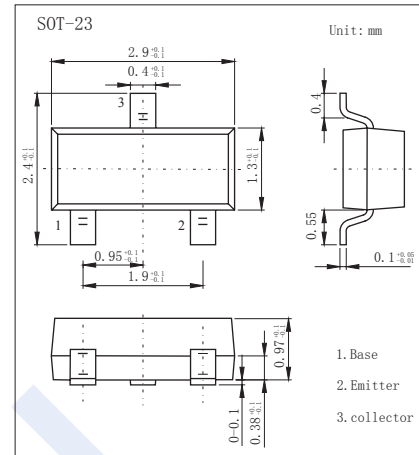


PNP Transistors

2SB970

■ Features

- Low collector to emitter saturation voltage $V_{CE(sat)}$.
- For low-voltage output amplification



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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	-15	V
Collector - Emitter Voltage	V_{CEO}	-10	
Emitter - Base Voltage	V_{EBO}	-7	
Collector Current - Continuous	I_C	-500	mA
Collector Current - Pulse	I_{CP}	-1	A
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}	$I_C = -100 \mu\text{A}$, $I_E = 0$	-15			V
Collector- emitter breakdown voltage	V_{CEO}	$I_C = -1 \text{mA}$, $I_B = 0$	-10			
Emitter - base breakdown voltage	V_{EBO}	$I_E = -100 \mu\text{A}$, $I_C = 0$	-7			
Collector-base cut-off current	I_{CBO}	$V_{CB} = -10\text{V}$, $I_E = 0$			-0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -6\text{V}$, $I_C = 0$			-0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -400 \text{mA}$, $I_B = -8\text{mA}$		-0.16	-0.3	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = -400 \text{mA}$, $I_B = -8\text{mA}$		-0.8	-1.2	
DC current gain	h_{FE}	$V_{CE} = -2\text{V}$, $I_C = -500\text{mA}$	130		350	
		$V_{CE} = -2\text{V}$, $I_C = -1\text{A}$	60			
Collector output capacitance	C_{ob}	$V_{CB} = -10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$		22		pF
Transition frequency	f_T	$V_{CE} = -10\text{V}$, $I_E = 50\text{mA}$, $f = 200\text{MHz}$		130		MHz

■ Classification of $h_{FE}(1)$

Type	2SB970-R	2SB970-S
Range	130-220	180-350
Marking	1RR	1RS

PNP Transistors

2SB970

■ Typical Characteristics

