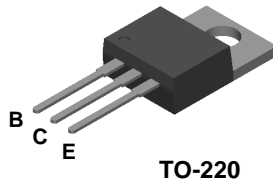
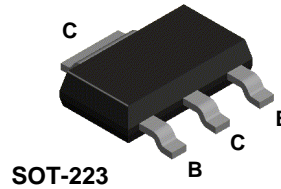


**D45H8**



**NZT45H8**



**PNP Power Amplifier**

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

**Absolute Maximum Ratings\***

TA = 25°C unless otherwise noted

| Symbol                            | Parameter  | Value       | Units |
|-----------------------------------|--|-------------|-------|
| V <sub>CEO</sub>                  | Collector-Emitter Voltage                        | 60          | V     |
| I <sub>C</sub>                    | Collector Current - Continuous                   | 8.0         | 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.

**Thermal Characteristics**

TA = 25°C unless otherwise noted

| Symbol           | Characteristic                          | Max   |          | Units |
|------------------|---|-------|----------|-------|
|                  |   | D45H8 | *NZT45H8 |       |
| P <sub>D</sub>   | Total Device Dissipation                | 60    | 1.5      | W     |
|                  | Derate above 25°C                       | 480   | 12       | mW/°C |
| R <sub>θJC</sub> | Thermal Resistance, Junction to Case    | 2.1   |          | °C/W  |
| R <sub>θJA</sub> | Thermal Resistance, Junction to Ambient | 62.5  | 83.3     | °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 cm<sup>2</sup>.

# PNP Power Amplifier

(continued)

D45H8 / NZT45H8

## Electrical Characteristics

TA = 25°C unless otherwise noted

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

### OFF CHARACTERISTICS

|               |                                     |                                   |    |     |               |
|---------------|-------------------------------------|-----------------------------------|----|-----|---------------|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C = 100 \text{ mA}, I_B = 0$   | 60 |     | V             |
| $I_{CBO}$     | Collector-Cutoff Current            | $V_{CB} = 60 \text{ V}, I_E = 0$  |    | 10  | $\mu\text{A}$ |
| $I_{EBO}$     | Emitter-Cutoff Current              | $V_{EB} = 5.0 \text{ V}, I_C = 0$ |    | 100 | $\mu\text{A}$ |

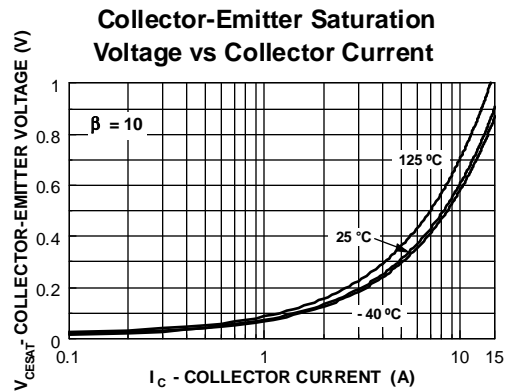
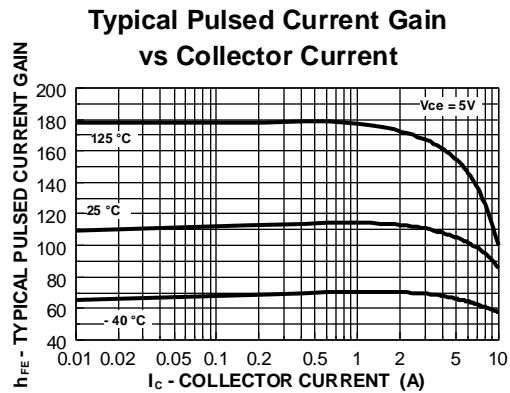
### ON CHARACTERISTICS

|               |                                      |  |          |      |   |
|---------------|--------------------------------------|--|----------|------|---|
| $h_{FE}$      | DC Current Gain                      | $I_C = 2.0 \text{ A}, V_{CE} = 1.0 \text{ V}$<br>$I_C = 4.0 \text{ A}, V_{CE} = 1.0 \text{ V}$ | 60<br>40 |      |   |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 8.0 \text{ A}, I_B = 0.4 \text{ A}$   |          | 1.0  | V |
| $V_{BE(sat)}$ | Base-Emitter On Voltage              | $I_C = 8.0 \text{ A}, I_B = 0.8 \text{ A}$   |          | 1.5  | V |
| $V_{BE(on)}$  | Base-Emitter On Voltage              | $I_C = 10 \text{ mA}, V_{CE} = 2.0 \text{ V}$  | 0.54     | 0.65 | V |

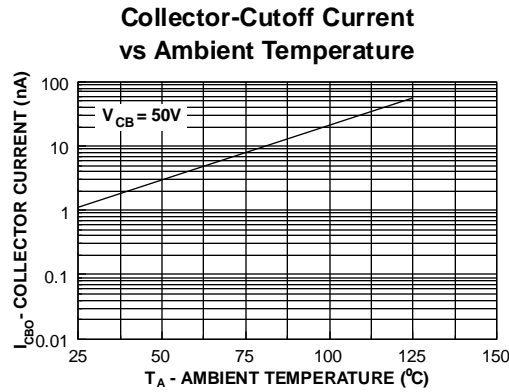
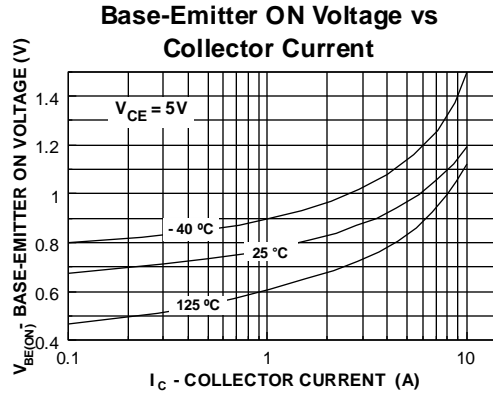
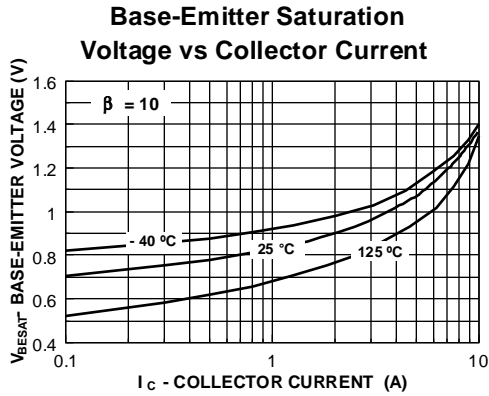
### SMALL SIGNAL CHARACTERISTICS

|       |                                  |   |    |  |     |
|-------|----------------------------------|---|----|--|-----|
| $f_T$ | Current Gain - Bandwidth Product | $I_C = 500 \text{ mA}, V_{CE} = 10 \text{ V}$ | 40 |  | MHz |
|-------|----------------------------------|---|----|--|-----|

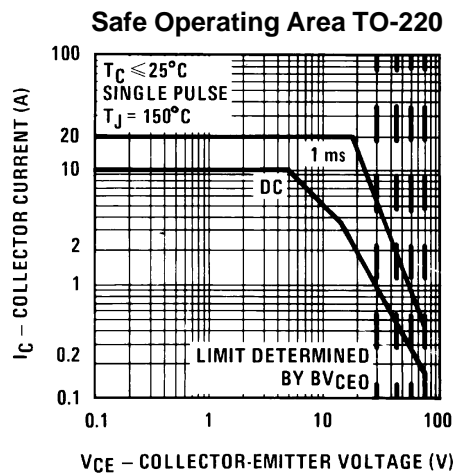
## DC Typical Characteristics



DC Typical Characteristics (continued)



AC Typical Characteristics



AC Typical Characteristics (continued)

