

BC182, BC182A, BC182B

Amplifier Transistors

NPN Silicon

Features

- Pb-Free Package is Available*

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	mA dc
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	W mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	–55 to +150	$^\circ\text{C}$

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

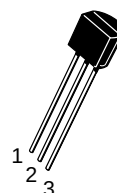
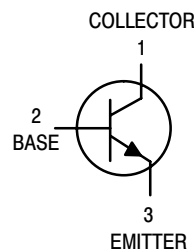
THERMAL CHARACTERISTICS

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	$^\circ\text{C/W}$



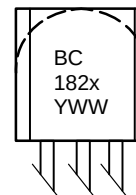
ON Semiconductor®

<http://onsemi.com>



TO-92
CASE 29
STYLE 17

MARKING DIAGRAM



BC Specific Device Code
x A or B
Y = Year
WW = Work Week

ORDERING INFORMATION

Device	Package	Shipping†
BC182	TO-92	5000 Units / Box
BC182G	TO-92 (Pb-Free)	5000 Units / Box
BC182A	TO-92	5000 Units / Box
BC182B	TO-92	5000 Units / Box
BC182BRL1	TO-92	2000 /Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

BC182, BC182A, BC182B

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

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector–Emitter Breakdown Voltage (I _C = 2.0 mA, I _B = 0)	V _{(BR)CEO}	50	–	–	V
Collector–Base Breakdown Voltage (I _C = 10 µA, I _E = 0)	V _{(BR)CBO}	60	–	–	V
Emitter–Base Breakdown Voltage (I _E = 100 µA, I _C = 0)	V _{(BR)EBO}	6.0	–	–	V
Collector Cutoff Current (V _{CB} = 50 V, V _{BE} = 0)	I _{CBO}	–	0.2	15	nA
Emitter–Base Leakage Current (V _{EB} = 4.0 V, I _C = 0)	I _{EBO}	–	–	15	nA

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 BC182 BC182A BC182B BC182	h _{FE}	40 120 120 180 80	– – –	– 500 220 500 –	–
Collector–Emitter On Voltage (I _C = 10 mA, I _B = 0.5 mA) (I _C = 100 mA, I _B = 5.0 mA) (Note 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) (Note 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) (Note 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)		f _T	– 150	100 200	–	MHz
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 BC182A BC182B		h _{fe}	125 125 240	– – –	500 260 500	–
Noise Figure (I _C = 0.2 mA, V _{CE} = 5.0 V, R _S = 2.0 kΩ, f = 1.0 kHz)		NF	–	2.0	10	dB

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

BC182, BC182A, BC182B

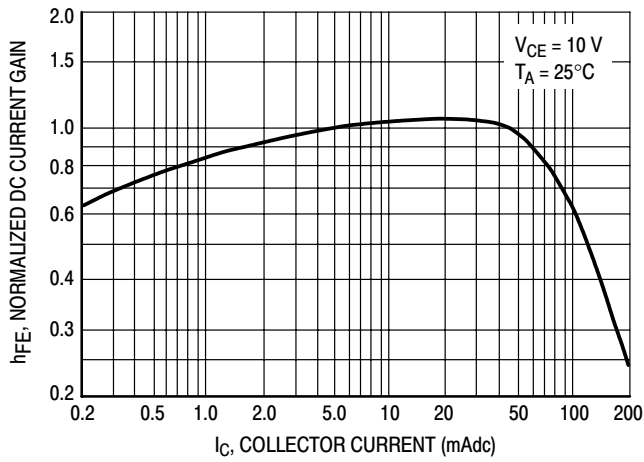


Figure 1. Normalized DC Current Gain

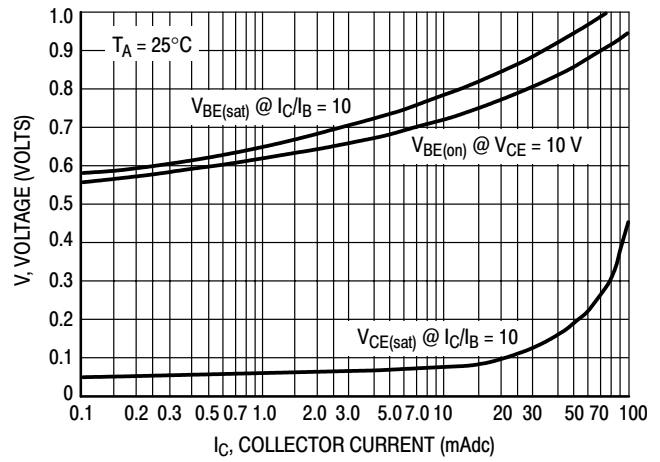


Figure 1. "Saturation" and "On" Voltages

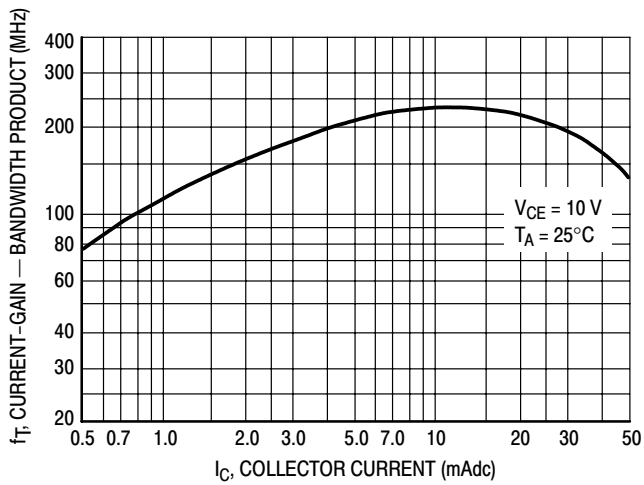


Figure 2. Current-Gain — Bandwidth Product

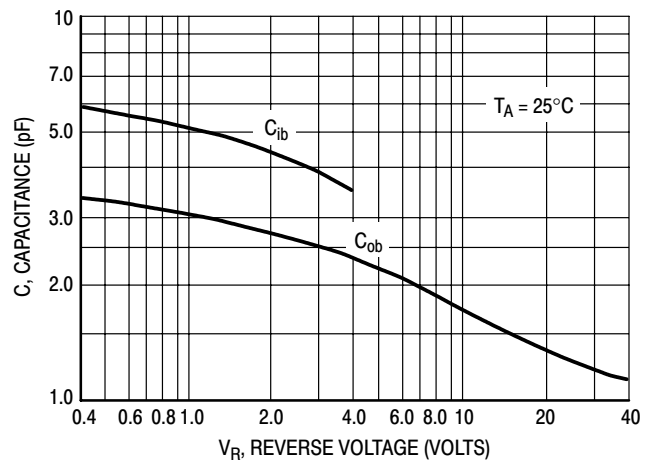


Figure 3. Capacitances

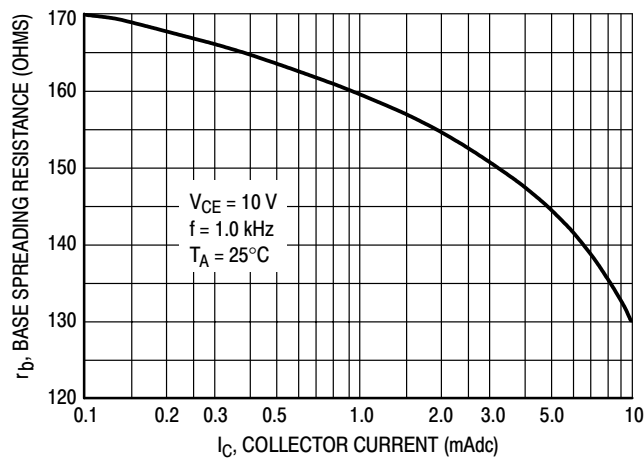
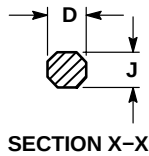
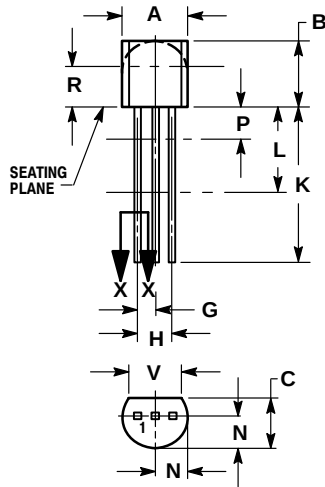


Figure 4. Base Spreading Resistance

BC182, BC182A, BC182B

PACKAGE DIMENSIONS

TO-92
TO-226AA
CASE 29-11
ISSUE AL



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
E	0.045	0.055	1.15	1.39
F	0.095	0.105	2.42	2.66
G	0.015	0.020	0.39	0.50
H	0.500	---	12.70	---
I	0.250	---	6.35	---
J	0.080	0.105	2.04	2.66
K	---	0.100	---	2.54
L	0.115	---	2.93	---
M	0.135	---	3.43	---

STYLE 17:

1. COLLECTOR
2. BASE
3. EMITTER

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