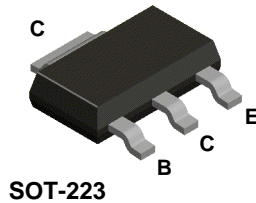


NZT751



PNP Current Driver Transistor

This device is designed for power amplifier, regulator and switching circuits where speed is important. Sourced from Process 5P.

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|-----------------------------------|--|-------------|-------|
| V _{CEO} | Collector-Emitter Voltage | 60 | V |
| V _{CBO} | Collector-Base Voltage | 80 | V |
| V _{EBO} | Emitter-Base Voltage | 5.0 | V |
| I _C | Collector Current - Continuous | 4.0 | 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 |
|------------------|---|---------|-------|
| | | *NZT751 | |
| P _D | Total Device Dissipation | 1.2 | W |
| | Derate above 25°C | 9.7 | mW/°C |
| R _{θJA} | Thermal Resistance, Junction to Ambient | 103 | °C/W |

* Device mounted on FR-4 PCB 36 mm X 18 mm X 1.5 mm; mounting pad for the collector lead min. 6 cm².

PNP Current Driver Transistor

(continued)

NZT751

Electrical Characteristics

TA = 25°C unless otherwise noted

| Symbol | Parameter | Test Conditions | Min | Max | Units |
|----------------------------|--------------------------------------|---|-----|-----|---------------|
| OFF CHARACTERISTICS | | | | | |
| $V_{(BR)CEO}$ | Collector-Emitter Sustaining Voltage | $I_C = 10 \text{ mA}, I_B = 0$ | 60 | | V |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage | $I_C = 100 \text{ } \mu\text{A}, I_E = 0$ | 80 | | 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 | $V_{CB} = 80 \text{ V}, I_E = 0$ | | 100 | nA |
| I_{EBO} | Emitter-Cutoff Current | $V_{EB} = 4.0 \text{ V}, I_C = 0$ | | 0.1 | μA |

ON CHARACTERISTICS*

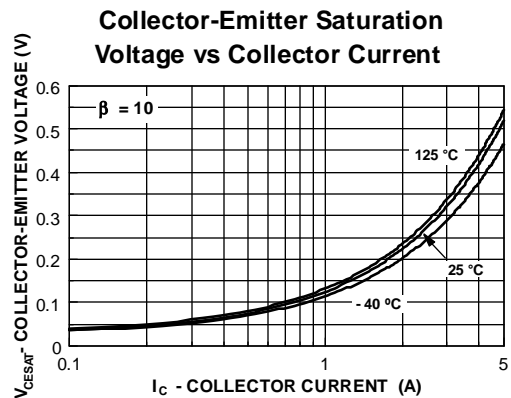
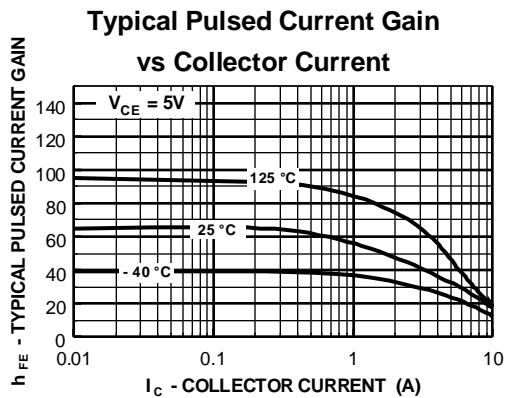
| | | | | | |
|---------------|--------------------------------------|---|----------------------|------------|--------|
| h_{FE} | DC Current Gain | $I_C = 50 \text{ mA}, V_{CE} = 2.0 \text{ V}$ $I_C = 500 \text{ mA}, V_{CE} = 2.0 \text{ V}$ $I_C = 1.0 \text{ A}, V_{CE} = 2.0 \text{ V}$ $I_C = 2.0 \text{ A}, V_{CE} = 2.0 \text{ V}$ | 75 75 75 40 | | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 1.0 \text{ A}, I_B = 100 \text{ mA}$ $I_C = 2.0 \text{ A}, I_B = 200 \text{ mA}$ | | 0.3 0.5 | V V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C = 1.0 \text{ A}, I_B = 100 \text{ mA}$ | | 1.2 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C = 1.0 \text{ A}, V_{CE} = 2.0 \text{ V}$ | | 1.0 | V |

SMALL SIGNAL CHARACTERISTICS

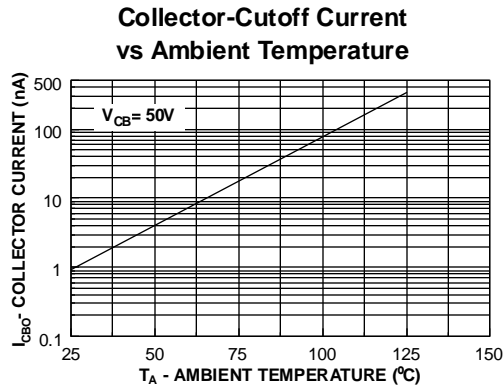
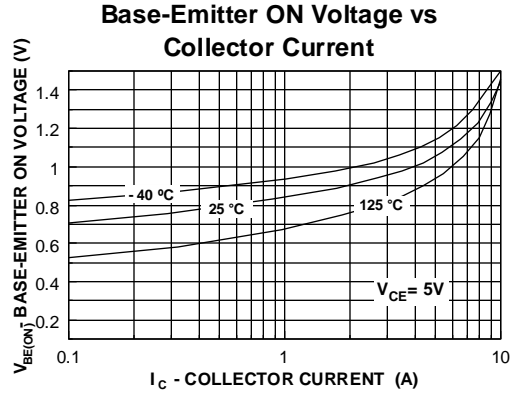
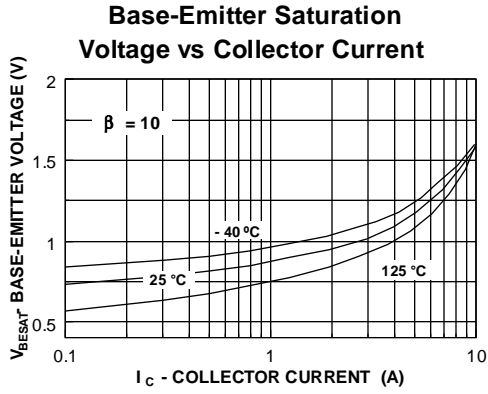
| | | | | | |
|-------|----------------------------------|---|----|--|-----|
| f_T | Current Gain - Bandwidth Product | $I_C = 50 \text{ mA}, V_{CE} = 5.0 \text{ V},$ $f = 100 \text{ MHz}$ | 75 | | MHz |
|-------|----------------------------------|---|----|--|-----|

*Pulse Test: Pulse Width $\leq 300 \text{ } \mu\text{s}$, Duty Cycle $\leq 2.0\%$

DC Typical Characteristics



DC Typical Characteristics (continued)



AC Typical Characteristics

