

Amplifier Transistors

NPN Silicon

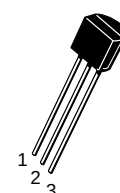
BC182,A,B
BC183
BC184

MAXIMUM RATINGS

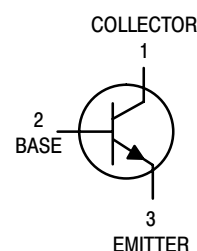
Rating	Symbol	BC182	BC183	BC184	Unit
Collector–Emitter Voltage	V_{CEO}	50	30	30	Vdc
Collector–Base Voltage	V_{CBO}	60	45	45	Vdc
Emitter–Base Voltage	V_{EBO}	6.0			Vdc
Collector Current — Continuous	I_C	100			mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	350 2.8			mW mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.0 8.0			Watts mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	–55 to +150			$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	357	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	125	$^\circ\text{C/W}$



CASE 29–04, STYLE 17
TO–92 (TO–226AA)



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

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector–Emitter Breakdown Voltage ($I_C = 2.0\text{ mA}$, $I_B = 0$)	BC182 BC183 BC184	$V_{(BR)CEO}$	50 30 30	— — —	— — —	V
Collector–Base Breakdown Voltage ($I_C = 10\text{ }\mu\text{A}$, $I_E = 0$)	BC182 BC183 BC184	$V_{(BR)CBO}$	60 45 45	— — —	— — —	V
Emitter–Base Breakdown Voltage ($I_E = 100\text{ }\mu\text{A}$, $I_C = 0$)		$V_{(BR)EBO}$	6.0	—	—	V
Collector Cutoff Current ($V_{CB} = 50\text{ V}$, $V_{BE} = 0$) ($V_{CB} = 30\text{ V}$, $V_{BE} = 0$)	BC182 BC183 BC184	I_{CBO}	— — —	0.2 0.2 0.2	15 15 15	nA
Emitter–Base Leakage Current ($V_{EB} = 4.0\text{ V}$, $I_C = 0$)		I_{EBO}	—	—	15	nA

BC182,A,B BC183 BC184

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

Characteristic		Symbol	Min	Typ	Max	Unit
ON CHARACTERISTICS						
DC Current Gain (I _C = 10 µA, V _{CE} = 5.0 V) (I _C = 2.0 mA, V _{CE} = 5.0 V) (I _C = 100 mA, V _{CE} = 5.0 V)	BC182	h _{FE}	40	—	—	—
	BC183		40	—	—	
	BC184		100	—	—	
	BC182		120	—	500	
	BC183		120	—	800	
	BC184		250	—	800	
	BC182		80	—	—	
	BC183		80	—	—	
	BC184		130	—	—	
Collector–Emitter On Voltage (I _C = 10 mA, I _B = 0.5 mA) (I _C = 100 mA, I _B = 5.0 mA) ⁽¹⁾		V _{CE(sat)}	— —	0.07 0.2	0.25 0.6	V
Base–Emitter Saturation Voltage (I _C = 100 mA, I _B = 5.0 mA) ⁽¹⁾		V _{BE(sat)}	—	—	1.2	V
Base–Emitter On Voltage (I _C = 100 µA, V _{CE} = 5.0 V) (I _C = 2.0 mA, V _{CE} = 5.0 V) (I _C = 100 mA, V _{CE} = 5.0 V) ⁽¹⁾		V _{BE(on)}	— 0.55 —	0.5 0.62 0.83	— 0.7 —	V
DYNAMIC CHARACTERISTICS						
Current–Gain — Bandwidth Product (I _C = 0.5 mA, V _{CE} = 3.0 V, f = 100 MHz) (I _C = 10 mA, V _{CE} = 5.0 V, f = 100 MHz)	BC182	f _T	—	100	—	MHz
	BC183		—	120	—	
	BC184		—	140	—	
	BC182		150	200	—	
	BC183		150	240	—	
	BC184		150	280	—	
Common Base Output Capacitance (V _{CB} = 10 V, I _C = 0, f = 1.0 MHz)		C _{ob}	—	—	5.0	pF
Common Base Input Capacitance (V _{EB} = 0.5 V, I _C = 0, f = 1.0 MHz)		C _{ib}	—	8.0	—	pF
Small–Signal Current Gain (I _C = 2.0 mA, V _{CE} = 5.0 V, f = 1.0 kHz)	BC182	h _{fe}	125	—	500	—
	BC183		125	—	900	
	BC184		240	—	900	
	BC182A		125	—	260	
	BC182B		240	—	500	
Noise Figure (I _C = 0.2 mA, V _{CE} = 5.0 V, R _S = 2.0 kΩ, f = 1.0 kHz) (I _C = 0.2 mA, V _{CE} = 5.0 V, R _S = 2.0 kΩ, f = 1.0 kHz, f = 200 Hz)	BC184	NF	—	2.0	4.0	dB
	BC182		—	2.0	10	
	BC183		—	2.0	10	
	BC184		—	2.0	4.0	

1. Pulse Test: T_p 300 s, Duty Cycle 2.0%.

BC182,A,B BC183 BC184

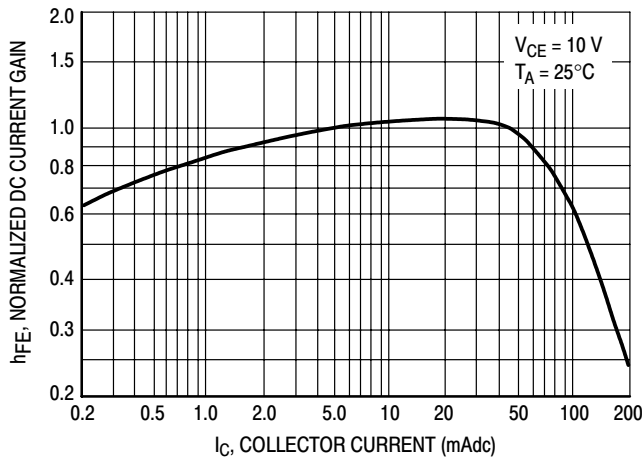


Figure 1. Normalized DC Current Gain

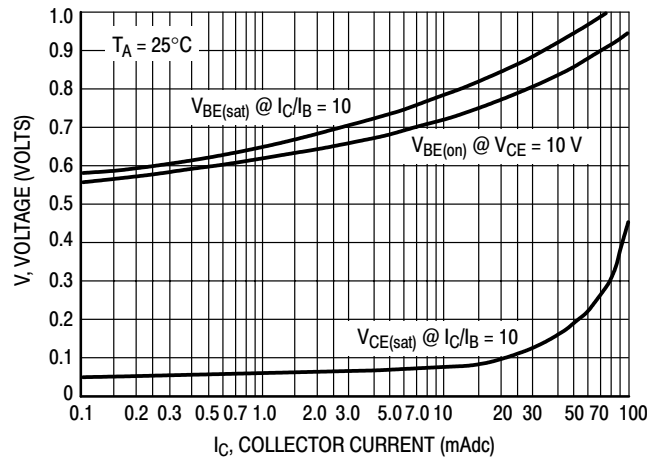


Figure 2. "Saturation" and "On" Voltages

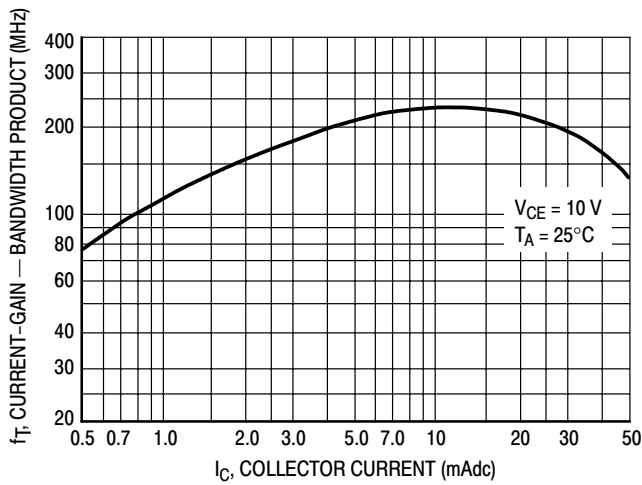


Figure 3. Current-Gain — Bandwidth Product

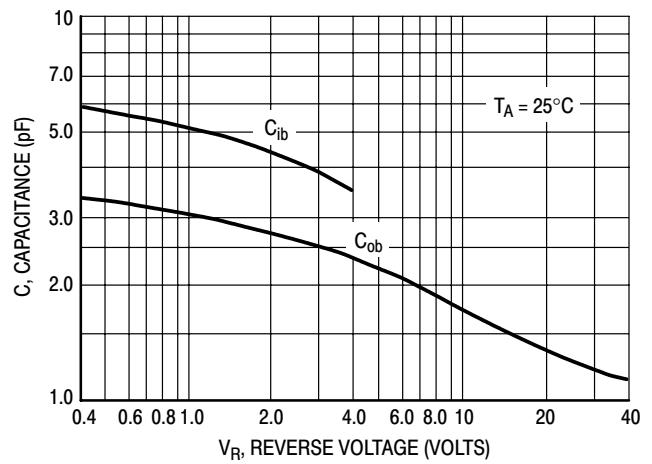


Figure 4. Capacitances

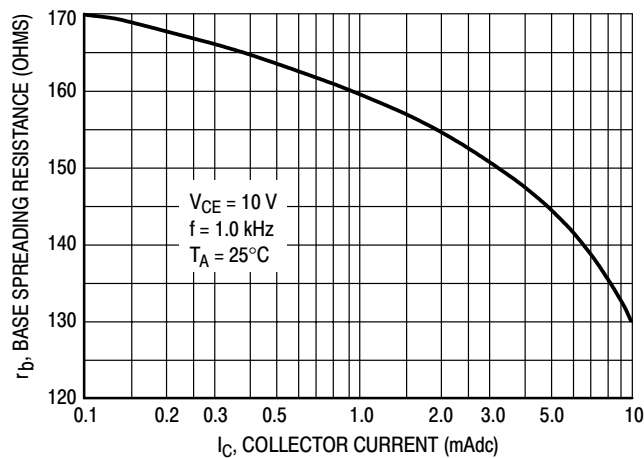
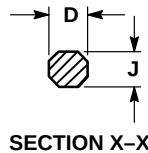
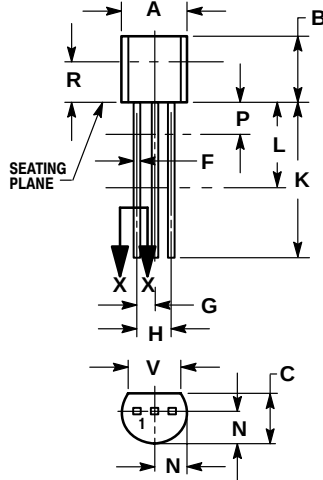


Figure 5. Base Spreading Resistance

BC182,A,B BC183 BC184

PACKAGE DIMENSIONS

CASE 029-04
(TO-226AA)
ISSUE AD



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. DIMENSION F APPLIES BETWEEN P AND L. DIMENSION D AND J APPLY BETWEEN L AND K MINIMUM. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.175	0.205	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.022	0.41	0.55
F	0.016	0.019	0.41	0.48
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.020	0.39	0.50
K	0.500	---	12.70	---
L	0.250	---	6.35	---
N	0.080	0.105	2.04	2.66
P	---	0.100	---	2.54
R	0.115	---	2.93	---
V	0.135	---	3.43	---

STYLE 17:

1. COLLECTOR
2. BASE
3. EMITTER

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