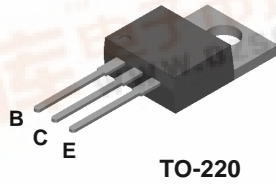


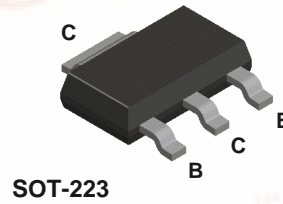


Discrete POWER & Signal Technologies

### D44H8



### NZT44H8



## NPN Power Amplifier

This device is designed for power amplifier, regulator and switching circuits where speed is important. Sourced from Process 4Q.

### 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
		D44H8	*NZT44H8	
P <sub>D</sub>	Total Device Dissipation Derate above 25°C	60	1.5	W
		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>.



## NPN Power Amplifier

(continued)

### Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
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#### 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

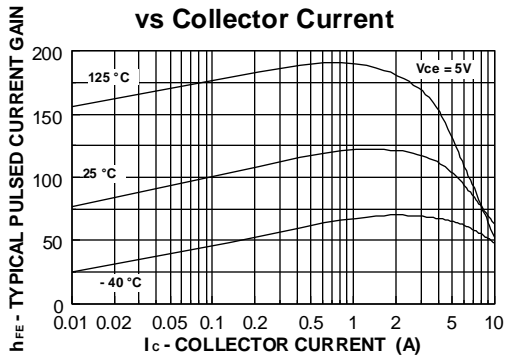
$h_{FE}$	DC Current Gain	$I_C = 2.0\text{ A}, V_{CE} = 1.0\text{ V}$ $I_C = 4.0\text{ A}, V_{CE} = 1.0\text{ V}$	60 40		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 8.0\text{ A}, I_B = 0.4\text{ A}$		1.0	V
$V_{BE(sat)}$	Base-Emitter On Voltage	$I_C = 8.0\text{ A}, I_B = 0.8\text{ A}$		1.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 10\text{ mA}, V_{CE} = 2.0\text{ V}$	0.52	0.65	V

#### SMALL SIGNAL CHARACTERISTICS

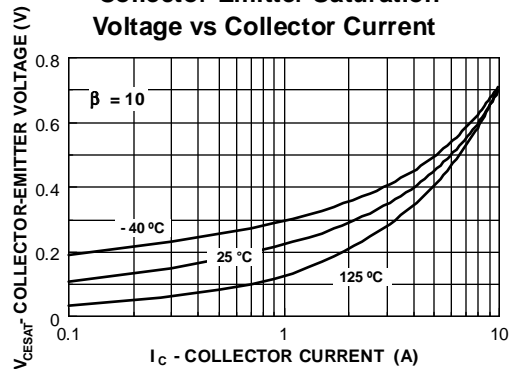
$f_T$	Current Gain - Bandwidth Product	$I_C = 500\text{ mA}, V_{CE} = 10\text{ V},$	50		MHz
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### DC Typical Characteristics

**Typical Pulsed Current Gain vs Collector Current**

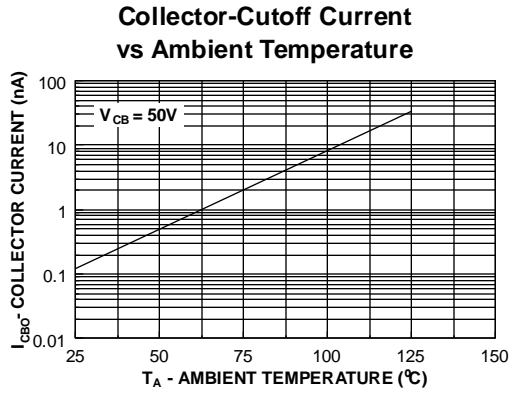
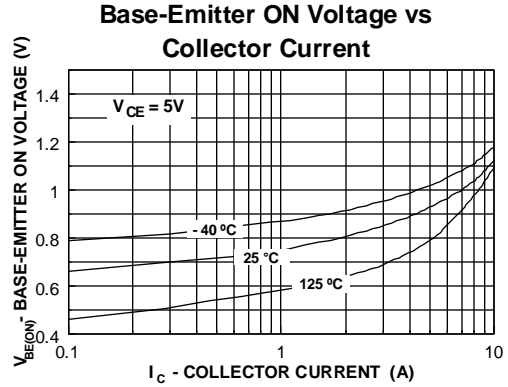
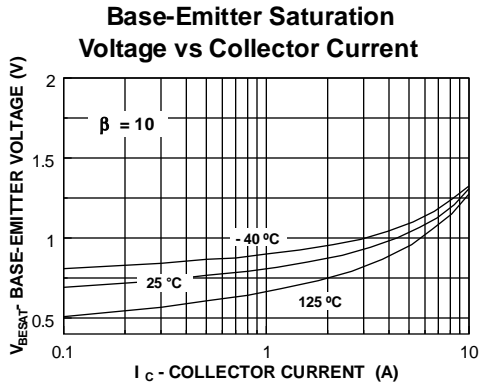


**Collector-Emitter Saturation Voltage vs Collector Current**

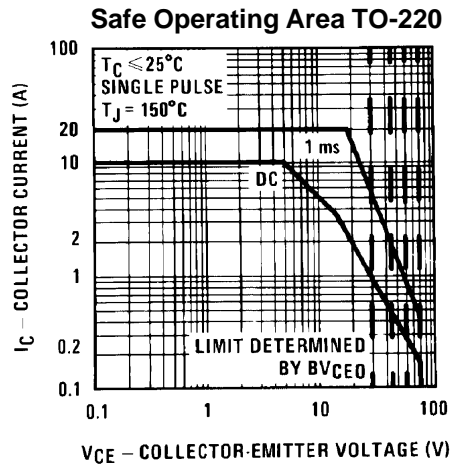
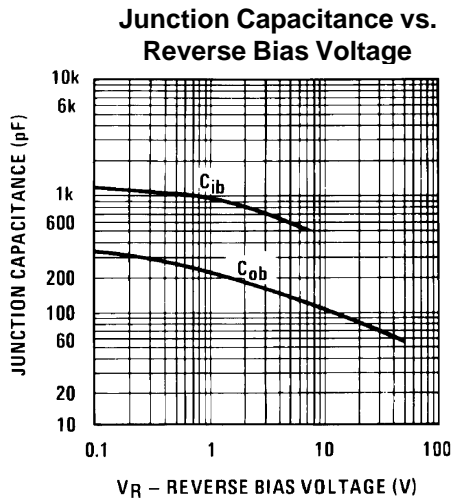


**NPN Power Amplifier**  
(continued)

**DC Typical Characteristics** (continued)



**AC Typical Characteristics**



**NPN Power Amplifier**  
(continued)

**AC Typical Characteristics** (continued)

