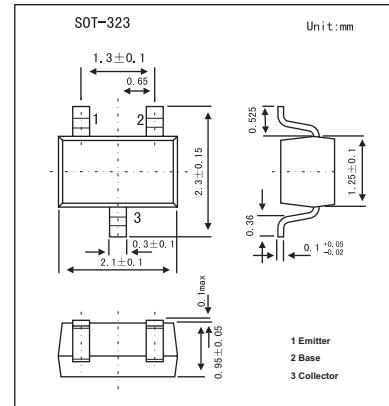


## PNP General Purpose Transistor

### BC859W, BC860W

#### ■ Features

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



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

Parameter	Symbol	BC859W	BC860W	Unit
Collector-base voltage	V <sub>CBO</sub>	-30	-50	V
Collector-emitter voltage	V <sub>C EO</sub>	-30	-45	V
Emitter-base voltage	V <sub>EBO</sub>	-5		V
Collector current	I <sub>C</sub>	-100		mA
Peak collector current	I <sub>CM</sub>	-200		mA
Peak base current	I <sub>BM</sub>	-200		mA
Total power dissipation	P <sub>tot</sub>	200		mW
Junction temperature	T <sub>j</sub>	150		°C
Storage temperature	T <sub>stg</sub>	-65 to +150		°C
Operating ambient temperature	T <sub>amb</sub>	-65 to +150		°C
Thermal resistance from junction to ambient	R <sub>th j-a</sub>	625		K/W

**BC859W,BC860W**■ Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

Parameter		Symbol	Testconditons	Min	Typ	Max	Unit	
Collector cutoff current	I <sub>CBO</sub>	I <sub>E</sub> = 0; V <sub>CB</sub> = -30 V			-15	nA		
	I <sub>CBO</sub>	I <sub>E</sub> = 0; V <sub>CB</sub> = -30 V; T <sub>j</sub> = 150 °C			-4	μA		
Emitter cutoff current	I <sub>EBO</sub>	I <sub>C</sub> = 0; V <sub>EB</sub> = -5 V			-100	nA		
DC current gain	h <sub>FE</sub>	I <sub>C</sub> = -2 mA; V <sub>CE</sub> = -5 V;		220	800			
				220	475			
				420	800			
Collector-emitter saturation voltage		V <sub>CE(sat)</sub>	I <sub>C</sub> = -10 mA; I <sub>B</sub> = -0.5 mA			-300	mV	
			I <sub>C</sub> = -100 mA; I <sub>B</sub> = -5 mA;			-650	mV	
Base-emitter voltage *2		V <sub>BE</sub>	I <sub>C</sub> = -2 mA; V <sub>CE</sub> = -5 V	600		750	mV	
I <sub>C</sub> = -10 mA; V <sub>CE</sub> = -5 V					820		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			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		pF		
Transition frequency	f <sub>T</sub>	I <sub>C</sub> = -10 mA; V <sub>CE</sub> = -5 V; 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 = 10 Hz to 15.7 kHz			4		dB	
		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			

\*1. V<sub>BEsat</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.

■ h<sub>FE</sub> Classification

TYPE	BC859W	BC859BW	BC859CW
Marking	4D	4B	4C
TYPE	BC860W	BC860BW	BC860CW
Marking	4H	4F	4G