

## PNP General Purpose Transistor

## BC856,BC857,BC858

## ■ Features

- Low current (max. 100 mA).
- Low voltage (max. 65 V).

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

Parameter	Symbol	BC856	BC857	BC858	Unit
Collector-base voltage	$V_{CB0}$	-80	-50	-30	V
Collector-emitter voltage	$V_{CE0}$	-65	-45	-30	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, standard footprint.

**BC856,BC857,BC858**

## ■ 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	BC856	h <sub>FE</sub>	I <sub>C</sub> = -2 mA; V <sub>CE</sub> = -5 V	125		475	
	BC857			125		800	
	BC856A,BC857A			125		250	
	BC856B,BC857B,BC858B			220		475	
	BC857C			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		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		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>C</sub> = 0; f = 1 MHz		4.5		pF
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		2	10	dB

\* Pulse test: t<sub>p</sub> ≤ 300μs, δ ≤ 0.02.■ h<sub>FE</sub> Classification

TYPE	BC856	BC856A	BC856B
Marking	3D	3A	3B

TYPE	BC857	BC857A	BC857B	BC857C
Marking	3H	3E	3F	3G

TYPE	BC858B
Marking	3K