

NPN Silicon Epitaxial Transistor

2SC3356

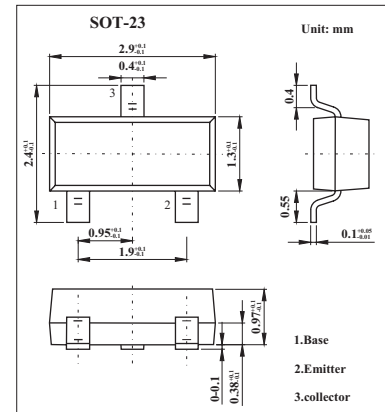
■ Features

- Low noise and high gain.

NF = 1.1 dB Typ., $G_a = 11$ dB Typ. @ $V_{CE} = 10$ V, $I_c = 7$ mA, $f = 1.0$ GHz

- High power gain.

MAG = 13 dB Typ. @ $V_{CE} = 10$ V, $I_c = 20$ mA, $f = 1.0$ GHz

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

Parameter	Symbol	Rating	Unit
Collector to base voltage	V_{CB0}	20	V
Collector to emitter voltage	V_{CEO}	12	V
Emitter to base voltage	V_{EB0}	3.0	V
Collector current (DC)	I_c	100	mA
Total power dissipation	P_{tot}	200	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-65 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CB0}	$V_{CB} = 10$ V, $I_E = 0$ mA			1.0	μA
Emitter cutoff current	I_{EB0}	$V_{EB} = 1.0$ V, $I_c = 0$ mA			1.0	μA
DC current gain *	h_{FE}	$V_{CE} = 10$ V, $I_c = 20$ mA	50	120	250	
Insertion power gain	$ S_{21e} ^2$	$V_{CE} = 10$ V, $I_c = 20$ mA, $f = 1$ GHz		11.5		dB
Noise figure	NF	$V_{CE} = 10$ V, $I_c = 7$ mA, $f = 1$ GHz		1.1	2.0	dB
Reverse transfer capacitance	C_{re}	$V_{CB} = 10$ V, $I_E = 0$ mA, $f = 1$ MHz		0.55	1.0	pF
Transition frequency	f_r	$V_{CE} = 10$ V, $I_c = 20$ mA		7		GHz

*. Pulse measurement: $PW \leq 350 \mu\text{s}$, Duty Cycle $\leq 2\%$.

■ hFE Classification

Marking	R23	R24	R25
Rank	Q	R	S
hFE	50~100	80~160	125~250