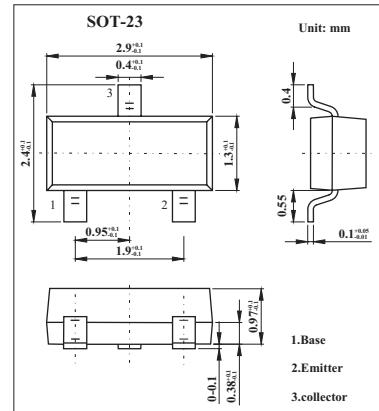


## NPN High-Voltage Transistors

### BSR19, BSR19A

#### ■ Features

- Low current (max. 300 mA)
- High voltage (max. 160 V).



#### ■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector-base voltage BSR19 BSR19A	V <sub>CBO</sub>	160	V
		180	V
Collector-emitter voltage BSR19 BSR19A	V <sub>CEO</sub>	140	V
		160	V
Emitter-base voltage	V <sub>EBO</sub>	6	V
Collector current	I <sub>C</sub>	300	mA
Peak collector current	I <sub>CM</sub>	600	mA
Base current	I <sub>B</sub>	100	mA
Peak base current	I <sub>BM</sub>	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.

**BSR19,BSR19A**■ Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector cutoff current BSR19	I <sub>CBO</sub>	I <sub>E</sub> = 0; V <sub>CB</sub> = 100 V			100	nA
		I <sub>E</sub> = 0; V <sub>CB</sub> = 100 V; T <sub>amb</sub> = 100 °C			100	µA
Collector cutoff current BSR19A	I <sub>CBO</sub>	I <sub>E</sub> = 0; V <sub>CB</sub> = 120 V			50	nA
		I <sub>E</sub> = 0; V <sub>CB</sub> = 120 V; T <sub>amb</sub> = 100 °C			50	µA
Emitter cutoff current	I <sub>EBO</sub>	I <sub>C</sub> = 0; V <sub>EB</sub> = 4 V			50	nA
DC current gain * BSR19	h <sub>FE</sub>	I <sub>C</sub> = 10 mA; V <sub>CE</sub> = 5 V	60		250	
BSR19A			80		250	
DC current gain * BSR19	h <sub>FE</sub>	I <sub>C</sub> = 50 mA; V <sub>CE</sub> = 5 V	20			
BSR19A			30			
collector-emitter saturation voltage	V <sub>CEsat</sub>	I <sub>C</sub> = 10 mA; I <sub>B</sub> = 1 mA			150	mV
collector-emitter saturation voltage BSR19	V <sub>CEsat</sub>	I <sub>C</sub> = 50 mA; I <sub>B</sub> = 5 mA			250	mV
BSR19A					200	mV
Collector capacitance	C <sub>c</sub>	I <sub>E</sub> = i <sub>e</sub> = 0; V <sub>CB</sub> = 10 V; f = 1 MHz			6	pF
Transition frequency	f <sub>T</sub>	I <sub>C</sub> = 10 mA; V <sub>CE</sub> = 10 V; f = 100 MHz	100		300	MHz

## ■ hFE Classification

TYPE	BSR19	BSR19A
Marking	U35	U36