

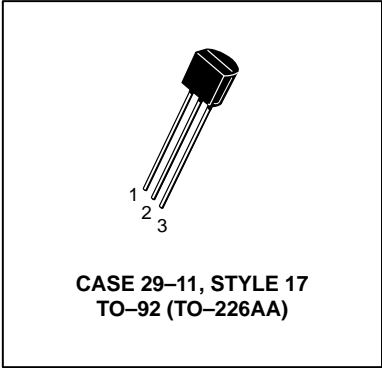
Amplifier Transistors

NPN Silicon

BC182
BC182A
BC182B

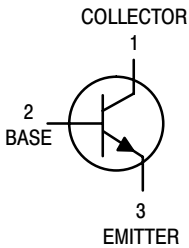
MAXIMUM RATINGS

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°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	$^\circ\text{C}/\text{W}$
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 ($I_C = 2.0\text{ mA}, I_B = 0$)	$V_{(BR)CEO}$	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 ($T_A = 25^\circ\text{C}$ unless otherwise noted) (Continued)

Characteristic	Symbol	Min	Typ	Max	Unit
ON CHARACTERISTICS					
DC Current Gain ($I_C = 10\ \mu\text{A}$, $V_{CE} = 5.0\ \text{V}$)	BC182 h_{FE}	40	—	—	—
($I_C = 2.0\ \text{mA}$, $V_{CE} = 5.0\ \text{V}$)	BC182	120	—	500	
	BC182A	120	—	220	
	BC182B	180	—	500	
($I_C = 100\ \text{mA}$, $V_{CE} = 5.0\ \text{V}$)	BC182	80	—	—	
Collector–Emitter On Voltage ($I_C = 10\ \text{mA}$, $I_B = 0.5\ \text{mA}$) ($I_C = 100\ \text{mA}$, $I_B = 5.0\ \text{mA}$)(1)	$V_{CE(sat)}$	—	0.07	0.25	V
		—	0.2	0.6	
Base–Emitter Saturation Voltage ($I_C = 100\ \text{mA}$, $I_B = 5.0\ \text{mA}$)(1)	$V_{BE(sat)}$	—	—	1.2	V
Base–Emitter On Voltage ($I_C = 100\ \mu\text{A}$, $V_{CE} = 5.0\ \text{V}$) ($I_C = 2.0\ \text{mA}$, $V_{CE} = 5.0\ \text{V}$) ($I_C = 100\ \text{mA}$, $V_{CE} = 5.0\ \text{V}$)(1)	$V_{BE(on)}$	—	0.5	—	V
		0.55	0.62	0.7	
		—	0.83	—	
DYNAMIC CHARACTERISTICS					
Current–Gain — Bandwidth Product ($I_C = 0.5\ \text{mA}$, $V_{CE} = 3.0\ \text{V}$, $f = 100\ \text{MHz}$)	f_T	—	100	—	MHz
($I_C = 10\ \text{mA}$, $V_{CE} = 5.0\ \text{V}$, $f = 100\ \text{MHz}$)		150	200	—	
Common Base Output Capacitance ($V_{CB} = 10\ \text{V}$, $I_C = 0$, $f = 1.0\ \text{MHz}$)	C_{ob}	—	—	5.0	pF
Common Base Input Capacitance ($V_{EB} = 0.5\ \text{V}$, $I_C = 0$, $f = 1.0\ \text{MHz}$)	C_{ib}	—	8.0	—	pF
Small–Signal Current Gain ($I_C = 2.0\ \text{mA}$, $V_{CE} = 5.0\ \text{V}$, $f = 1.0\ \text{kHz}$)	BC182 BC182A BC182B h_{fe}	125	—	500	—
		125	—	260	
		240	—	500	
Noise Figure ($I_C = 0.2\ \text{mA}$, $V_{CE} = 5.0\ \text{V}$, $R_S = 2.0\ \text{k}\Omega$, $f = 1.0\ \text{kHz}$)	NF	—	2.0	10	dB

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

BC182

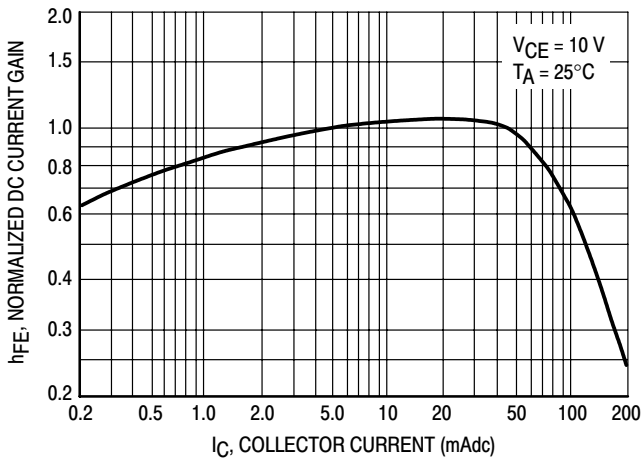


Figure 1. Normalized DC Current Gain

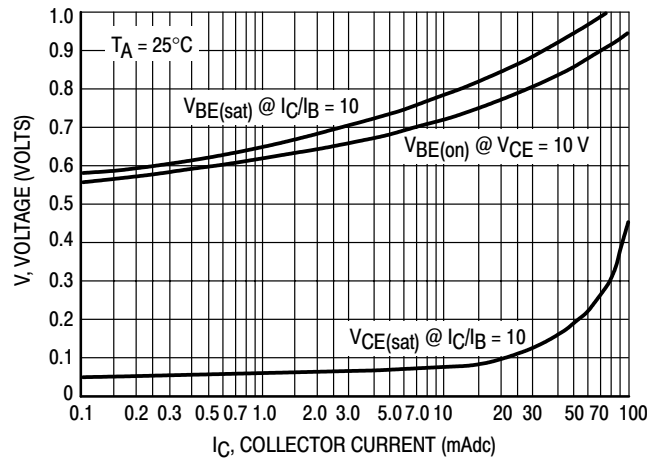


Figure 1. "Saturation" and "On" Voltages

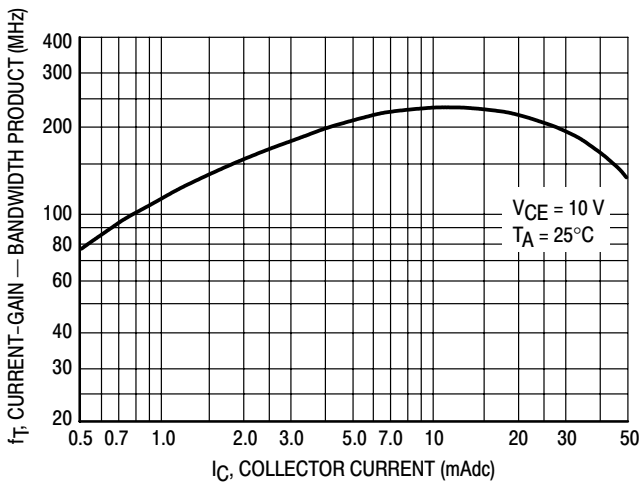


Figure 2. Current-Gain — Bandwidth Product

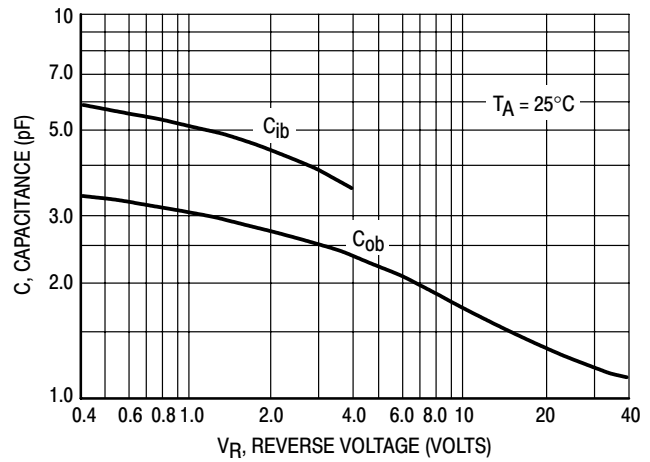


Figure 3. Capacitances

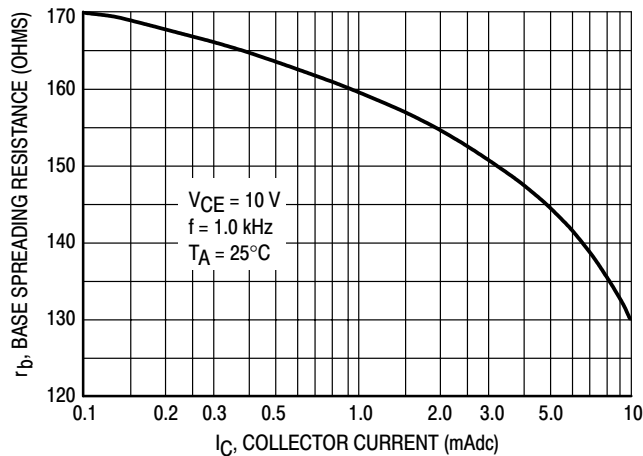
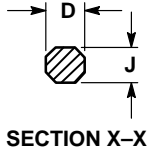
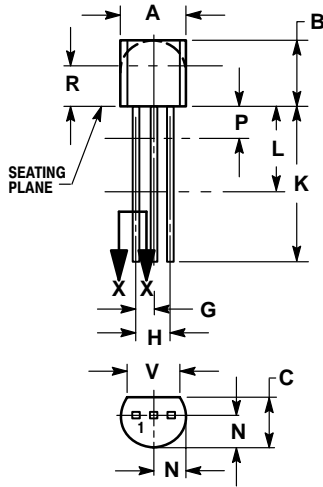


Figure 4. Base Spreading Resistance

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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