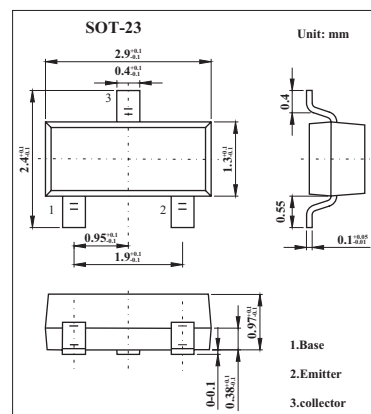


## Silicon PNP Epitaxial Planar Type

## 2SA1022

## ■ Features

- High transition frequency  $f_T$ .
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.

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

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CB0}$	-30	V
Collector-emitter voltage (Base open)	$V_{CE0}$	-20	V
Emitter-base voltage (Collector open)	$V_{EB0}$	-5	V
Collector current	$I_C$	-30	mA
Collector power dissipation	$P_C$	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	$I_{CB0}$	$V_{CB} = -10\text{ V}, I_E = 0$			-0.1	$\mu\text{A}$
	$I_{CE0}$	$V_{CE} = -20\text{ V}, I_B = 0$			-100	$\mu\text{A}$
Emitter cutoff current	$I_{EB0}$	$V_{EB} = -5.0\text{ V}, I_C = 0$			-10	$\mu\text{A}$
Forward current transfer ratio	$h_{FE}$	$V_{CE} = -10\text{ V}, I_C = -1\text{ mA}$	70		220	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10\text{ mA}, I_B = -1\text{ mA}$		-0.1		V
Base to emitter voltage	$V_{BE}$	$V_{CE} = -10\text{ V}, I_C = -1\text{ mA}$		-0.7		V
Transition frequency	$f_T$	$V_{CB} = -10\text{ V}, I_E = 1\text{ mA}, f = 200\text{ MHz}$	150	300		MHz
Noise figure	NF	$V_{CB} = -10\text{ V}, I_E = 1\text{ mA}, f = 5\text{ MHz}$		2.8		dB
Reverse transfer impedance	$Z_{rb}$	$V_{CB} = -10\text{ V}, I_E = 1\text{ mA}, f = 2\text{ MHz}$		22		$\Omega$
Common emitter reverse transfer capacitance	$C_{re}$	$V_{CE} = -10\text{ V}, I_C = -1\text{ mA}, f = 10.7\text{ MHz}$		1.2		pF

■  $h_{FE}$  Classification

Marking	EB	EC
$h_{FE}$	70~140	110~220