

NPN - BC368; PNP - BC369

Amplifier Transistors

Voltage and Current are Negative for PNP Transistors

Features

- These are Pb-Free Devices*

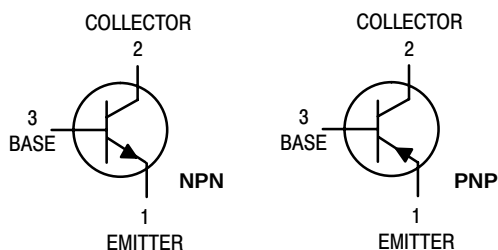
MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector – Emitter Voltage	V_{CEO}	20	Vdc
Collector – Emitter Voltage	V_{CES}	25	Vdc
Emitter – Base Voltage	V_{EBO}	5.0	Vdc
Collector Current – Continuous	I_C	1.0	Adc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	625 5.0	mW mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.5 12	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	$R_{\theta JA}$	200	$^\circ\text{C/W}$
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	83.3	$^\circ\text{C/W}$

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.



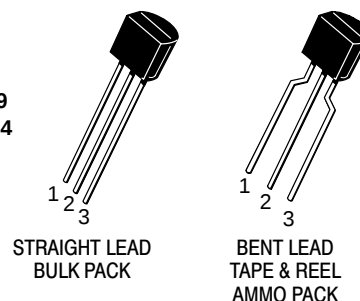
*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.



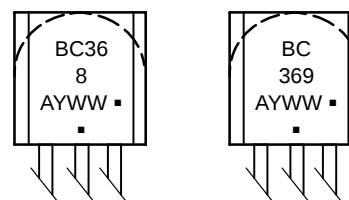
ON Semiconductor®

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TO-92
CASE 29
STYLE 14



MARKING DIAGRAMS



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

ORDERING INFORMATION

Device	Package	Shipping
BC368G	TO-92 (Pb-Free)	5000 Units / Bulk
BC368ZL1G	TO-92 (Pb-Free)	2000 / Ammo Pack
BC369ZL1G	TO-92 (Pb-Free)	2000 / Ammo Pack

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector–Emitter Breakdown Voltage (I _C = 10 mA, I _B = 0)	V _{(BR)CEO}	20	–	–	Vdc
Collector–Base Breakdown Voltage (I _C = 100 µA, I _E = 0)	V _{(BR)CBO}	25	–	–	Vdc
Emitter–Base Breakdown Voltage (I _E = 100 µA, I _C = 0)	V _{(BR)EBO}	5.0	–	–	Vdc
Collector Cutoff Current (V _{CB} = 25 V, I _E = 0) (V _{CB} = 25 V, I _E = 0, T _J = 150°C)	I _{CBO}	– –	– –	10 1.0	µAdc mAdc
Emitter Cutoff Current (V _{EB} = 5.0 V, I _C = 0)	I _{EBO}	–	–	10	µAdc
ON CHARACTERISTICS					
DC Current Gain (V _{CE} = 10 V, I _C = 5.0 mA) (V _{CE} = 1.0 V, I _C = 0.5 A) (V _{CE} = 1.0 V, I _C = 1.0 A) BC368, 369	h _{FE}	50 85 60	– – –	– 375 –	–
Bandwidth Product (I _C = 10 mA, V _{CE} = 5.0 V, f = 20 MHz)	f _T	65	–	–	MHz
Collector–Emitter Saturation Voltage (I _C = 1.0 A, I _B = 100 mA)	V _{CE(sat)}	–	–	0.5	V
Base–Emitter On Voltage (I _C = 1.0 A, V _{CE} = 1.0 V)	V _{BE(on)}	–	–	1.0	V

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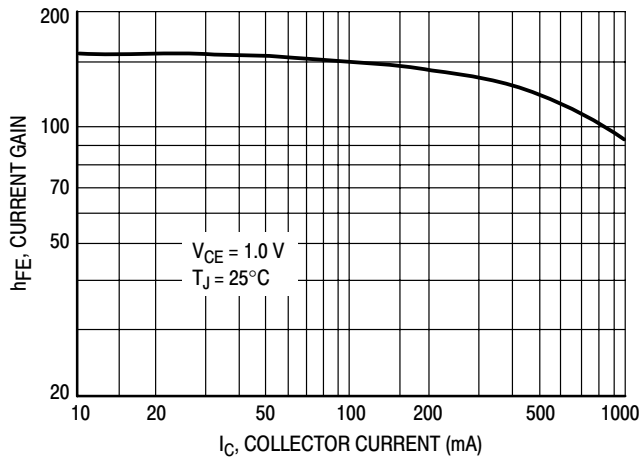


Figure 1. DC Current Gain

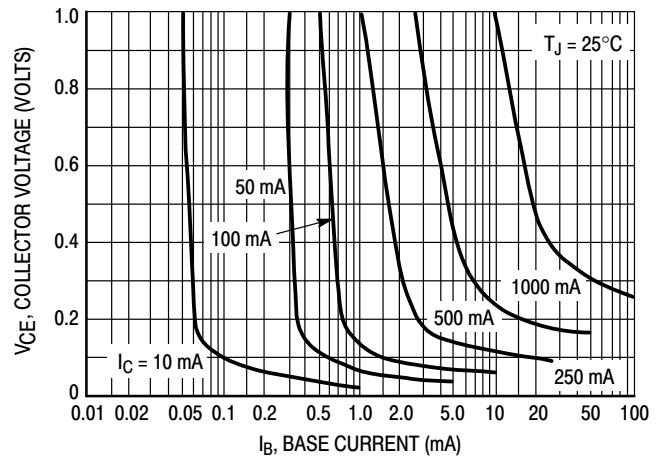


Figure 2. Collector Saturation Region

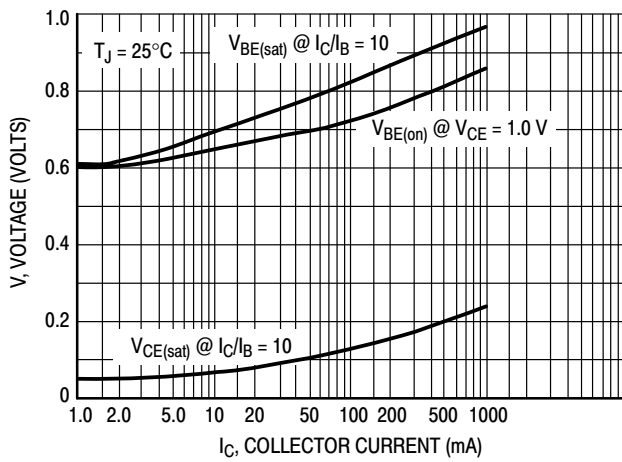


Figure 3. "On" Voltages

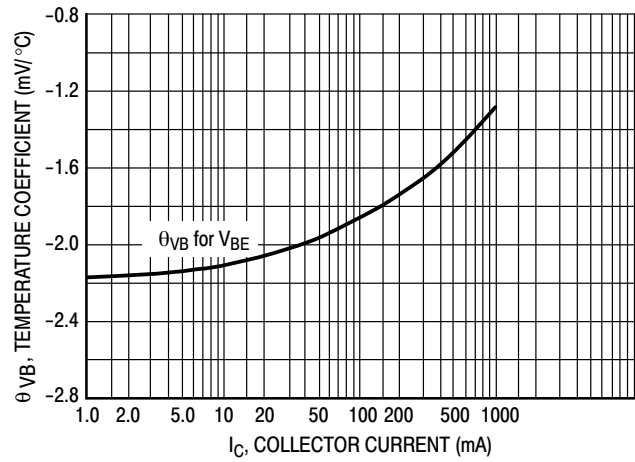


Figure 4. Temperature Coefficient

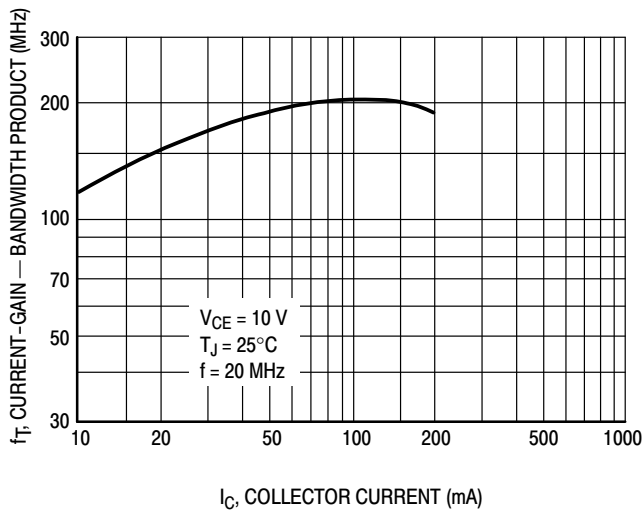


Figure 5. Current-Gain — Bandwidth Product

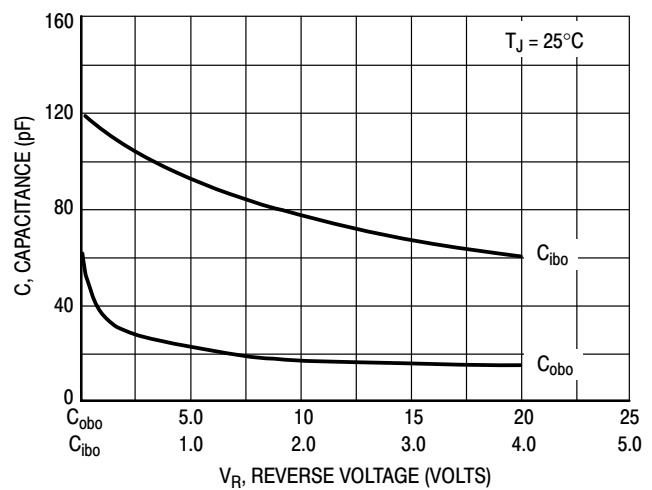
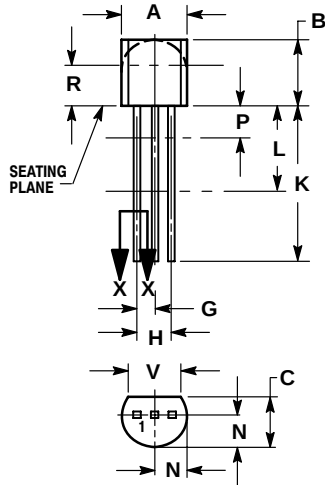


Figure 6. Capacitance

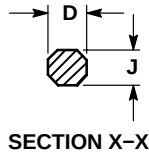
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PACKAGE DIMENSIONS

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



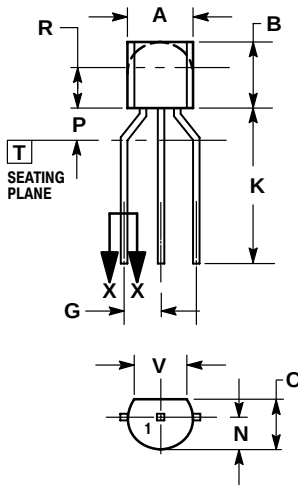
STRAIGHT LEAD
BULK PACK



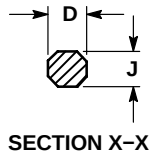
NOTES:

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.
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3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
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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 14:

1. EMITTER
2. COLLECTOR
3. BASE

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