

MAXIMUM RATINGS

Rating	Symbol	BC 177	BC 178	BC 179	Unit
Collector-Emitter Voltage	V _{CEO}	45	25	20	V _{dc}
Collector-Emitter Voltage	V _{CES}	50	30	25	V _{dc}
Collector-Base Voltage	V _{CBO}	50	30	25	V _{dc}
Emitter-Base Voltage	V _{EBO}	5			V _{dc}
Collector Current - Continuous	I _C	0.2			Amp
Total Device Dissipation @ T _A = 25°C Derate above 25°C	P _D	0.6 2.28			Watt mW/°C
Total Device Dissipation @ T _C = 25°C T _C = 100°C Derate above 25°C	P _D	1 6.67			Watt mW/°C
Operating and Storage Junction Temperature Range	T _J , T _{stg}	- 65 to + 200			°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	R _{θJC}	175	°C/W

BC177
BC178
BC179

CASE 22-03, STYLE 1
TO-18 (TO-206AA)

TRANSISTOR

PNP SILICON

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

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector Emitter Leakage Current (V _{CE} = 20 V, I _E = 0) (V _{CE} = 20 V, I _E = 0, T _{Amb} = 125°C)	I _{CES}			100 4	nA μA
Collector Base Breakdown Voltage (I _C = 10 μA)	V _{(BR)CBO}	50 30 25			V
Collector Emitter Breakdown Voltage (I _C = 2 mA, I _E = 0)	V _{(BR)CEO}	45 25 20			V
Emitter Base Breakdown Voltage (I _E = 10 μA, I _C = 0)	V _{(BR)EBO}	5			V

ON CHARACTERISTICS

DC Current Gain (I _C = 2 mA, V _{CE} = 5 V)	BC177 BC178 BC179 V1 Group A Group B Group C Group	h _{FE}	120 120 180 70 120 180 380		460 800 800 140 220 460 800	
Collector Emitter Saturation Voltage (I _C = 10 mA, I _B = 0.5 mA) (I _C = 100 mA, I _B = 5 mA)		V _{CE(sat)}			0.2 0.6	V
Base Emitter Saturation Voltage (I _C = 10 mA, I _B = 0.5 mA) (I _C = 100 mA, I _B = 5 mA)		V _{BE(sat)}		0.7 0.9	0.8	V
Base Emitter on Voltage (I _C = 2 mA, V _{CE} = 5 V)		V _{BE(on)}	0.6		0.75	V
Collector Knee Voltage (I _C = 10 mA, I _B = the value for which I _C = 11 mA, at V _{CE} = 1V)		V _{CE(K)}		0.4	0.6	V

DYNAMIC CHARACTERISTICS

Transition Frequency (V _{CE} = 5 V, I _C = 10 mA, f = 50 MHz)		f _T	200	300		MHz
Noise Figure (V _{CE} = 5 V, I _C = 0.2 mA, R _g = 2 KΩ) F = 30 Hz to 15 kHz F = 1 kHz, F = 200 Hz	BC179 BC179 BC177/178	NF			4 4 10	dB

BC177, BC178, BC179

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

Characteristic		Symbol	Min	Typ	Max	Unit
Output Capacitance ($V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$)		C_{obo}		3.5	4	pF
h21e Parameters ($V_{CE} = 5\text{ V}$, $I_C = 2\text{ mA}$, $f = 1\text{ kHz}$)	BC177	h21e	125		500	
	BC178		125		900	
	BC179		240		900	
	V1 Group		75		150	
	A Group		125		260	
	B Group		240		500	
	C Group		450		900	
h11e Parameters ($V_{CE} = 5\text{ V}$, $I_C = 2\text{ mA}$, $f = 1\text{ kHz}$)	V1 Group	h11e	1.0		2.2	$\text{k}\Omega$
	A Group		1.6		4.5	
	B Group		3.2		8.5	
	C Group		6.0		15.0	
h22e Parameters ($V_{GE} = 5\text{ V}$, $I_C = 2\text{ mA}$, $f = 1\text{ kHz}$)	V1 Group	h22e			25	μmhos
	A Group				30	
	B Group				60	
	C Group				110	

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