

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_{CBO}	-80	-50	-30	V
Collector-emitter voltage	V_{CEO}	-65	-45	-30	V
Emitter-base voltage	V_{EBO}	-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.

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■ Electrical Characteristics Ta = 25°C

Parameter		Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current		ICBO	V _{CB} = -30 V, I _E = 0		-1	-15	nA
		ICBO	V _{CB} = -30 V, I _E = 0, T _j = 150°C			-4	μA
Emitter cutoff current		IEBO	V _{EB} = -5 V, I _C = 0			-100	nA
DC current gain	BC856	h _{FE}	I _C = -2 mA; V _{CE} = -5 V	125		475	
	BC857			125		800	
	BC856A,BC857A			125		250	
	BC856B,BC857B,BC858B			220		475	
	BC857C			420		800	
Collector-emitter saturation voltage		V _{CE(sat)}	I _C = -10 mA; I _B = -0.5 mA		-75	-300	mV
			I _C = -100 mA; I _B = -5 mA; *		-250	-650	mV
Base-emitter saturation voltage		V _{BE(sat)}	I _C = -10 mA; I _B = -0.5 mA		-700		mV
			I _C = -100 mA; I _B = -5 mA; *		-850		mV
Base-emitter voltage		V _{BE}	I _C = -2 mA; V _{CE} = -5 V	-600	-650	-750	mV
			I _C = -10 mA; V _{CE} = -5 V			-820	mV
Collector capacitance		C _C	V _{CB} = -10 V; I _E = I _C = 0; f = 1 MHz		4.5		pF
Transition frequency		f _T	V _{CE} = -5 V; I _C = -10 mA; f = 100 MHz	100			MHz
Noise figure		NF	I _C = -200 μA; V _{CE} = -5 V; R _S = 2 kΩ; f = 1 kHz; B = 200 Hz		2	10	dB

* Pulse test: t_p ≤ 300μs, δ ≤ 0.02.■ h_{FE} Classification

TYPE	BC856	BC856A	BC856B
Marking	3D	3A	3B

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

TYPE	BC858B
Marking	3K