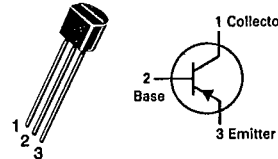


T-29-19

BC212, A, B
BC213, A, B, C
BC214, B, C

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



AMPLIFIER TRANSISTORS
PNP SILICON

Refer to BC307 for graphs.

MAXIMUM RATINGS

Rating	Symbol	BC 212	BC 213	BC 214	Unit
Collector-Emitter Voltage	V _{CEO}	50	30	30	V _{dc}
Collector-Base Voltage	V _{CBO}	60	45	45	V _{dc}
Emitter-Base Voltage	V _{EBO}	5.0			V _{dc}
Collector Current - Continuous	I _C	100			mAdc
Total Device Dissipation @ T _A = 25°C Derate above 25°C	P _D	350			mW
		2.8			mW/°C
Total Device Dissipation @ T _C = 25°C Derate above 25°C	P _D	1.0			Watt
		8.0			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

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

Characteristic	Type	Symbol	Min	Typ	Max	Unit
----------------	------	--------	-----	-----	-----	------

OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage (I _C = 2.0 mAdc, I _B = 0)	BC212 BC213 BC214	V _{(BR)CEO}	50 30 30	— — —	— — —	V _{dc}
Collector-Base Breakdown Voltage (I _C = 10 μA, I _E = 0)	BC212 BC213 BC214	V _{(BR)CBO}	60 45 45	— — —	— — —	V _{dc}
Emitter-Base Breakdown Voltage (I _E = 10 μAdc, I _C = 0)	BC212 BC213 BC214	V _{(BR)EBO}	5 5 5	— — —	— — —	V _{dc}
Collector-Emitter Leakage Current (V _{CB} = 30 V)	BC212 BC213 BC214	I _{CBO}	— — —	— — —	15 15 15	nAdc
Emitter-Base Leakage Current (V _{EB} = 4 V, I _C = 0)	BC212 BC213 BC214	I _{EBO}	— — —	— — —	15 15 15	nAdc

ON CHARACTERISTICS

DC Current Gain (I _C = 10 μAdc, V _{CE} = 5 Vdc)	BC212 BC213 BC214	h _{FE}	40 40 100	— — —	— — —	
(I _C = 2 mAdc, V _{CE} = 5 Vdc)	BC212 BC213 BC214		60 80 140	— — —	— — 600	
(I _C = 100 mAdc, V _{CE} = 5 Vdc)*	BC212, BC214 BC213		— —	120 140	— —	

T-29-19

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

Characteristic	Type	Symbol	Min	Typ	Max	Unit
Collector-Emitter Saturation Voltage ($I_C = 10 \text{ mA}$, $I_B = 0.5 \text{ mA}$) ($I_C = 100 \text{ mA}$, $I_B = 5 \text{ mA}$)*		$V_{CE(sat)}$	—	0.10 0.25	— 0.6	Vdc
Base-Emitter Saturation Voltage ($I_C = 100 \text{ mA}$, $I_B = 5 \text{ mA}$)		$V_{BE(sat)}$	—	1.00	1.4	Vdc
Base-Emitter on Voltage ($I_C = 2 \text{ mA}$, $V_{CE} = 5 \text{ Vdc}$)		$V_{BE(on)}$	0.6	0.62	0.72	Vdc

DYNAMIC CHARACTERISTICS

Current-Gain Bandwidth Product ($I_C = 10 \text{ mA}$, $V_{CE} = 5 \text{ Vdc}$, $f = 50 \text{ MHz}$)	BC212	f_T	—	280	—	MHz
	BC214		—	320	—	
	BC213		—	360	—	
Common-Base Output Capacitance ($V_{CB} = 10 \text{ Vdc}$, $I_C = 0$, $f = \text{MHz}$)		C_{ob}	—	—	6.0	pF
Noise Figure ($I_C = 0.2 \text{ mA}$, $V_{CE} = 5 \text{ Vdc}$, $R_S = 2 \text{ Kohms}$, $f = 30 \text{ Hz to } 15 \text{ KHz}$) ($I_C = 0.2 \text{ mA}$, $V_{CE} = 5 \text{ Vdc}$, $R_S = 2 \text{ Kohms}$, $f = 1 \text{ KHz}$, $f = 200 \text{ Hz}$)	BC214	NF	—	—	2	dB
	BC213		—	—	10	
	BC212		—	—	10	
Small Signal Current Gain ($I_C = 2 \text{ mA}$, $V_{CE} = 5 \text{ Vdc}$, $f = 1 \text{ KHz}$)	BC212	h_{fe}	60	—	—	
	BC213		80	—	—	
	BC214		140	—	—	
	BC212A, BC213A		100	—	300	
	BC212B, BC213B,		200	—	400	
	BC214B		200	—	400	
	BC213C, BC214C		350	—	600	

*Pulse-test: T_p 300 s, Duty-cycle 2%.