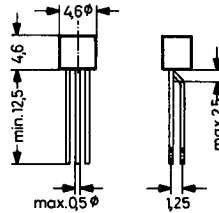
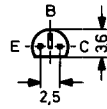


BC170

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 \approx 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	$^\circ\text{C}$
Storage Temperature Range	T_s	-55 to +150	$^\circ\text{C}$

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 $V_{CE} = 1\text{ V}$, $I_C = 1\text{ mA}$ Current Gain Group A B C at $V_{CE} = 1\text{ V}$, $I_C = 30\text{ mA}$ Current Gain Group A B C	h_{FE}	35	—	100	—
	h_{FE}	80	—	250	—
	h_{FE}	200	—	600	—
	h_{FE}	30	—	—	—
	h_{FE}	60	—	—	—
	h_{FE}	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 $V_{CB} = 15\text{ V}$	I_{CBO}	–	–	0.1	μA
Emitter Cutoff Current at $V_{EB} = 4\text{ V}$	I_{EBO}	–	–	0.1	μA
Collector Base Capacitance at $V_{CBO} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{CBO}	–	4	–	pF
Emitter Base Capacitance at $V_{EBO} = 0.5\text{ V}$, $f = 1\text{ MHz}$	C_{EBO}	–	12	–	pF
Gain Bandwidth Product at $V_{CE} = 5\text{ V}$, $I_C = 10\text{ mA}$, $f = 50\text{ MHz}$	f_T	–	100	–	MHz
Noise Figure at $V_{CE} = 5\text{ V}$, $I_C = 0.2\text{ mA}$, $R_G = 2\text{ k}\Omega$, $f = 1\text{ kHz}$, $\Delta f = 200\text{ Hz}$	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

