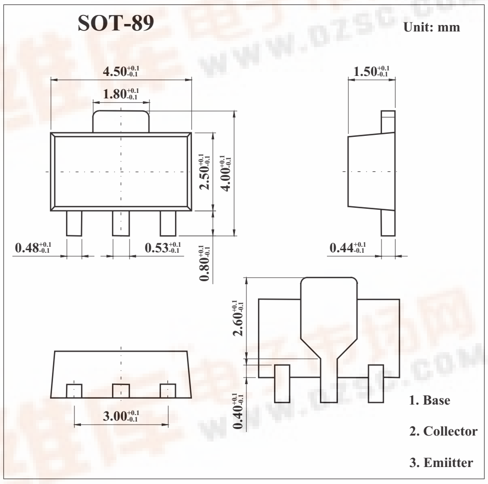
PNP Medium Power Transistors

BSR30,BSR31,BSR33



Features

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

Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Collector-base voltage	BSR30,BSR31	V_{CBO}	-70	V
	BSR33		-90	V
Collector-emitter voltage	BSR30,BSR31	V_{CEO}	-60	V
	BSR33		-80	V
Emitter-base voltage		V_{EBO}	-5	V
Collector current		I_C	-1	A
Peak collector current		I_{CM}	-2	A
Peak base current		I_{BM}	-200	mA
Total power dissipation		P_{tot}	1.35	W
Storage temperature		T_{stg}	-65 to +150	℃
Junction temperature		T_j	150	℃
Operating ambient temperature		R_{amb}	-65 to +150	℃
Thermal resistance from junction to ambient		$R_{th(j-a)}$	93	K/W
Thermal resistance from junction to soldering point		$R_{th(j-s)}$	13	K/W

BSR30,BSR31,BSR33

■ Electrical Characteristics Ta = 25℃

Parameter		Symbol	Testconditons	Min	Typ	Max	Unit
Collector cutoff current		I_{CBO}	I_E = 0; V_{CB} = -60 V			-100	nA
			I_E = 0; V_{CB} = -60 V; T_j = 150 ℃			-50	μA
Emitter cutoff current		I_{EBO}	I_C = 0; V_{EB} = -5 V			-100	nA
DC current gain *	BSR30	h_{FE}	I_C = -100 mA; V_{CE} = -5 V;	10			
	BSR31; BSR33			30			
DC current gain *	BSR30	h_{FE}	I_C = -100 mA; V_{CE} = -5 V	40		120	
	BSR31,BSR33			100		300	
DC current gain *	BSR30	h_{FE}	I_C = -500 mA; V_{CE} = -5 V;	30			
	BSR31,BSR33			50			
collector-emitter saturation voltage *		V_{CEsat}	I_C = -150 mA; I_B = -15 mA			-0.25	V
			I_C = -500 mA; I_B = -50 mA			-0.5	V
base-emitter saturation voltage *		V_{BEsat}	I_C = -150 mA; I_B = -15 mA			-1	V
			I_C = -500 mA; I_B = -50 mA			-1.2	V
Transition frequency		f_T	I_C = -50 mA; V_{CE} = -10 V; f = 100 MHz	100			MHz

* Pulse test: tp = 300 μs; δ ⩽ 0.01.

■ h_{FE} Classification

TYPE	BSR30	BSR31	BSR33
Marking	BR1	BR2	BR4