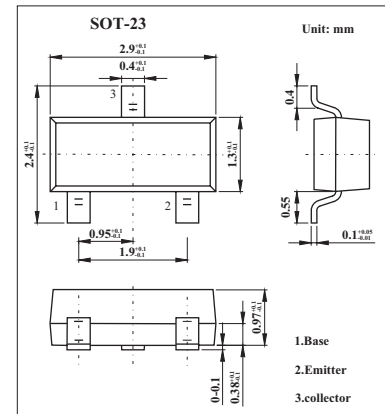


## PNP Epitaxial Silicon Transistor

## 2SA1977

## ■ Features

- High  $f_T$  :  $f_T = 8.5$  GHz TYP.
- High gain  
|  $S_{21e}$  |<sup>2</sup> = 12.0 dB TYP. @  $f = 1.0$  GHz,  $V_{CE} = -8$  V,  $I_C = -20$  mA
- High-speed switching characteristics

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	-20	V
Collector-emitter voltage	$V_{CEO}$	-12	V
Emitter-base voltage	$V_{EBO}$	-3.0	V
Collector current	$I_C$	-50	mA
Total power dissipation	$P_T$	200	mW
Junction temperature	$T_J$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = -10$ V			-0.1	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = -1$ V			-0.1	$\mu\text{A}$
DC current gain	$h_{FE}$	$V_{CE} = -8$ V, $I_C = -20$ mA	20		100	
Gain Bandwidth Product	$f_T$	$V_{CE} = -8$ V, $I_C = -20$ mA, $f = 1$ GHz	6.0	8.5		V
Collector Capacitance	$C_{re}^*$	$V_{CB} = -10$ V, $I_E = 0$ , $f = 1$ MHz		0.5	1	V
Insertion Power Gain	$S_{21e}$   <sup>2</sup>	$V_{CE} = -8$ V, $I_C = -20$ mA, $f = 1.0$ GHz	8.0	12.0		MHz
Noise Figure	NF	$V_{CE} = -8$ V, $I_C = -3$ mA, $f = 1$ GHz		1.5	3	pF

\*. Measured by a 3-terminal bridge. Emitter and Case should be connected to the guard terminal.

## ■ hFE Classification

Marking	T92
Rank	FB
hFE	20~100