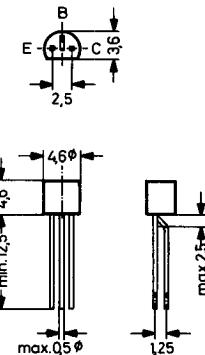


BC170

NPN Silicon Planar Transistor
for switching and amplifier applications

The transistor is subdivided into three groups, A, B and C,
according to its DC current gain.



Plastic Package ≈ JEDEC TO-92
TO-18 compatible
The case is impervious to light

Weight approximately 0.18 g
Dimensions in mm

Absolute Maximum Ratings

	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	20	V
Collector Emitter Voltage	V_{CEO}	20	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current	I_C	100	mA
Power Dissipation at $T_{amb} = 25^\circ\text{C}$	P_{tot}	300 ¹⁾	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_s	-55 to +150	°C

¹⁾ Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case

Characteristics at $T_{amb} = 25^\circ\text{C}$

	Symbol	Min.	Typ.	Max.	Unit
DC Current gain at $V_{CE} = 1 \text{ V}$, $I_C = 1 \text{ mA}$	h_{FE}	35	—	100	—
	B	80	—	250	—
	C	200	—	600	—
	at $V_{CE} = 1 \text{ V}$, $I_C = 30 \text{ mA}$	h_{FE}	30	—	—
		B	60	—	—
		C	150	—	—
Collector Saturation Voltage at $I_C = 1 \text{ mA}$, $I_B = 0.1 \text{ mA}$ at $I_C = 30 \text{ mA}$, $I_B = 3 \text{ mA}$	V_{CEsat}	—	—	0.25	V
	V_{CEsat}	—	—	0.4	V
Base Saturation Voltage at $I_C = 1 \text{ mA}$, $I_B = 0.1 \text{ mA}$	V_{BEsat}	—	—	0.7	V

Characteristics, continuation

	Symbol	Min.	Typ.	Max.	Unit
Collector Cutoff Current at $V_{CB} = 15$ V	I_{CBO}	—	—	0.1	μA
Emitter Cutoff Current at $V_{EB} = 4$ V	I_{EBO}	—	—	0.1	μA
Collector Base Capacitance at $V_{CBO} = 10$ V, $f = 1$ MHz	C_{CBO}	—	4	—	pF
Emitter Base Capacitance at $V_{EBO} = 0.5$ V, $f = 1$ MHz	C_{EBO}	—	12	—	pF
Gain Bandwidth Product at $V_{CE} = 5$ V, $I_C = 10$ mA, $f = 50$ MHz	f_T	—	100	—	MHz
Noise Figure at $V_{CE} = 5$ V, $I_C = 0.2$ mA, $R_G = 2$ k Ω , $f = 1$ kHz, $\Delta f = 200$ Hz	F	—	—	10	dB
Thermal Resistance Junction to Ambient	R_{thA}	—	—	420 ¹⁾	K/W

¹⁾ Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case

