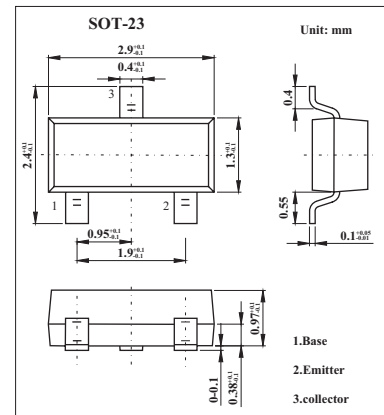


## PNP General Purpose Transistor

## BC859,BC860

## ■ Features

- Low current (max. 100 mA).
- Low voltage (max. 45 V).

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

Parameter	Symbol	BC859	BC860	Unit
Collector-base voltage	$V_{CB0}$	-30	-50	V
Collector-emitter voltage	$V_{CE0}$	-30	-45	V
Emitter-base voltage	$V_{EB0}$	-5		V
Collector current	$I_C$	-100		mA
Peak collector current	$I_{CM}$	-200		mA
Peak base current	$I_{BM}$	-200		mA
Total power dissipation *	$P_{tot}$	250		mW
Junction temperature	$T_j$	150		$^\circ\text{C}$
Storage temperature	$T_{stg}$	-65 to +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.

## BC859,BC860

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	ICBO	V <sub>CB</sub> = -30 V, I <sub>E</sub> = 0		-1	-15	nA
	ICBO	V <sub>CB</sub> = -30 V, I <sub>E</sub> = 0, T <sub>J</sub> = 150°C			-4	μA
Emitter cutoff current	IEBO	V <sub>EB</sub> = -5 V, I <sub>C</sub> = 0			-100	nA
DC current gain	BC859B,BC860B	hFE I <sub>C</sub> = -2 mA; V <sub>CE</sub> = -5 V	220		475	
	BC859C,BC860C		420		800	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = -10 mA; I <sub>B</sub> = -0.5 mA		-75	-300	mV
		I <sub>C</sub> = -100 mA; I <sub>B</sub> = -5 mA;		-250	-650	mV
Base-emitter saturation voltage *1	V <sub>BE(sat)</sub>	I <sub>C</sub> = -10 mA; I <sub>B</sub> = -0.5 mA		-700		mV
		I <sub>C</sub> = -100 mA; I <sub>B</sub> = -5 mA;		-850		mV
Base-emitter voltage *2	V <sub>BE</sub>	I <sub>C</sub> = -2 mA; V <sub>CE</sub> = -5 V	-600	-650	-750	mV
		I <sub>C</sub> = -10 mA; V <sub>CE</sub> = -5 V			-820	mV
Collector capacitance	C <sub>c</sub>	V <sub>CB</sub> = -10 V; I <sub>E</sub> = I <sub>e</sub> = 0; f = 1 MHz		4.5		pF
Emitter capacitance	C <sub>e</sub>	I <sub>C</sub> = I <sub>c</sub> = 0; V <sub>EB</sub> = -500 mV; f = 1 MHz		10		
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = -5 V; I <sub>C</sub> = -10 mA; f = 100 MHz	100			MHz
Noise figure	NF	I <sub>C</sub> = -200 μA; V <sub>CE</sub> = -5 V; R <sub>s</sub> = 2 kΩ; f = 1 kHz; B = 200 Hz			4	dB

\*1. V<sub>BE(sat)</sub> decreases by about -1.7 mV/K with increasing temperature.

\*2. V<sub>BE</sub> decreases by about -2 mV/K with increasing temperature.

## ■ hFE Classification

TYPE	BC859B	BC859C
Marking	4B	4C

TYPE	BC860B	BC860C
Marking	4F	4G