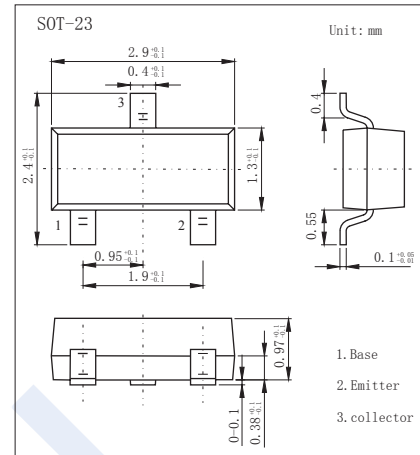


## PNP Transistors

### 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	$\mu\text{A}$
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

