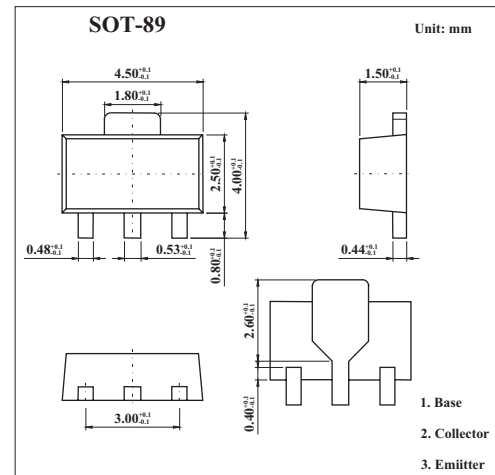


## PNP Medium Power Transistors

## BSR30,BSR31,BSR33

## ■ Features

- High current (max. 1 A)
- Low voltage (max. 80 V).



## ■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit	
Collector-base voltage	BSR30,BSR31 BSR33	V <sub>CB0</sub>	-70	V
			-90	V
Collector-emitter voltage	BSR30,BSR31 BSR33	V <sub>CEO</sub>	-60	V
			-80	V
Emitter-base voltage	V <sub>EB0</sub>	-5	V	
Collector current	I <sub>C</sub>	-1	A	
Peak collector current	I <sub>CM</sub>	-2	A	
Peak base current	I <sub>BM</sub>	-200	mA	
Total power dissipation	P <sub>tot</sub>	1.35	W	
Storage temperature	T <sub>stg</sub>	-65 to +150	°C	
Junction temperature	T <sub>j</sub>	150	°C	
Operating ambient temperature	R <sub>amb</sub>	-65 to +150	°C	
Thermal resistance from junction to ambient	R <sub>th(j-a)</sub>	93	K/W	
Thermal resistance from junction to soldering point	R <sub>th(j-s)</sub>	13	K/W	

**BSR30,BSR31,BSR33**

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector cutoff current	ICBO	IE = 0; VCB = -60 V			-100	nA
		IE = 0; VCB = -60 V; Tj = 150 °C			-50	μA
Emitter cutoff current	IEBO	IC = 0; VEB = -5 V			-100	nA
DC current gain * BSR30 BSR31; BSR33	hFE	IC = -100 mA; VCE = -5 V;	10			
			30			
DC current gain * BSR30 BSR31,BSR33	hFE	IC = -100 mA; VCE = -5 V	40		120	
			100		300	
DC current gain * BSR30 BSR31,BSR33	hFE	IC = -500 mA; VCE = -5 V;	30			
			50			
collector-emitter saturation voltage *	VCEsat	IC = -150 mA; IB = -15 mA			-0.25	V
		IC = -500 mA; IB = -50 mA			-0.5	V
base-emitter saturation voltage *	VBEsat	IC = -150 mA; IB = -15 mA			-1	V
		IC = -500 mA; IB = -50 mA			-1.2	V
Transition frequency	fr	IC = -50 mA; VCE = -10 V; f = 100 MHz	100			MHz

\* Pulse test: tp = 300 μs; δ ≤ 0.01.

## ■ hFE Classification

TYPE	BSR30	BSR31	BSR33
Marking	BR1	BR2	BR4