

BC182, BC182B

Amplifier Transistors

NPN Silicon

Features

- These are Pb-Free Devices*

MAXIMUM RATINGS

Rating	Symbol	Value	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	$^\circ\text{C}$

THERMAL CHARACTERISTICS

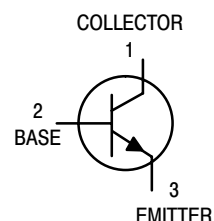
Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	357	$^\circ\text{C/W}$
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	125	$^\circ\text{C/W}$

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

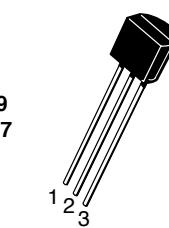


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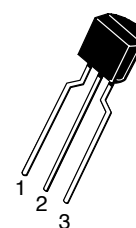
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**TO-92
CASE 29
STYLE 17**

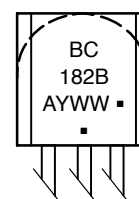


**STRAIGHT LEAD
BULK PACK**



**BENT LEAD
TAPE & REEL
AMMO PACK**

MARKING DIAGRAM



A = Assembly Location
Y = Year
WW = Work Week
▪ = Pb-Free Package
(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
BC182G	TO-92 (Pb-Free)	5000 Units / Bulk
BC182BG	TO-92 (Pb-Free)	5000 Units / Bulk
BC182BRL1G	TO-92 (Pb-Free)	2000 / Tape & Reel

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

†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.

BC182, 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)	BC182	h _{FE}	40	–	–	–
(I _C = 2.0 mA, V _{CE} = 5.0 V)	BC182		120	–	500	
(I _C = 100 mA, V _{CE} = 5.0 V)	BC182B		180	–	500	
	BC182		80	–	–	
Collector–Emitter On Voltage (I _C = 10 mA, I _B = 0.5 mA)		V _{CE(sat)}	–	0.07	0.25	V
(I _C = 100 mA, I _B = 5.0 mA) (Note 1)			–	0.2	0.6	
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)		V _{BE(on)}	–	0.5	–	V
(I _C = 2.0 mA, V _{CE} = 5.0 V)			0.55	0.62	0.7	
(I _C = 100 mA, V _{CE} = 5.0 V) (Note 1)			–	0.83	–	

DYNAMIC CHARACTERISTICS

Current–Gain — Bandwidth Product (I _C = 0.5 mA, V _{CE} = 3.0 V, f = 100 MHz)		f _T	–	100	–	MHz
(I _C = 10 mA, V _{CE} = 5.0 V, f = 100 MHz)			150	200	–	
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	–
	BC182B		240	–	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, BC182B

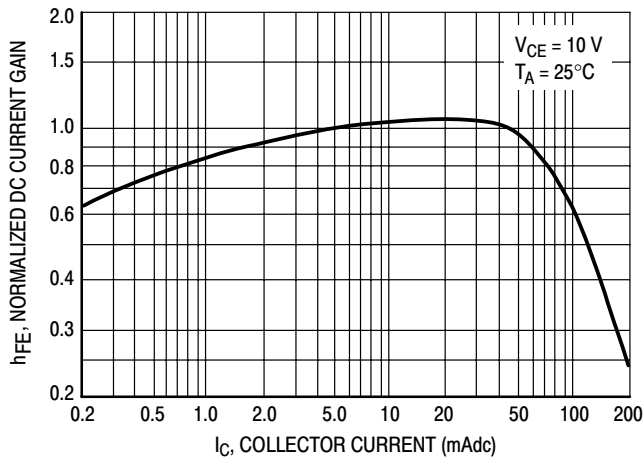


Figure 1. Normalized DC Current Gain

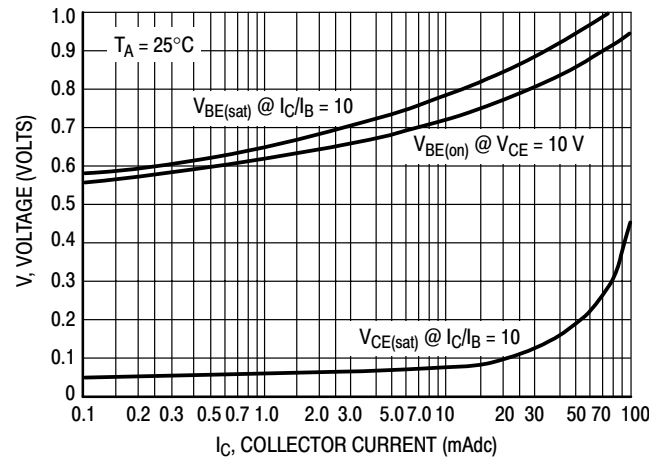


Figure 1. "Saturation" and "On" Voltages

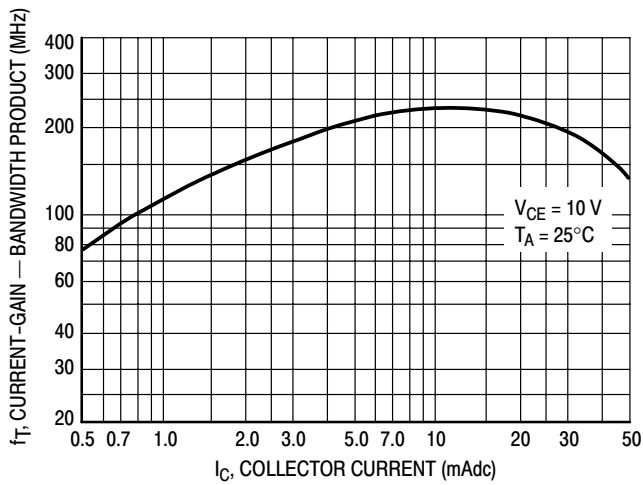


Figure 2. Current-Gain — Bandwidth Product

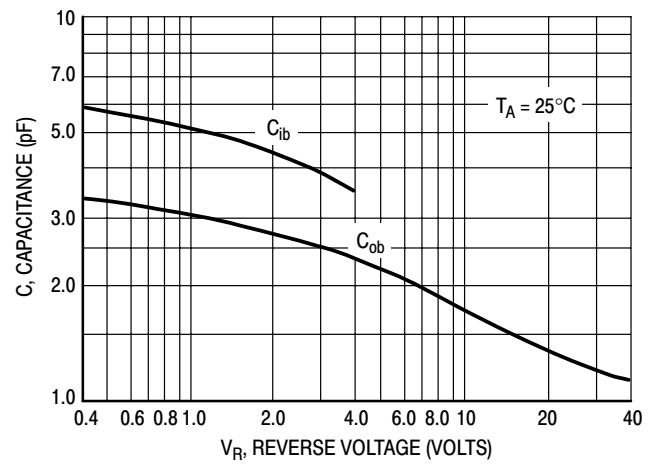


Figure 3. Capacitances

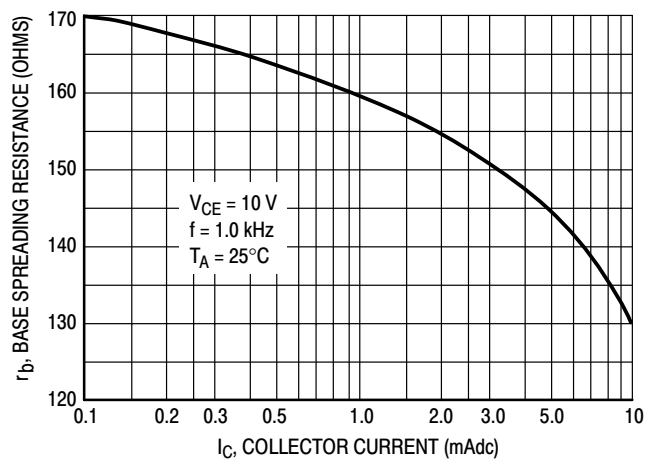
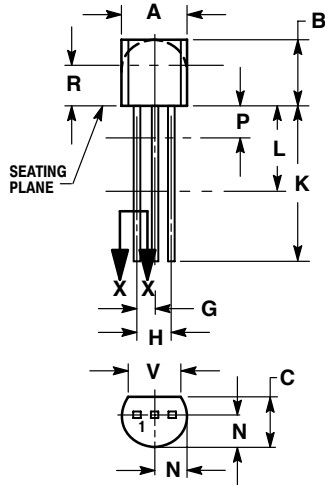


Figure 4. Base Spreading Resistance

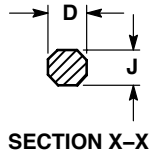
BC182, BC182B

PACKAGE DIMENSIONS

TO-92 (TO-226)
CASE 29-11
ISSUE AM



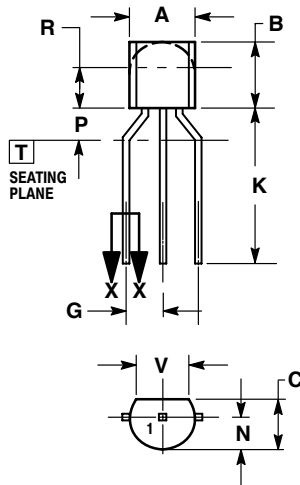
STRAIGHT LEAD
BULK PACK



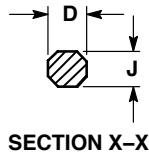
NOTES:

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	---



BENT LEAD
TAPE & REEL
AMMO PACK




NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

DIM	MILLIMETERS	
	MIN	MAX
A	4.45	5.20
B	4.32	5.33
C	3.18	4.19
D	0.40	0.54
G	2.40	2.80
J	0.39	0.50
K	12.70	---
N	2.04	2.66
P	1.50	4.00
R	2.93	---
V	3.43	---

STYLE 17:

1. COLLECTOR
2. BASE
3. EMITTER

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