

NPN Silicon RF Transistor

2SC3357

■ Features

- Low Noise and High Gain

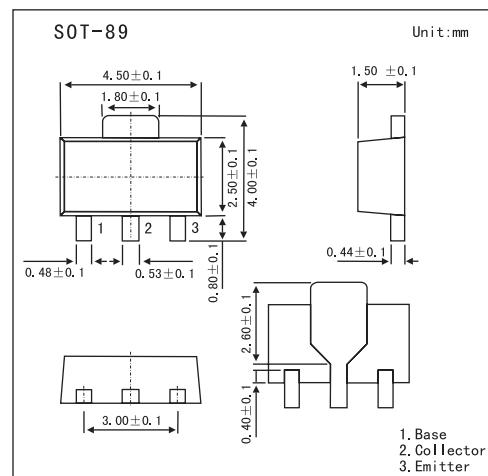
$NF = 1.1 \text{ dB TYP.}, Ga = 7.5 \text{ dB TYP.} @ V_{CE} = 10 \text{ V},$

$I_C = 7 \text{ mA, } f = 1.0 \text{ GHz}$

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

$I_C = 40 \text{ mA, } f = 1.0 \text{ GHz}$

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



■ 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	$^\circ\text{C}/\text{W}$

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

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

Parameter	Symbol	Testconditons	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 $\leq 350 \text{ ms}$, 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	$20 \sim 100$	$80 \sim 160$	$125 \sim 250$