

MAXIMUM RATINGS

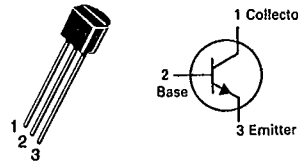
Rating	Symbol	BC 174A,B	BC 171A,B	BC 172A,B	Unit
Collector-Emitter Voltage	V _{CEO}	65	45	25	V _{dc}
Collector-Base Voltage	V _{CBO}	80	50	30	V _{dc}
Emitter-Base Voltage	V _{EBO}	6.0			V _{dc}
Collector Current — Continuous	I _C	100			mA _{dc}
Total Device Dissipation @ T _A = 25°C Derate above 25°C	P _D	350 2.8			mW mW/°C
Total Device Dissipation @ T _C = 25°C Derate above 25°C	P _D	1.0 8.0			Watt mW/°C
Operating and Storage Junction Temperature Range	T _J , T _{stg}	-55 to +150			°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	R _{θJC}	125	°C/W
Thermal Resistance, Junction to Ambient	R _{θJA}	357	°C/W

BC171A, B
BC172A, B, C
BC174A, B

CASE 29-04, STYLE 17
TO-92 (TO-226AA)



AMPLIFIER TRANSISTORS

NPN SILICON

Refer to BC546 for graphs.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (I _C = 2.0 mA, I _B = 0)	V _{(BR)CEO}	65 45 25	— — —	— — —	V
Emitter-Base Breakdown Voltage (I _E = 100 μA, I _C = 0)	V _{(BR)EBO}	6.0 6.0 6.0	— — —	— — —	V
Collector Cutoff Current (V _{CE} = 70 V, V _{BE} = 0) (V _{CE} = 50 V, V _{BE} = 0) (V _{CE} = 35 V, V _{BE} = 0) (V _{CE} = 30 V, V _{BE} = 0) T _A = 125°C	I _{CES}	— — — —	0.2 0.2 0.2 —	15 15 15 4.0	nA μA

ON CHARACTERISTICS

DC Current Gain (I _C = 10 μA, V _{CE} = 5.0 V)	BC171A/2A/4A BC171B/2B/4B BC172C	h _{FE}	— — —	90 150 270	— — —	
(I _C = 2.0 mA, V _{CE} = 5.0 V)	BC171A/2A/4A BC171B/2B/4B BC172C		120 180 380	180 290 520	220 460 800	
(I _C = 100 mA, V _{CE} = 5.0 V)	BC171A/2A/4A BC171B/2B/4B BC172C		— — —	120 180 300	— — —	
Collector-Emitter Saturation Voltage (I _C = 10 mA, I _B = 0.5 mA) (I _C = 100 mA, I _B = 5.0 mA)		V _{CE(sat)}	— —	0.09 0.2	0.25 0.6	V
Base-Emitter Saturation Voltage (I _C = 10 mA, I _B = 0.5 mA)		V _{BE(sat)}	—	0.7	—	V
Base-Emitter On Voltage (I _C = 2.0 mA, V _{CE} = 5.0 V)		V _{BE(on)}	0.55	—	0.7	V

ELECTRICAL CHARACTERISTICS (continued) ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
DYNAMIC CHARACTERISTICS, SMALL-SIGNAL CHARACTERISTICS					
Current-Gain Bandwidth Product ($I_C = 10\text{ mA}$, $V_{CE} = 5.0\text{ V}$, $f = 100\text{ MHz}$)	f_T	150 150 150	300 300 300	—	MHz
Output Capacitance ($V_{CB} = 10\text{ V}$, $I_C = 0$, $f = 1.0\text{ MHz}$)	C_{obo}	—	1.7	4.5	pF
Input Capacitance ($V_{BE} = 0.5\text{ V}$, $I_C = 0$, $f = 1.0\text{ MHz}$)	C_{ibo}	—	10	—	pF
Small-Signal Current Gain ($I_C = 2.0\text{ mA}$, $V_{CE} = 5.0\text{ V}$, $f = 1.0\text{ kHz}$)	h_{fe}	125 240 450	220 330 600	260 500 900	
Noise Figure ($I_C = 0.2\text{ mA}$, $V_{CE} = 5.0\text{ V}$, $R_S = 2.0\text{ kohms}$, $f = 1.0\text{ kHz}$, $\Delta f = 200\text{ Hz}$)	NF	— — —	2.0 2.0 2.0	10 10 10	dB

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