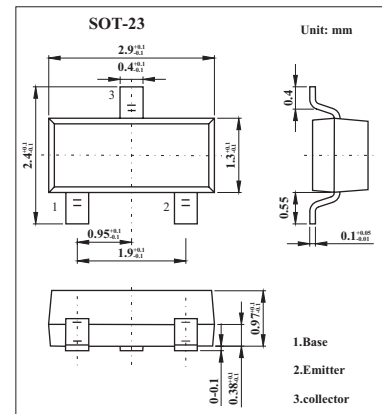


## PNP High-Voltage Transistors

## BSR20,BSR20A

## ■ Features

- Low current (max. 300 mA)
- High voltage (max. 150 V).



## ■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector-base voltage	BSR20	-130	V
	BSR20A	-160	V
Collector-emitter voltage	BSR20	-120	V
	BSR20A	-150	V
Emitter-base voltage	VEBO	-5	V
Collector current	IC	-300	mA
Peak collector current	ICM	-600	mA
Base current	IB	-100	mA
Total power dissipation *	P <sub>tot</sub>	250	mW
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>	500	K/W

\* Transistor mounted on an FR4 printed-circuit board.

**BSR20,BSR20A**■ Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit	
Collector cutoff current	BSR20	$I_{CBO}$	$I_E = 0; V_{CB} = -100\text{ V}$			-100	nA
			$I_E = 0; V_{CB} = -100\text{ V}; T_{amb} = 100\text{ }^\circ\text{C}$			-100	$\mu\text{A}$
Collector cutoff current	BSR20A	$I_{CBO}$	$I_E = 0; V_{CB} = -120\text{ V}$			-50	nA
			$I_E = 0; V_{CB} = -120\text{ V}; T_{amb} = 100\text{ }^\circ\text{C}$			-50	$\mu\text{A}$
Emitter cutoff current		$I_{EBO}$	$I_C = 0; V_{EB} = -4\text{ V}$			-50	nA
DC current gain	BSR20	$h_{FE}$	$I_C = -1\text{ mA}; V_{CE} = -5\text{ V}$	30			
	BSR20A			50			
DC current gain	BSR20	$h_{FE}$	$I_C = -10\text{ mA}; V_{CE} = -5\text{ V}$	40		180	
	BSR20A			60		240	
DC current gain	BSR20	$h_{FE}$	$I_C = -50\text{ mA}; V_{CE} = -5\text{ V}$	40			
	BSR20A			50			
base-emitter saturation voltage		$V_{CEsat}$	$I_C = -10\text{ mA}; I_B = -1\text{ mA}$			-200	mV
			$I_C = -50\text{ mA}; I_B = -5\text{ mA}$			-500	mV
Collector capacitance		$C_c$	$I_E = I_C = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$			6	pF
Transition frequency	BSR20	$f_r$	$I_C = -10\text{ mA}; V_{CE} = -10\text{ V}; f = 100\text{ MHz}$	100		400	MHz
	BSR20A			100		300	MHz

## ■ hFE Classification

TYPE	BSR20	BSR20A
Marking	T35	T36