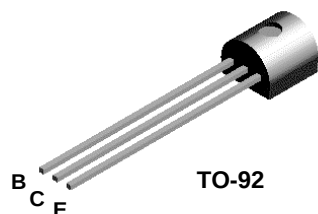


## BC369



### PNP General Purpose Amplifier

This device is designed for general purpose medium power amplifiers and switches requiring collector currents to 1.2 A. Sourced from Process 77.

#### Absolute Maximum Ratings\*

TA = 25°C unless otherwise noted

| Symbol                            | Parameter                                        | Value       | Units |
|-----------------------------------|--------------------------------------------------|-------------|-------|
| V <sub>CEO</sub>                  | Collector-Emitter Voltage                        | 20          | V     |
| V <sub>CES</sub>                  | Collector-Base Voltage                           | 25          | V     |
| V <sub>EBO</sub>                  | Emitter-Base Voltage                             | 5.0         | V     |
| I <sub>C</sub>                    | Collector Current - Continuous                   | 1.5         | A     |
| T <sub>J</sub> , T <sub>stg</sub> | Operating and Storage Junction Temperature Range | -55 to +150 | °C    |

\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

#### NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
- 3) All voltages (V) and currents (A) are negative polarity for PNP transistors.

#### Thermal Characteristics

TA = 25°C unless otherwise noted

| Symbol           | Characteristic                                | Max        | Units       |
|------------------|-----------------------------------------------|------------|-------------|
|                  |                                               | BC369      |             |
| P <sub>D</sub>   | Total Device Dissipation<br>Derate above 25°C | 625<br>5.0 | mW<br>mW/°C |
| R <sub>θJC</sub> | Thermal Resistance, Junction to Case          | 83.3       | °C/W        |
| R <sub>θJA</sub> | Thermal Resistance, Junction to Ambient       | 200        | °C/W        |

PNP General Purpose Amplifier  
(continued)

Electrical Characteristics TA = 25°C unless otherwise noted

| Symbol | Parameter | Test Conditions | Min | Max | Units |
|--------|-----------|-----------------|-----|-----|-------|
|--------|-----------|-----------------|-----|-----|-------|

OFF CHARACTERISTICS

|               |                                     |                                                                                             |     |           |                     |
|---------------|-------------------------------------|---------------------------------------------------------------------------------------------|-----|-----------|---------------------|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C = 10\text{ mA}, I_B = 0$                                                               | 20  |           | V                   |
| $V_{(BR)CES}$ | Collector-Base Breakdown Voltage    | $I_C = 100\text{ }\mu\text{A}, I_E = 0$                                                     | 25  |           | V                   |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage      | $I_E = 10\text{ }\mu\text{A}, I_C = 0$                                                      | 5.0 |           | V                   |
| $I_{CBO}$     | Collector-Cutoff Current            | $V_{CB} = 25\text{ V}, I_E = 0$<br>$V_{CB} = 25\text{ V}, I_E = 0, T_A = 150^\circ\text{C}$ |     | 10<br>1.0 | $\mu\text{A}$<br>mA |
| $I_{EBO}$     | Emitter-Cutoff Current              | $V_{EB} = 5.0\text{ V}, I_C = 0$                                                            |     | 10        | $\mu\text{A}$       |

ON CHARACTERISTICS

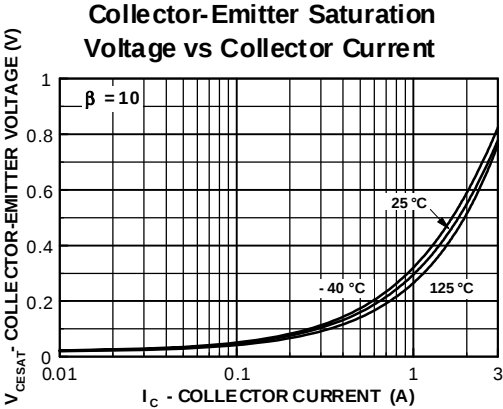
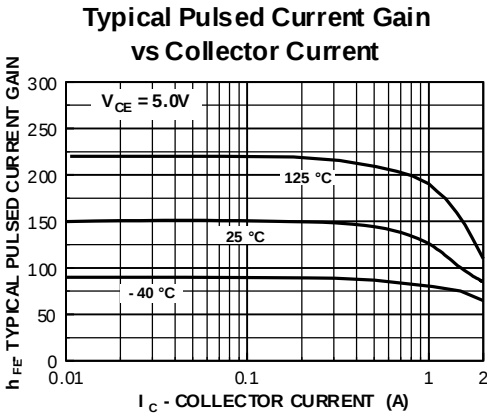
|               |                                      |                                                                                                                                           |                |     |   |
|---------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----|---|
| $h_{FE}$      | DC Current Gain                      | $I_C = 5.0\text{ mA}, V_{CE} = 10\text{ V}$<br>$I_C = 0.5\text{ A}, V_{CE} = 1.0\text{ V}$<br>$I_C = 1.0\text{ A}, V_{CE} = 1.0\text{ V}$ | 50<br>85<br>60 | 375 |   |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 1.0\text{ A}, I_B = 100\text{ mA}$                                                                                                 |                | 0.5 | V |
| $V_{BE(on)}$  | Base-Emitter On Voltage              | $I_C = 1.0\text{ A}, V_{CE} = 1.0\text{ V}$                                                                                               |                | 1.0 | V |

SMALL SIGNAL CHARACTERISTICS

|       |                                  |                                                                     |    |  |     |
|-------|----------------------------------|---------------------------------------------------------------------|----|--|-----|
| $f_T$ | Current Gain - Bandwidth Product | $I_C = 10\text{ mA}, V_{CE} = 5.0\text{ V},$<br>$f = 35\text{ MHz}$ | 45 |  | MHz |
|-------|----------------------------------|---------------------------------------------------------------------|----|--|-----|

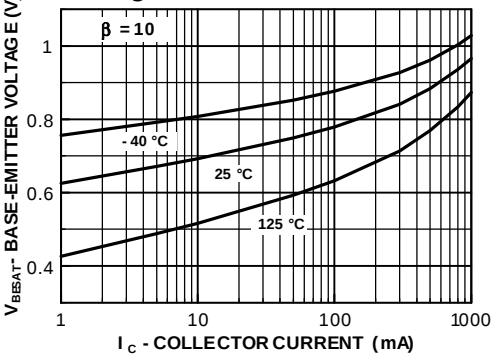
NOTE: All voltages (V) and currents (A) are negative polarity for PNP transistors.

Typical Characteristics

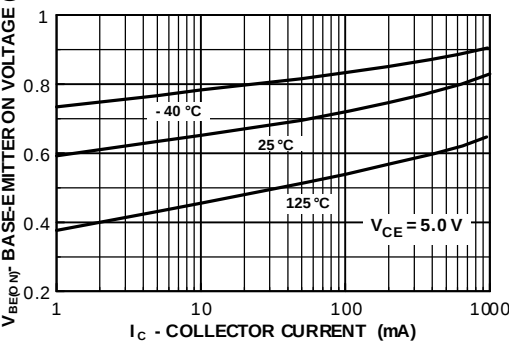


Typical Characteristics (continued)

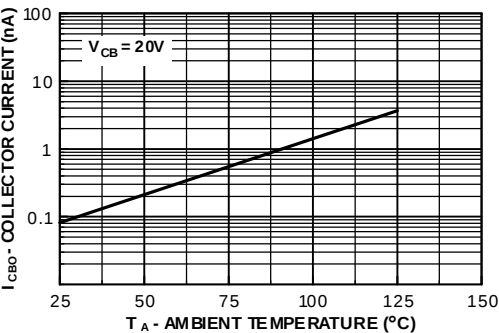
Base-Emitter Saturation  
Voltage vs Collector Current



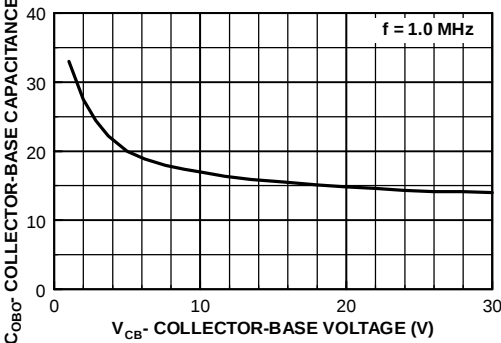
Base-Emitter ON Voltage vs  
Collector Current



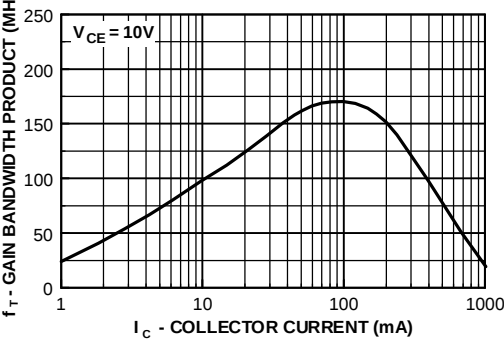
Collector-Cutoff Current  
vs Ambient Temperature



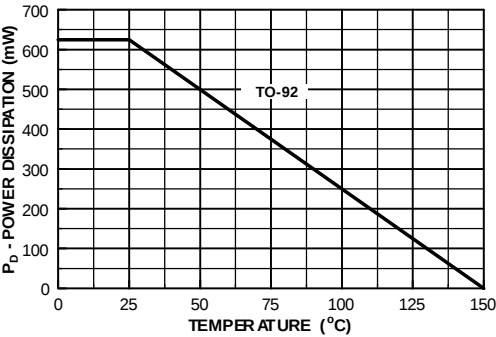
Collector-Base Capacitance  
vs Collector-Base Voltage



Gain Bandwidth Product  
vs Collector Current



Power Dissipation vs  
Ambient Temperature



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