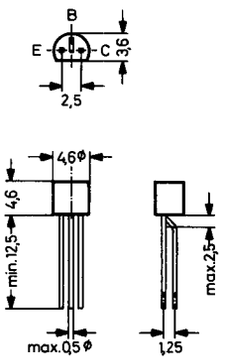
BC170

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 °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 °C

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

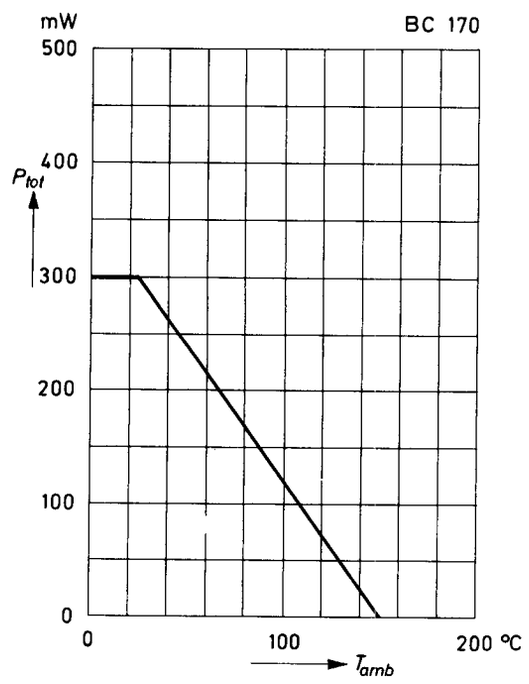
Characteristics, continuation

	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 Bandwith 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 kΩ, f = 1 kHz, △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

Admissible power dissipation versus ambient temperature

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



Common emitter collector characteristics