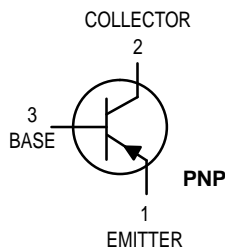
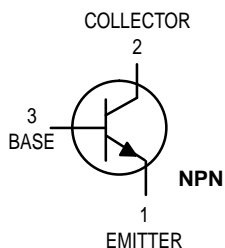


Amplifier Transistors



NPN
BC368, -25
PNP
BC369

Voltage and current are negative
for PNP transistors

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	mW
		5.0	mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.5	Watt
		12	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	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	$^\circ\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

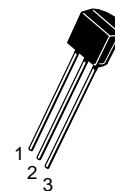
Characteristic	Symbol	Min	Typ	Max	Unit
----------------	--------	-----	-----	-----	------

OFF CHARACTERISTICS

Collector–Emitter Breakdown Voltage ($I_C = 10\text{ mA}, I_B = 0$)	$V_{(BR)CEO}$	20	—	—	Vdc
Collector–Base Breakdown Voltage ($I_C = 100\ \mu\text{A}, I_E = 0$)	$V_{(BR)CBO}$	25	—	—	Vdc
Emitter–Base Breakdown Voltage ($I_E = 100\ \mu\text{A}, I_C = 0$)	$V_{(BR)EBO}$	5.0	—	—	Vdc
Collector Cutoff Current ($V_{CB} = 25\text{ V}, I_E = 0$) ($V_{CB} = 25\text{ V}, I_E = 0, T_J = 150^\circ\text{C}$)	I_{CBO}	—	—	10	μAdc
		—	—	1.0	mAdc
Emitter Cutoff Current ($V_{EB} = 5.0\text{ V}, I_C = 0$)	I_{EBO}	—	—	10	μAdc

ON CHARACTERISTICS

DC Current Gain ($V_{CE} = 10\text{ V}, I_C = 5.0\text{ mA}$) ($V_{CE} = 1.0\text{ V}, I_C = 0.5\text{ A}$)	h_{FE}	50	—	—	—
		85	—	375	
		170	—	375	
($V_{CE} = 1.0\text{ V}, I_C = 1.0\text{ A}$)		60	—	—	
Bandwidth Product ($I_C = 10\text{ mA}, V_{CE} = 5.0\text{ V}, f = 20\text{ MHz}$)	f_T	65	—	—	MHz
Collector–Emitter Saturation Voltage ($I_C = 1.0\text{ A}, I_B = 100\text{ mA}$)	$V_{CE(sat)}$	—	—	0.5	V
Base–Emitter On Voltage ($I_C = 1.0\text{ A}, V_{CE} = 1.0\text{ V}$)	$V_{BE(on)}$	—	—	1.0	V



CASE 29-04, STYLE 14
TO-92 (TO-226AA)

NPN BC368, -25 PNP BC369

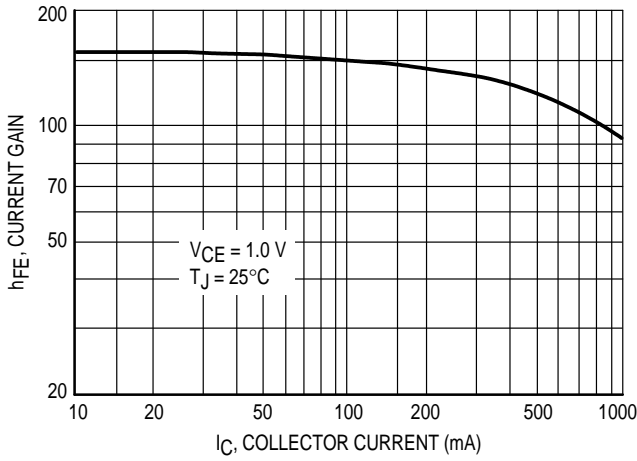


Figure 1. DC Current Gain

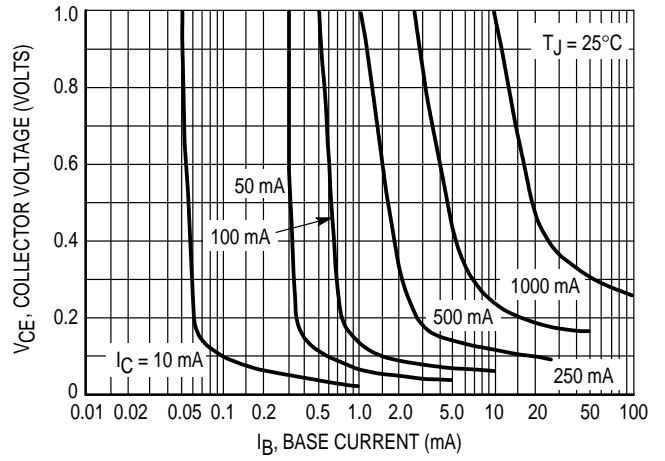


Figure 2. Collector Saturation Region

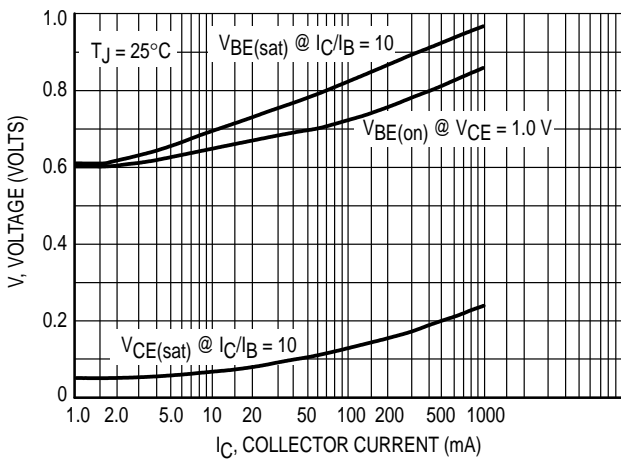


Figure 3. "On" Voltages

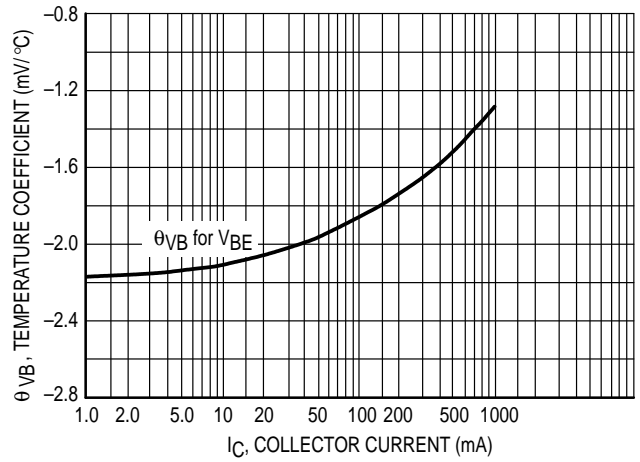


Figure 4. Temperature Coefficient

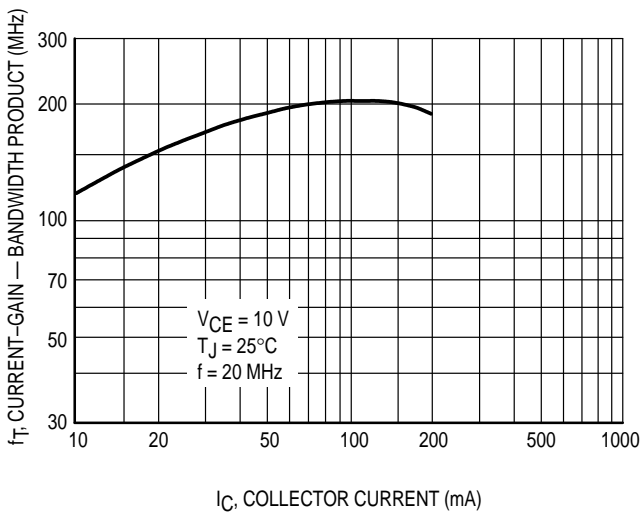


Figure 5. Current-Gain — Bandwidth Product

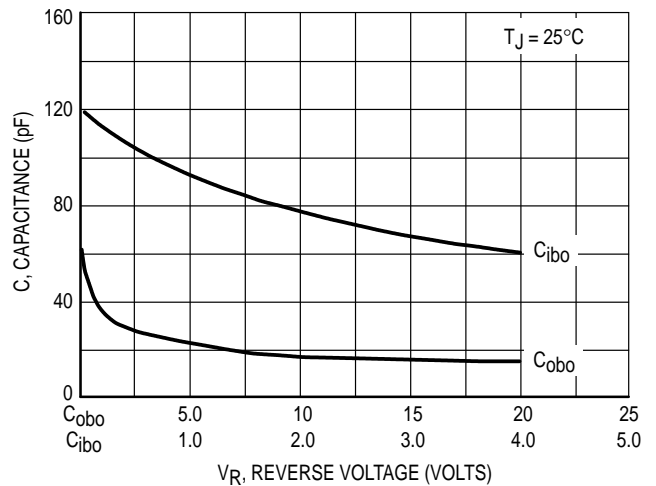
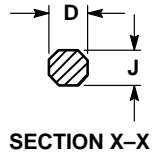
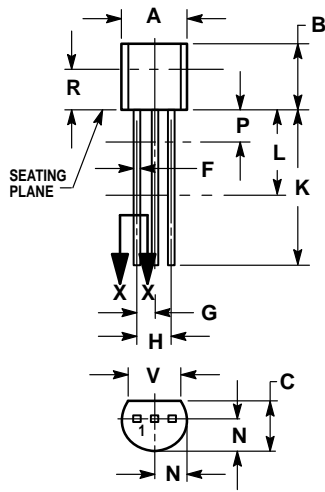


Figure 6. Capacitance

PACKAGE DIMENSIONS



CASE 029-04
(TO-226AA)
ISSUE AD

NOTES:


1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. DIMENSION F APPLIES BETWEEN P AND L. DIMENSION D AND J APPLY BETWEEN L AND K MINIMUM. 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	0.022	0.41	0.55
F	0.016	0.019	0.41	0.48
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	—

STYLE 14:

- PIN 1. EMITTER
2. COLLECTOR
3. BASE

NPN BC368, -25 PNP BC369

Motorola reserves the right to make changes without further notice to any products herein. Motorola makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motorola assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters which may be provided in Motorola data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Motorola does not convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part. Motorola and  registered trademarks of Motorola, Inc. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

Mfax is a trademark of Motorola, Inc.

How to reach us:

USA/EUROPE/Locations Not Listed: Motorola Literature Distribution;
P.O. Box 5405, Denver, Colorado 80217. 1-303-675-2140 or 1-800-441-2447

JAPAN: Motorola Japan Ltd.; SPD, Strategic Planning Office, 141,
4-32-1 Nishi-Gotanda, Shinagawa-ku, Tokyo, Japan. 81-3-5487-8488

Customer Focus Center: 1-800-521-6274

Mfax™: RMFAX0@email.sps.mot.com – TOUCHTONE 1-602-244-6609
Motorola Fax Back System – US & Canada ONLY 1-800-774-1848
– <http://sps.motorola.com/mfax/>

ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd.; Silicon Harbour Centre,
2, Dai King Street, Tai Po Industrial Estate, Tai Po, N.T., Hong Kong.
852-26668334

HOME PAGE: <http://motorola.com/sps/>



MOTOROLA



BC368/D

[Register](#) | [Site Index](#) | [Contact Us](#) | [Home](#) | [China Site](#)

[Press Room](#)
[Sales & Distribution](#)
[About Us](#)
[Quality](#)
[Trade Shows](#)
[Investor Relations](#)
[Employment](#)

Products
[Product Catalog](#)
[New Products](#)
[ON/Cherry Products](#)
[Documentation](#)
[Selector Guide](#)
[On-line Ordering](#)
[Models](#)
[Reliability Data](#)
[PCN](#)
[Samples Search](#)
[Order Status](#)
[Tech Support](#)

Associated Documents Item	Short Desc	Size
Data Sheet	Amplifier Transistor NPN	109.6 k

[Device BC368-25](#)
 Small Signal Plastic Transistor

NPN-PNP

Applications:

- ESD Protection
- Polarity Reversal Protection
- Data Line Protection
- Inductive Load Protection
- Steering Logic

Orderable Parts

Action	Orderable Part	Short Desc.	Package Desc.	Pin Count	Case Outline	Si
N/A	BC368-25ZL1	Tape and Ammunition (TO-226) Box	TO-92	3	29-11	Ar
N/A	BC368ZL1	Tape and	TO-92	3	29-11	Ar

Ammunition (TO-226)
Box

[Register](#) | [Site Index](#) | [Contact Us](#) | [Home](#) | [China Site](#)

[Products](#) | [Press Room](#) | [Sales](#) | [About](#) | [Investor](#) | [Employment](#)

© Semiconductor Components Industries, L.L.C., 1999, 2000. All rights reserved. [Terms of use.](#)