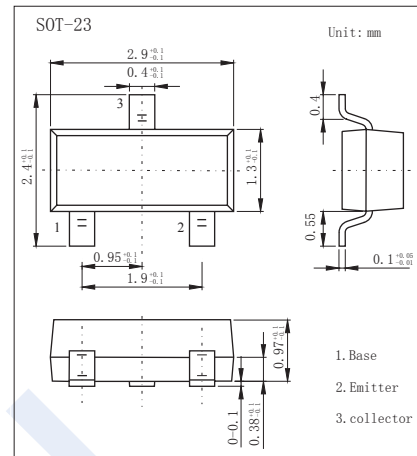


PNP Transistors

2SA1022

■ Features

- High transition frequency fr.
- Complementary to 2SC2295

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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	-30	V
Collector - Emitter Voltage	V_{CEO}	-20	
Emitter - Base Voltage	V_{EBO}	-5	
Collector Current - Continuous	I_C	-30	mA
Collector Power Dissipation	P_C	200	mW
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature range	T_{stg}	-55 to 150	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	$I_C = -100 \mu\text{A}, I_E = 0$	-30			V
Collector- emitter breakdown voltage	V_{CEO}	$I_C = -1 \text{ mA}, I_B = 0$	-20			
Emitter - base breakdown voltage	V_{EBO}	$I_E = -100 \mu\text{A}, I_C = 0$	-5			
Collector-base cut-off current	I_{CBO}	$V_{CB} = -30 \text{ V}, I_E = 0$			-0.1	μA
Collector- emitter cut-off current	I_{CEO}	$V_{CE} = -20 \text{ V}, I_E = 0$			-10	
Emitter cut-off current	I_{EBO}	$V_{EB} = -5 \text{ V}, I_C = 0$			-0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10 \text{ mA}, I_B = -1 \text{ mA}$		-0.1		V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -10 \text{ mA}, I_B = -1 \text{ mA}$			-1.2	
Base - emitter voltage	V_{BE}	$V_{CE} = -10 \text{ V}, I_C = -1 \text{ mA}$		-0.7		
DC current gain	h_{FE}	$V_{CE} = -10 \text{ V}, I_C = -1 \text{ mA}$	70		220	
Reverse transfer impedance	R_{rb}	$V_{CB} = -10 \text{ V}, I_E = 1 \text{ mA}, f = 2 \text{ MHz}$		22		Ω
Noise figure	NF	$V_{CB} = -10 \text{ V}, I_E = 1 \text{ mA}, f = 5 \text{ MHz}$		2.8		dB
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
Transition frequency	f_T	$V_{CB} = -10 \text{ V}, I_E = 1 \text{ mA}, f = 200 \text{ MHz}$	150	300		MHz

■ Classification of h_{FE}

Marking	EB	EC
Rank	B	C
Range	70-140	110-220

PNP Transistors

2SA1022

■ Typical Characteristics

