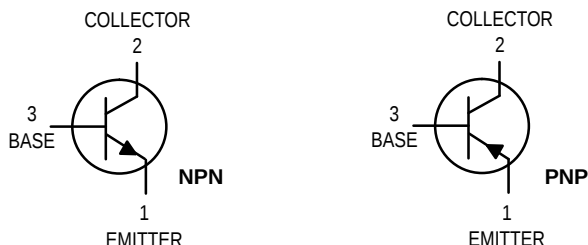


Amplifier Transistors



NPN
BC368
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 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	Watt 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	$^\circ\text{C/W}$

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

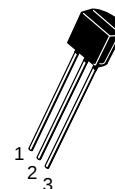
Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

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

ON CHARACTERISTICS

DC Current Gain ($V_{CE} = 10\text{ V}$, $I_C = 5.0\text{ mA}$) ($V_{CE} = 1.0\text{ V}$, $I_C = 0.5\text{ A}$) ($V_{CE} = 1.0\text{ V}$, $I_C = 1.0\text{ A}$)	h_{FE}	50 85 60	— — —	— 375 —	—
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 PNP BC369

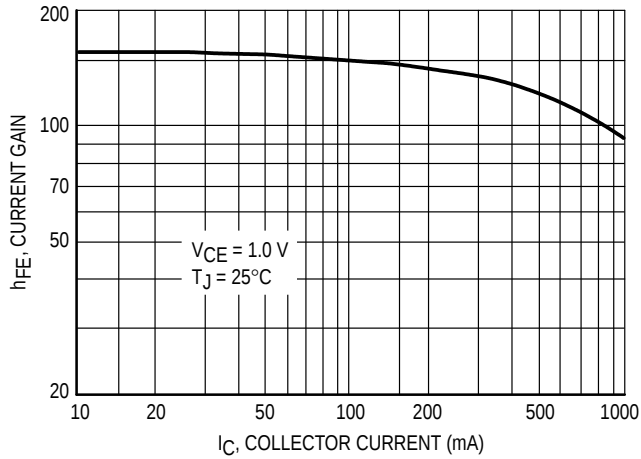


Figure 1. DC Current Gain

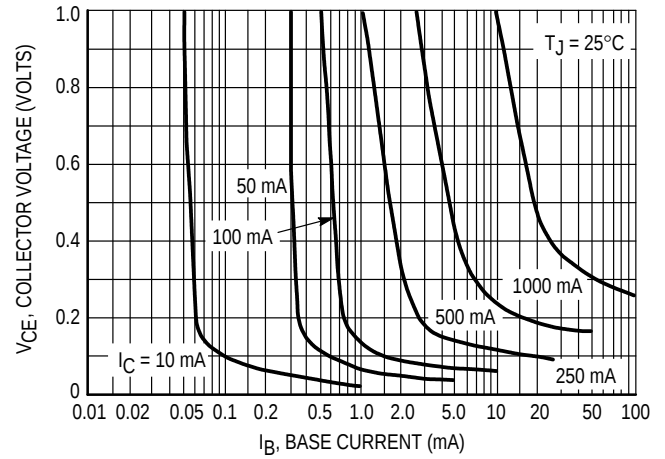


Figure 2. Collector Saturation Region

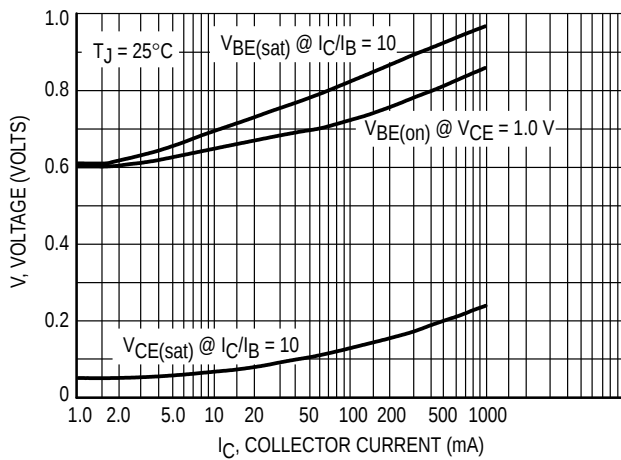


Figure 3. "On" Voltages

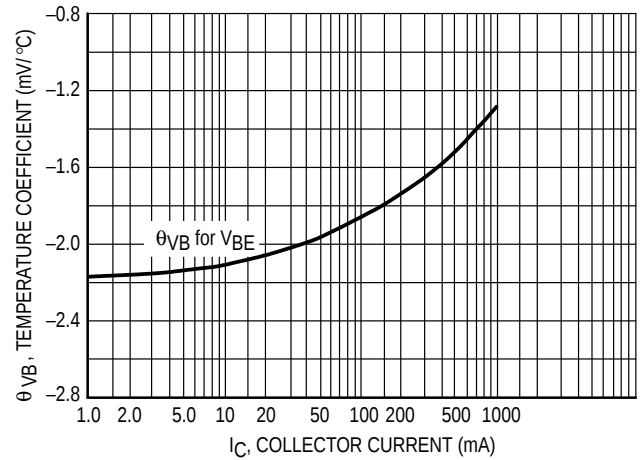


Figure 4. Temperature Coefficient

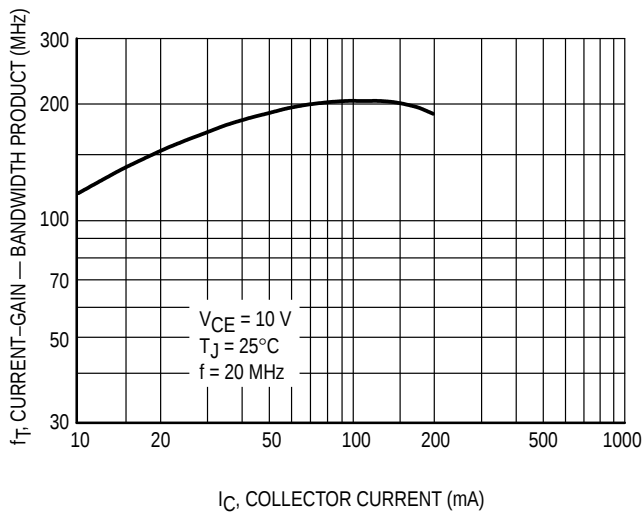


Figure 5. Current-Gain — Bandwidth Product

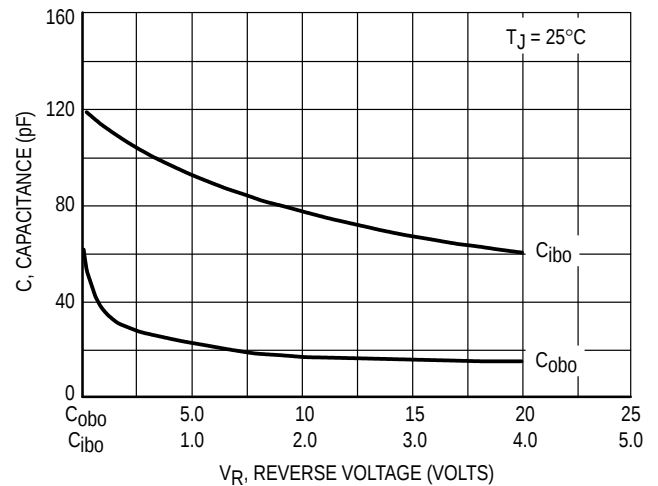
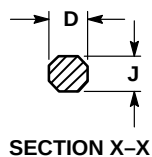
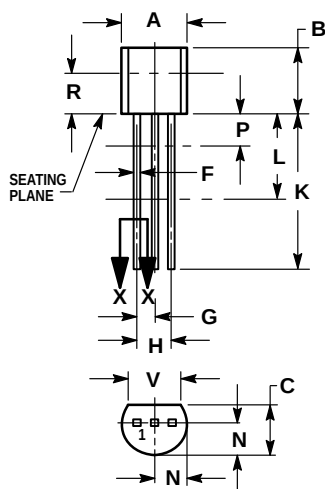


Figure 6. Capacitance

PACKAGE DIMENSIONS



SECTION X-X

**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
- COLLECTOR
- BASE

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MOTOROLA



BC368/D

