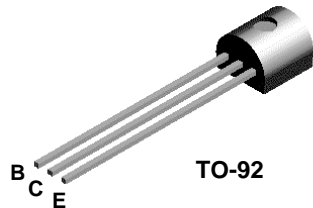


BC368



NPN General Purpose Amplifier

This device is designed for general purpose medium power amplifiers and switches requiring collector currents to 1.5 A. Sourced from Process 37.

Absolute Maximum Ratings* TA = 25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|----------------|--|-------------|-------|
| V_{CEO} | Collector-Emitter Voltage | 20 | V |
| V_{CES} | Collector-Base Voltage | 25 | V |
| V_{EBO} | Emitter-Base Voltage | 5.0 | V |
| I_C | Collector Current - Continuous | 2.0 | A |
| T_J, T_{stg} | 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

Thermal Characteristics TA = 25°C unless otherwise noted

| Symbol | Characteristic | Max | Units |
|-----------------|---|-------|-------|
| | | BC368 | |
| P_D | Total Device Dissipation Derate above 25°C | 625 | mW |
| | | 5.0 | mW/°C |
| $R_{\theta JC}$ | Thermal Resistance, Junction to Case | 83.3 | °C/W |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 200 | °C/W |

NPN General Purpose Amplifier

(continued)

BC368

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 | $V_{CB} = 25 \text{ V}, I_E = 0$ $V_{CB} = 25 \text{ V}, I_E = 0, T_A = 150^\circ\text{C}$ | | 10 1.0 | μA mA |
| I_{EBO} | Emitter-Cutoff Current | $V_{EB} = 5.0 \text{ V}, I_C = 0$ | | 10 | μA |

ON CHARACTERISTICS

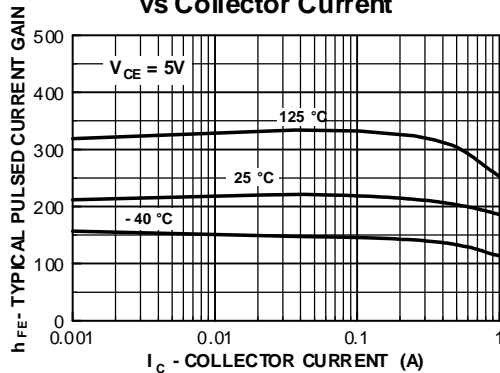
| | | | | | |
|---------------|--------------------------------------|---|----------------|-----|---|
| h_{FE} | DC Current Gain | $I_C = 5.0 \text{ mA}, V_{CE} = 10 \text{ V}$ $I_C = 0.5 \text{ A}, V_{CE} = 1.0 \text{ V}$ $I_C = 1.0 \text{ A}, V_{CE} = 1.0 \text{ V}$ | 50 85 60 | 375 | |
| $V_{CE(sat)}$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

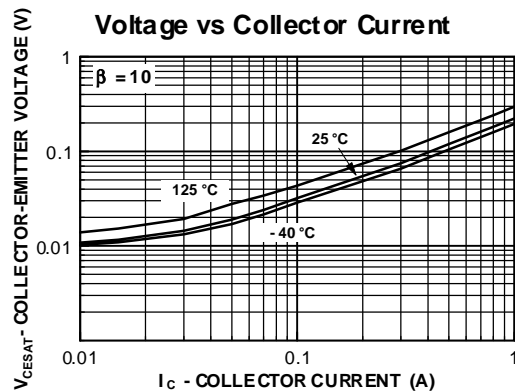
| | | | | | |
|-------|----------------------------------|--|----|--|-----|
| f_T | Current Gain - Bandwidth Product | $I_C = 10 \text{ mA}, V_{CE} = 5.0 \text{ V},$ $f = 35 \text{ MHz}$ | 45 | | MHz |
|-------|----------------------------------|--|----|--|-----|

Typical Characteristics

Typical Pulsed Current Gain vs Collector Current

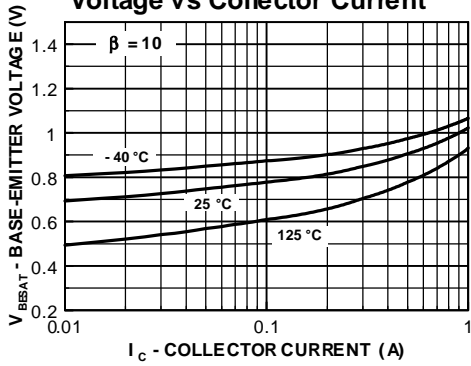


Collector-Emitter Saturation Voltage vs Collector Current

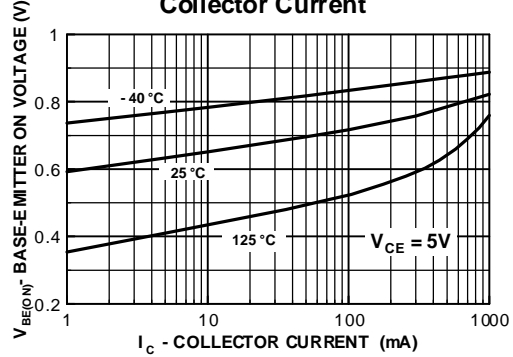


Typical Characteristics (continued)

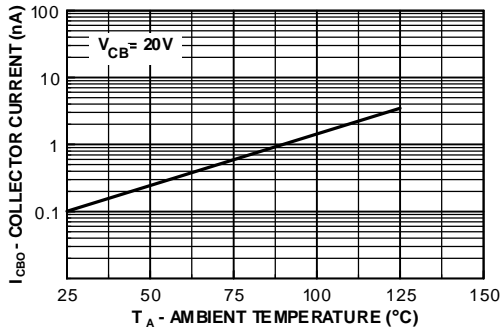
Base-Emitter Saturation Voltage vs Collector Current



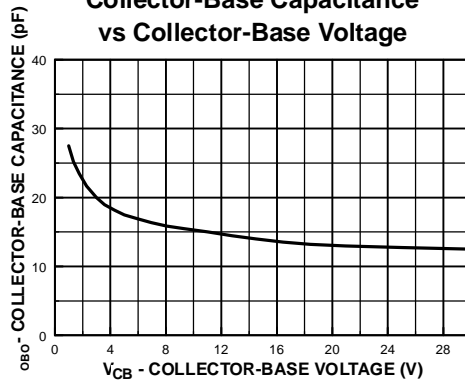
Base-Emitter ON Voltage vs Collector Current



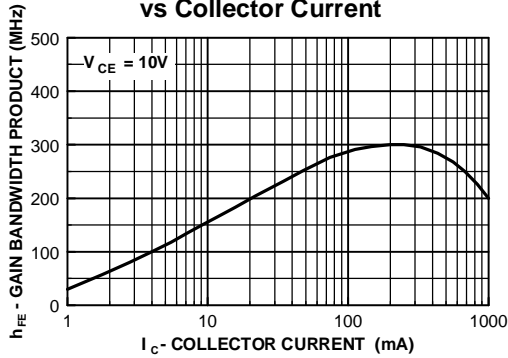
Collector-Cutoff Current vs Ambient Temperature



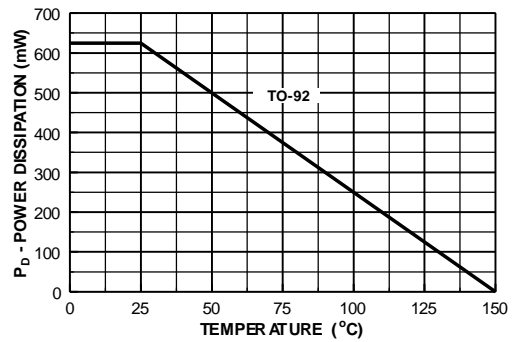
Collector-Base Capacitance vs Collector-Base Voltage



Gain Bandwidth Product vs Collector Current



Power Dissipation vs Ambient Temperature



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PRODUCT STATUS DEFINITIONS

Definition of Terms

| Datasheet Identification | Product Status | Definition |
|--------------------------|------------------------|---|
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