

NPN Silicon RF Transistor

2SC3357

■ Features

- Low Noise and High Gain

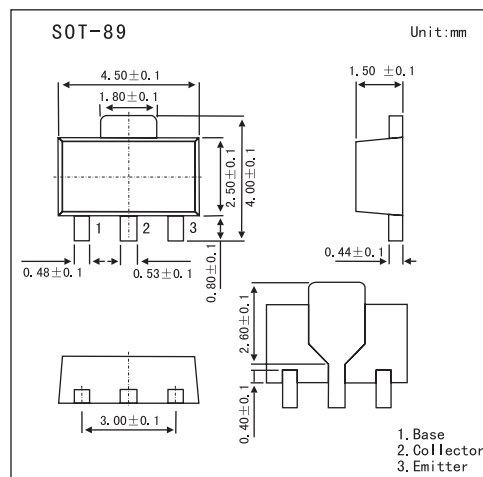
NF = 1.1 dB TYP., $G_a = 7.5$ dB TYP. @ $V_{CE} = 10$ V,

$I_C = 7$ mA, $f = 1.0$ GHz

NF = 1.8 dB TYP., $G_a = 9.0$ dB TYP. @ $V_{CE} = 10$ V,

$I_C = 40$ mA, $f = 1.0$ GHz

- High power gain : MAG = 10 dB TYP. @ $I_C = 40$ mA, $f = 1$ GHz



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

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	20	V
Collector-emitter voltage	V_{CEO}	12	V
Emitter-base voltage	V_{EBO}	3.0	V
Collector current	I_C	100	mA
Total power dissipation	P_T^*	1.2	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-65 to +150	$^\circ\text{C}$
Thermal Resistance	$R_{th(j-a)}^*$	62.5	$^\circ\text{C/W}$

* mounted on 16 mm² X 0.7 mm(t) Ceramic Substrate

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditions	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}^*1	$V_{CE} = 10\text{V}, I_C = 20\text{mA}$	50	120	250	
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
		$V_{CE} = 10\text{V}, I_C = 40\text{mA}, f = 1.0\text{GHz}$		1.8	3.0	dB
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 1.0\text{MHz}$		0.65	1.0	pF
Transition frequency	f_T	$V_{CE} = 10\text{V}, I_C = 20\text{mA}$		6.5		GHz

*1 Pulse Measurement PW ≤ 350 ms, Duty Cycle $\leq 2\%$

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

■ hFE Classification

Marking	RH	RF	RE
Rank	RH	RF	RE
hFE	20~100	80~160	125~250