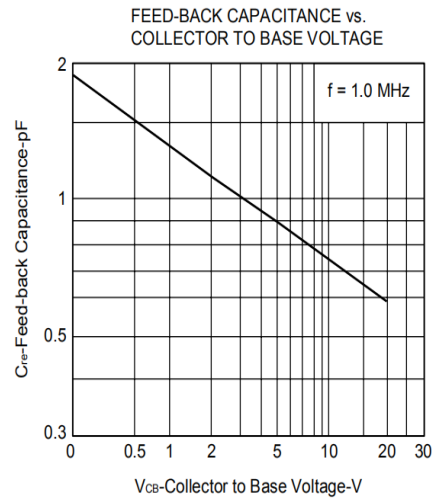
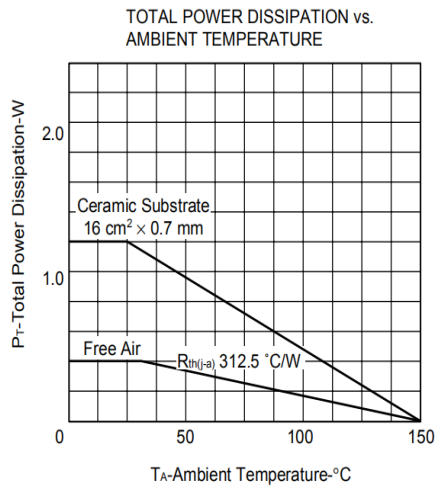
** The emitter terminal and the case shall be connected to the guard terminal of the three-terminal capacitance bridge.

h_{FE} Classification

Classification	2SC3357-RH	2SC3357-RF	2SC3357-RE
h_{FE}	50~100	80~160	125~250
Marking	RH	RF	RE

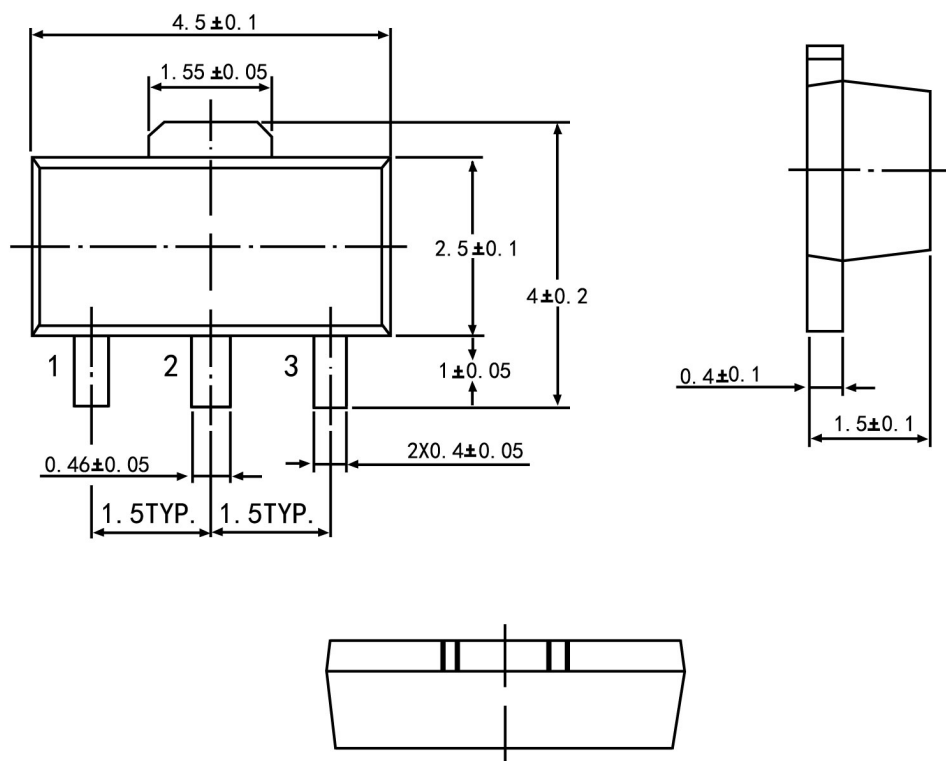


TYPICAL CHARACTERISTICS (TA= 25 °C)



Package Outline

SOT-89



Symbol	Dimension in Millimeters	
	Min	Max
A	1.40	1.60
B	0.44	0.62
B1	0.35	0.54
C	0.35	0.44
D	4.40	4.60
D1	1.62	1.83
E	2.29	2.60
e	1.50 Typ	
H	3.94	4.25
H1	2.63	2.93
L	0.89	1.20
All Dimensions In mm		

Summary of Packing Options

Package	Package Description	Packing Quantity	Industry Standard
SOT-89	Tape/Reel, 7" reel	1000	EIA-481-1