

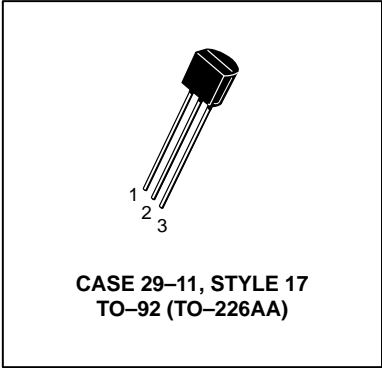
# Amplifier Transistors

## NPN Silicon

**BC182**  
**BC182A**  
**BC182B**

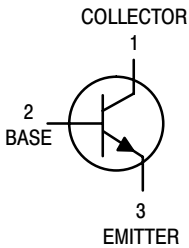
### MAXIMUM RATINGS

Rating	Symbol	BC182	Unit
Collector–Emitter Voltage	$V_{CEO}$	50	Vdc
Collector–Base Voltage	$V_{CBO}$	60	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 $25^\circ\text{C}$	$P_D$	350 2.8	mW mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	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	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	125	$^\circ\text{C}/\text{W}$



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

# BC182

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted) (Continued)

Characteristic	Symbol	Min	Typ	Max	Unit
<b>ON CHARACTERISTICS</b>					
DC Current Gain (I <sub>C</sub> = 10 μA, V <sub>CE</sub> = 5.0 V)	h <sub>FE</sub>	40	—	—	—
(I <sub>C</sub> = 2.0 mA, V <sub>CE</sub> = 5.0 V)	BC182	120	—	500	
	BC182A	120	—	220	
	BC182B	180	—	500	
(I <sub>C</sub> = 100 mA, V <sub>CE</sub> = 5.0 V)	BC182	80	—	—	
Collector–Emitter On Voltage (I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0.5 mA) (I <sub>C</sub> = 100 mA, I <sub>B</sub> = 5.0 mA) <sup>(1)</sup>	V <sub>CE(sat)</sub>	—	0.07 0.2	0.25 0.6	V
Base–Emitter Saturation Voltage (I <sub>C</sub> = 100 mA, I <sub>B</sub> = 5.0 mA) <sup>(1)</sup>	V <sub>BE(sat)</sub>	—	—	1.2	V
Base–Emitter On Voltage (I <sub>C</sub> = 100 μA, V <sub>CE</sub> = 5.0 V) (I <sub>C</sub> = 2.0 mA, V <sub>CE</sub> = 5.0 V) (I <sub>C</sub> = 100 mA, V <sub>CE</sub> = 5.0 V) <sup>(1)</sup>	V <sub>BE(on)</sub>	— 0.55 —	0.5 0.62 0.83	— 0.7 —	V
<b>DYNAMIC CHARACTERISTICS</b>					
Current–Gain — Bandwidth Product (I <sub>C</sub> = 0.5 mA, V <sub>CE</sub> = 3.0 V, f = 100 MHz)	f <sub>T</sub>	—	100	—	MHz
(I <sub>C</sub> = 10 mA, V <sub>CE</sub> = 5.0 V, f = 100 MHz)		150	200	—	
Common Base Output Capacitance (V <sub>CB</sub> = 10 V, I <sub>C</sub> = 0, f = 1.0 MHz)	C <sub>ob</sub>	—	—	5.0	pF
Common Base Input Capacitance (V <sub>EB</sub> = 0.5 V, I <sub>C</sub> = 0, f = 1.0 MHz)	C <sub>ib</sub>	—	8.0	—	pF
Small–Signal Current Gain (I <sub>C</sub> = 2.0 mA, V <sub>CE</sub> = 5.0 V, f = 1.0 kHz)	h <sub>fe</sub>	125	—	500	—
	BC182	125	—	260	
	BC182A	240	—	500	
Noise Figure (I <sub>C</sub> = 0.2 mA, V <sub>CE</sub> = 5.0 V, R <sub>S</sub> = 2.0 kΩ, f = 1.0 kHz)	NF	—	2.0	10	dB

1. Pulse Test: T<sub>p</sub> 300 s, Duty Cycle 2.0%.

# BC182

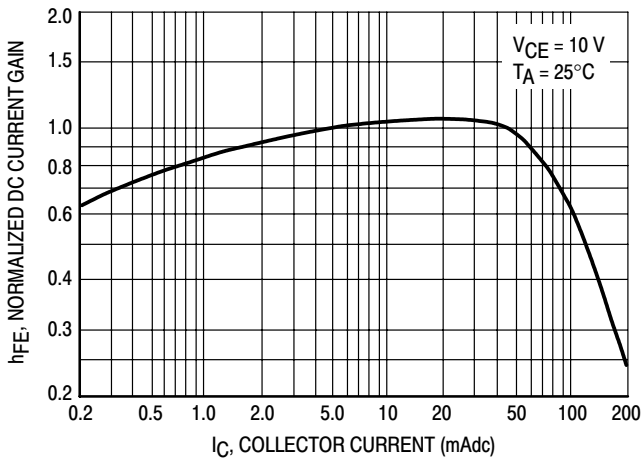


Figure 1. Normalized DC Current Gain

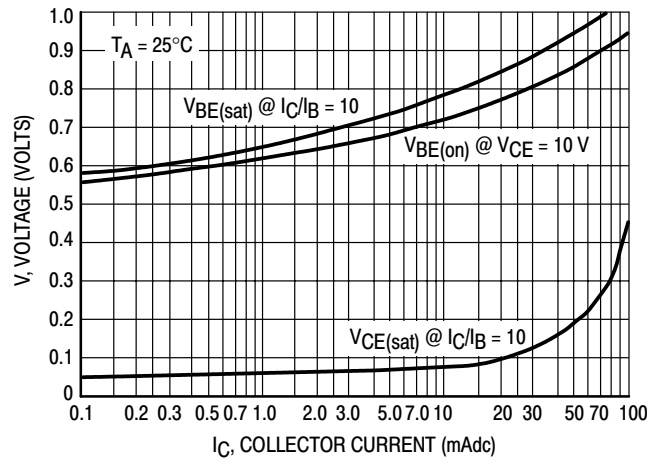


Figure 1. "Saturation" and "On" Voltages

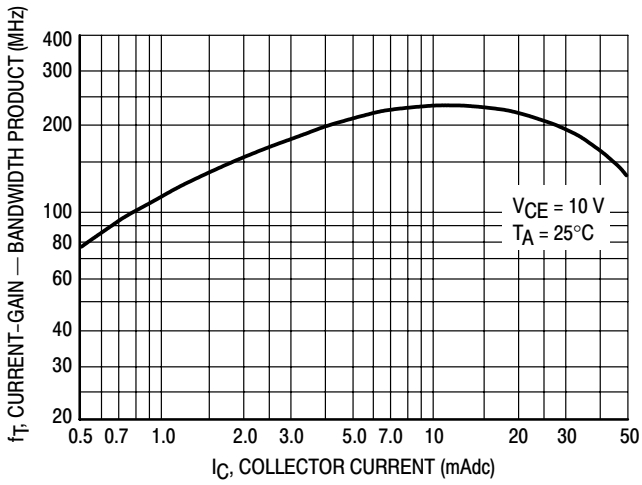


Figure 2. Current-Gain — Bandwidth Product

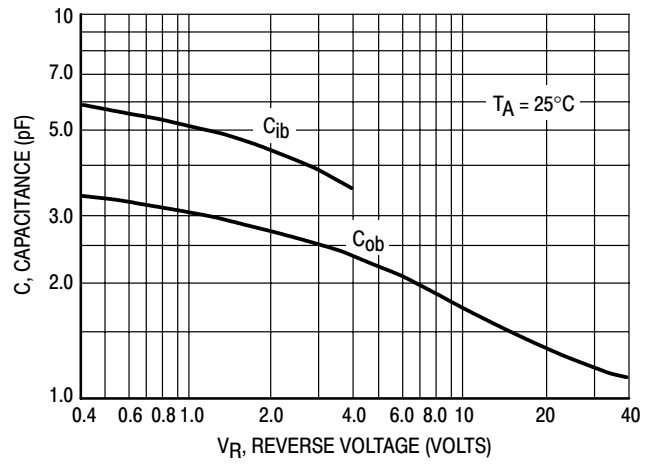


Figure 3. Capacitances

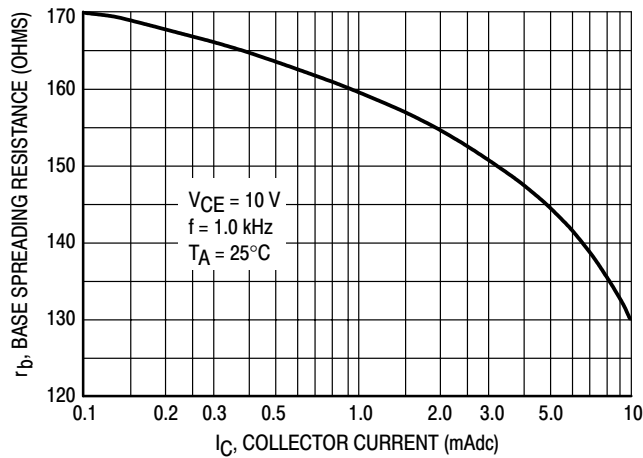
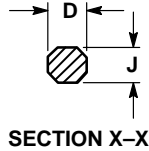
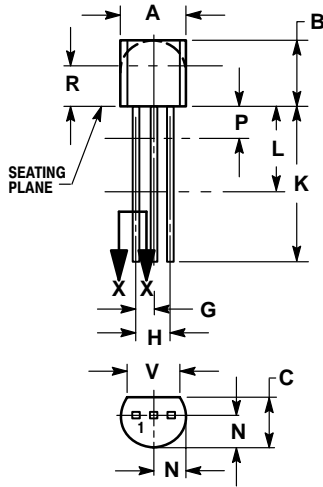


Figure 4. Base Spreading Resistance

## PACKAGE DIMENSIONS

# BC182

## TO-92 (TO-226) CASE 29-11 ISSUE AL




TYLE 17:  
PIN 1. COLLECTOR  
2. BASE  
3. EMITTER

### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. 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	0.021	0.407	0.533
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	---

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