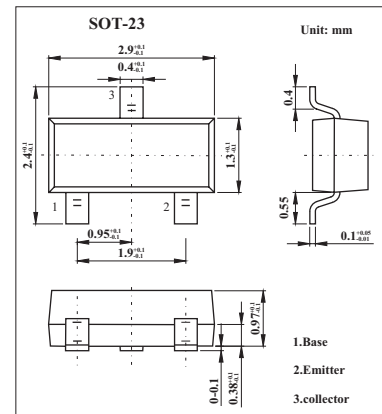


PNP High-Voltage Transistors

BSR20,BSR20A

■ Features

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

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

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	V_{EBO}	-5	V
Collector current	I_C	-300	mA
Peak collector current	I_{CM}	-600	mA
Base current	I_B	-100	mA
Total power dissipation *	P_{tot}	250	mW
Storage temperature	T_{stg}	-65 to +150	$^\circ\text{C}$
Junction temperature	T_j	150	$^\circ\text{C}$
Operating ambient temperature	R_{amb}	-65 to +150	$^\circ\text{C}$
Thermal resistance from junction to ambient *	$R_{th\ j-a}$	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	μA
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	μA
Emitter cutoff current		I_E	$I_C = 0; V_{EB} = -4\text{ V}$			-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