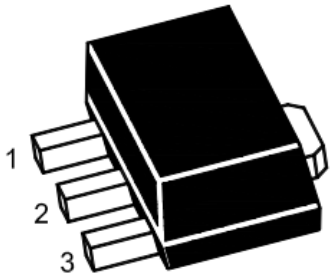
SILICON TRANSISTOR
NPN SILICON EPITAXIAL TRANSISTOR
POWER MINI MOLD



1.Base 2.Collector 3.Emitter

SOT-89 Plastic Package

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 cm2 × 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 cm2 × 0.7 mm Ceramic Substrate

ELECTRICAL CHARACTERISTICS (TA = 25 ° C)

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

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

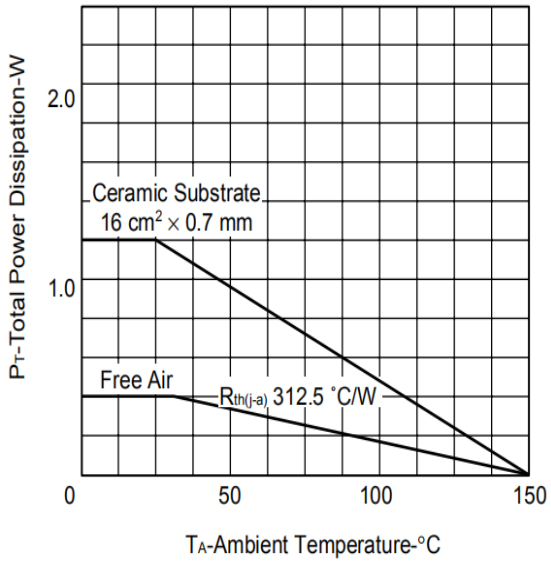
** The emitter terminal and the case shall be connected to the guard terminal of the three-terminal capacitnace bridge.

h_{FE} Classification

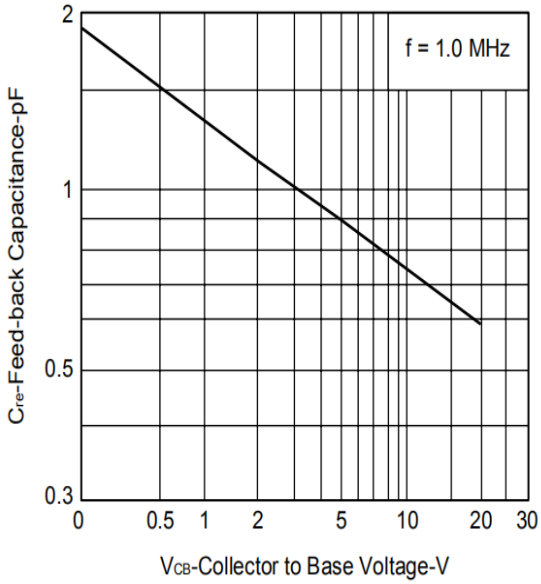
Class	RH	RF	RE
Marking	RH	RF	RE
h_{FE}	50 to 100	80 to 160	125 to 250

TYPICAL CHARACTERISTICS (T_A = 25 °C)

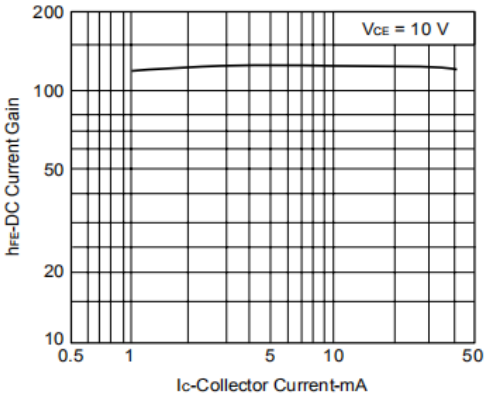
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



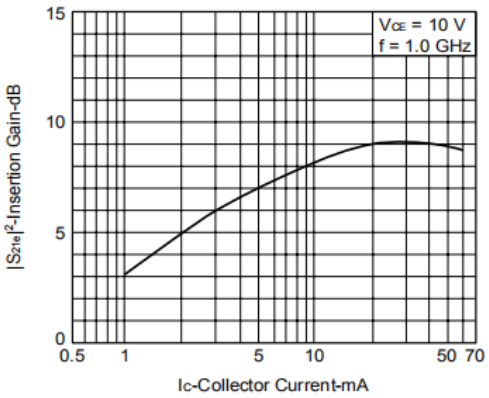
FEED-BACK CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



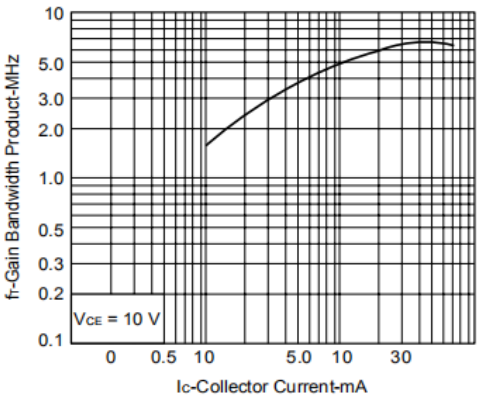
DC CURRENT GAIN vs.
COLLECTOR CURRENT



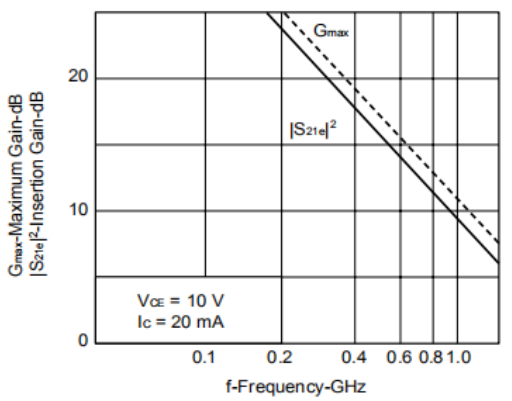
INSERTION GAIN vs.
COLLECTOR CURRENT



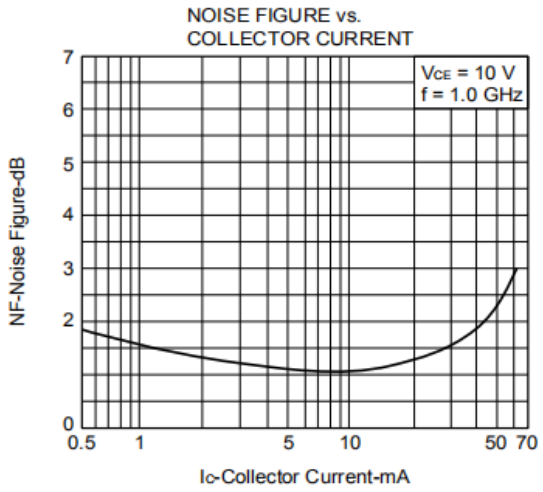
GAIN BANDWIDTH PROUDCT vs.
COLLECTOR CURRENT



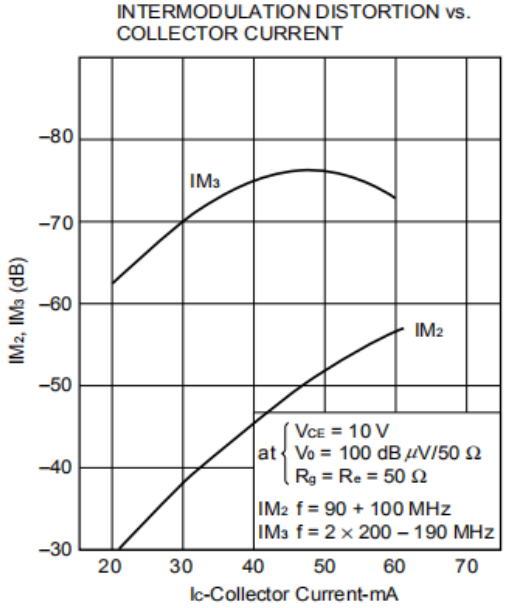
INSERTION GAIN, MAXIMUM GAIN
vs. FREQUENCY



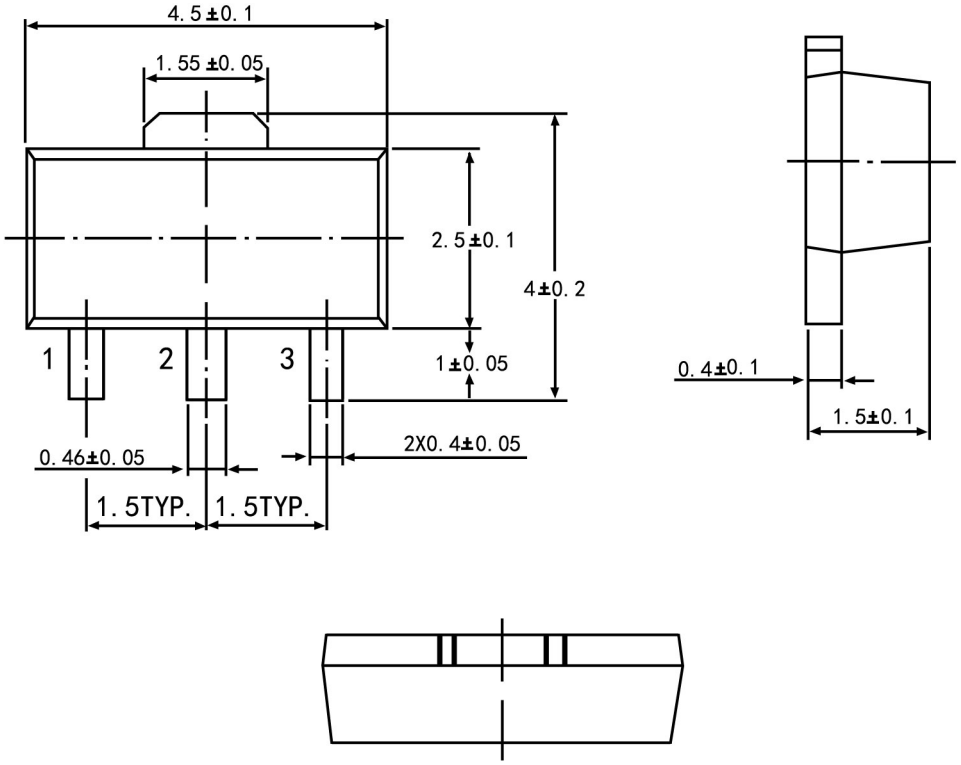
NOISE FIGURE vs.
COLLECTOR CURRENT



INTERMODULATION DISTORTION vs.
COLLECTOR CURRENT



SOT-89 PACKAGE OUTLINE



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		