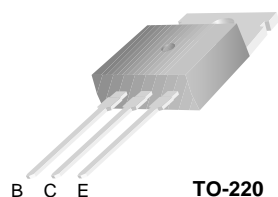


D44H8 / NZT44H8 / D44H11

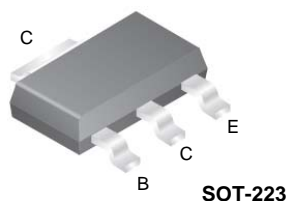
NPN Power Amplifier

Features

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



D44H8 / D44H11



NZT44H8

Absolute Maximum Ratings* $T_A=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value		Units
		D44H8 NZT44H8	D44H11	
V_{CE0}	Collector-Emitter Voltage	60	80	V
I_C	Collector Current - Continuous	8.0	10.0	A
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150		$^\circ\text{C}$

*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°C .
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Thermal Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Max.		Units
		D44H8 D44H11	*NZT44H8	
P_D	Total Device Dissipation Derate above 25°C	60 480	1.5 12	W $\text{mW}/^\circ\text{C}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	2.1		$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	62.5	83.3	$^\circ\text{C}/\text{W}$

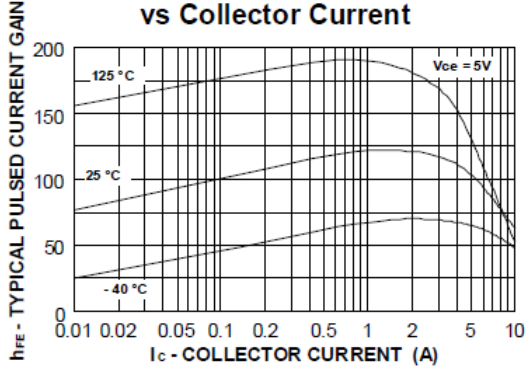
*Device mounted on FR-4 PCB 36mm X 18mm X 1.5mm; mounting pad for the collector lead min. 6cm^2 .

Electrical Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

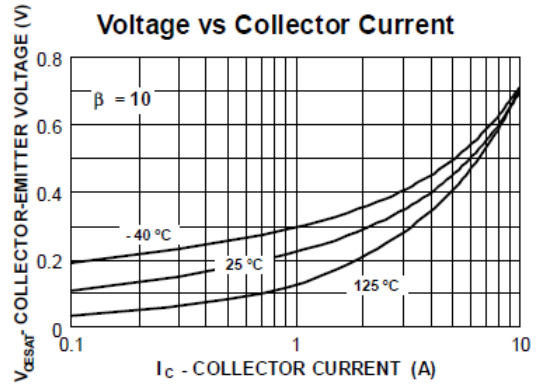
Symbol	Parameter	Test Condition	Min.	Max.	Units
Off Characteristics					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	D44H8 / NZT44H8 D44H11 $I_C = 100\text{mA}, I_B = 0$	60 80		V
I_{CBO}	Collector-Cutoff Current	D44H8 / NZT44H8 D44H11 $V_{CB} = 60\text{V}, I_E = 0$ $V_{CB} = 80\text{V}, I_E = 0$		10	μA
I_{EBO}	Emitter-Cutoff Current	$V_{EB} = 5\text{V}, I_C = 0$		100	μA
On Characteristics					
h_{FE}	DC Current Gain	$V_{CE} = 1\text{V}, I_C = 2\text{A}$ $V_{CE} = 1\text{V}, I_C = 4\text{A}$	60 40		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 8\text{A}, I_B = 0.4\text{A}$		1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 8\text{A}, I_B = 0.8\text{A}$		1.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = 2\text{V}, I_C = 10\text{mA}$	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

DC Typical Characteristics

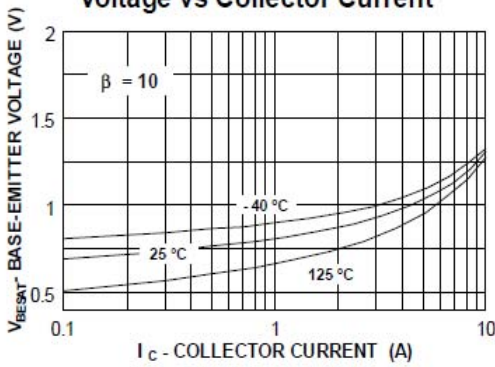
Typical Pulsed Current Gain vs Collector Current



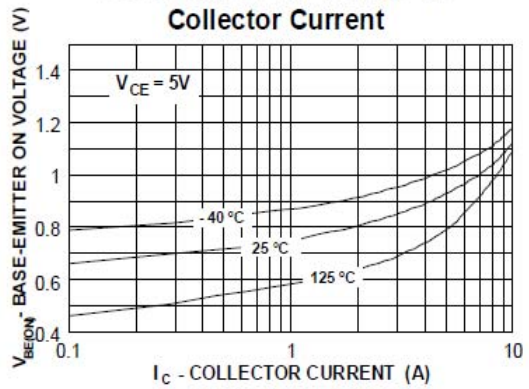
Collector-Emitter Saturation Voltage vs Collector Current



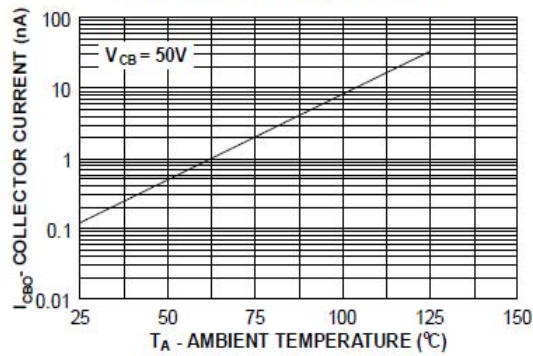
Base-Emitter Saturation Voltage vs Collector Current



Base-Emitter ON Voltage vs Collector Current

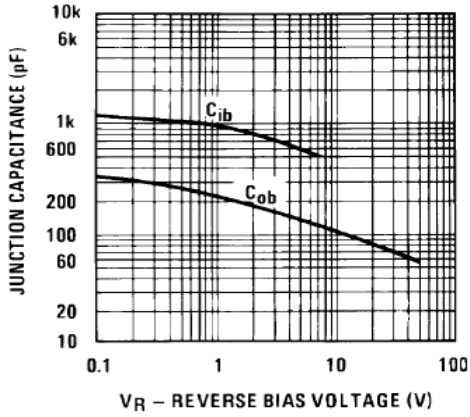


Collector-Cutoff Current vs Ambient Temperature

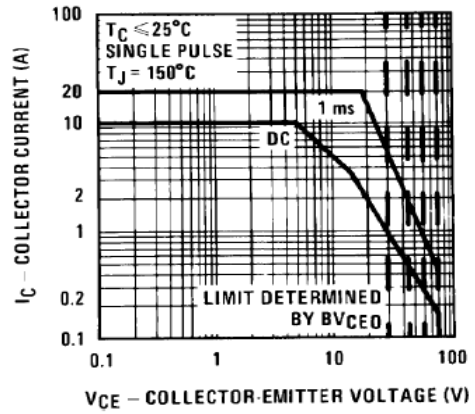


AC Typical Characteristics

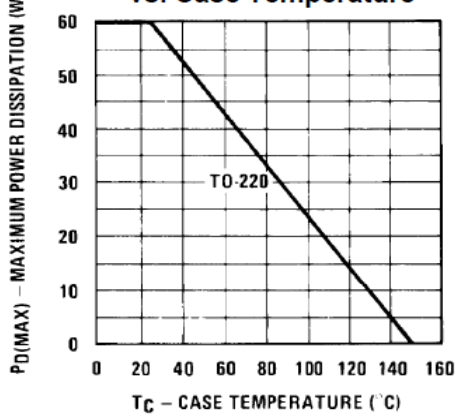
Junction Capacitance vs. Reverse Bias Voltage



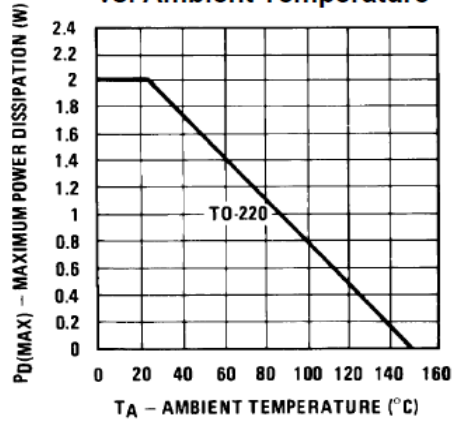
Safe Operating Area TO-220



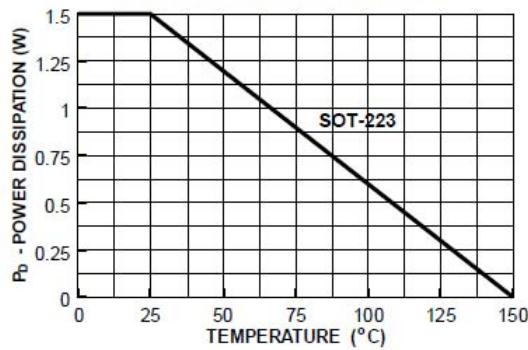
Maximum Power Dissipation vs. Case Temperature

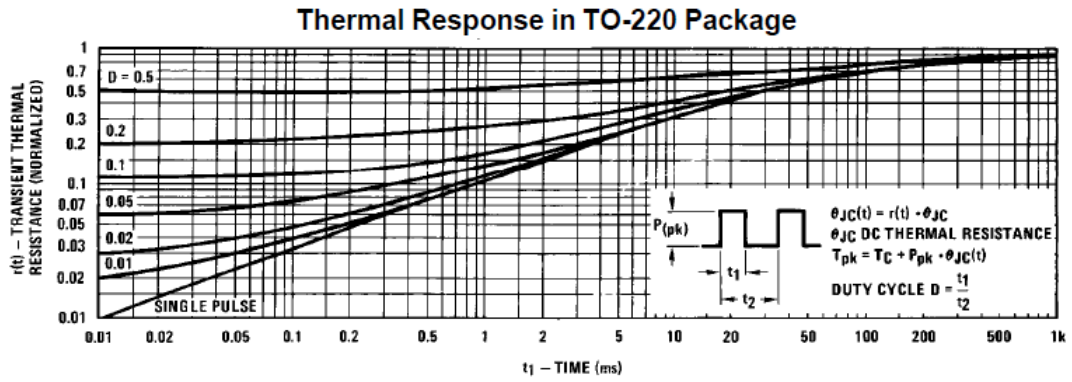


Maximum Power Dissipation vs. Ambient Temperature



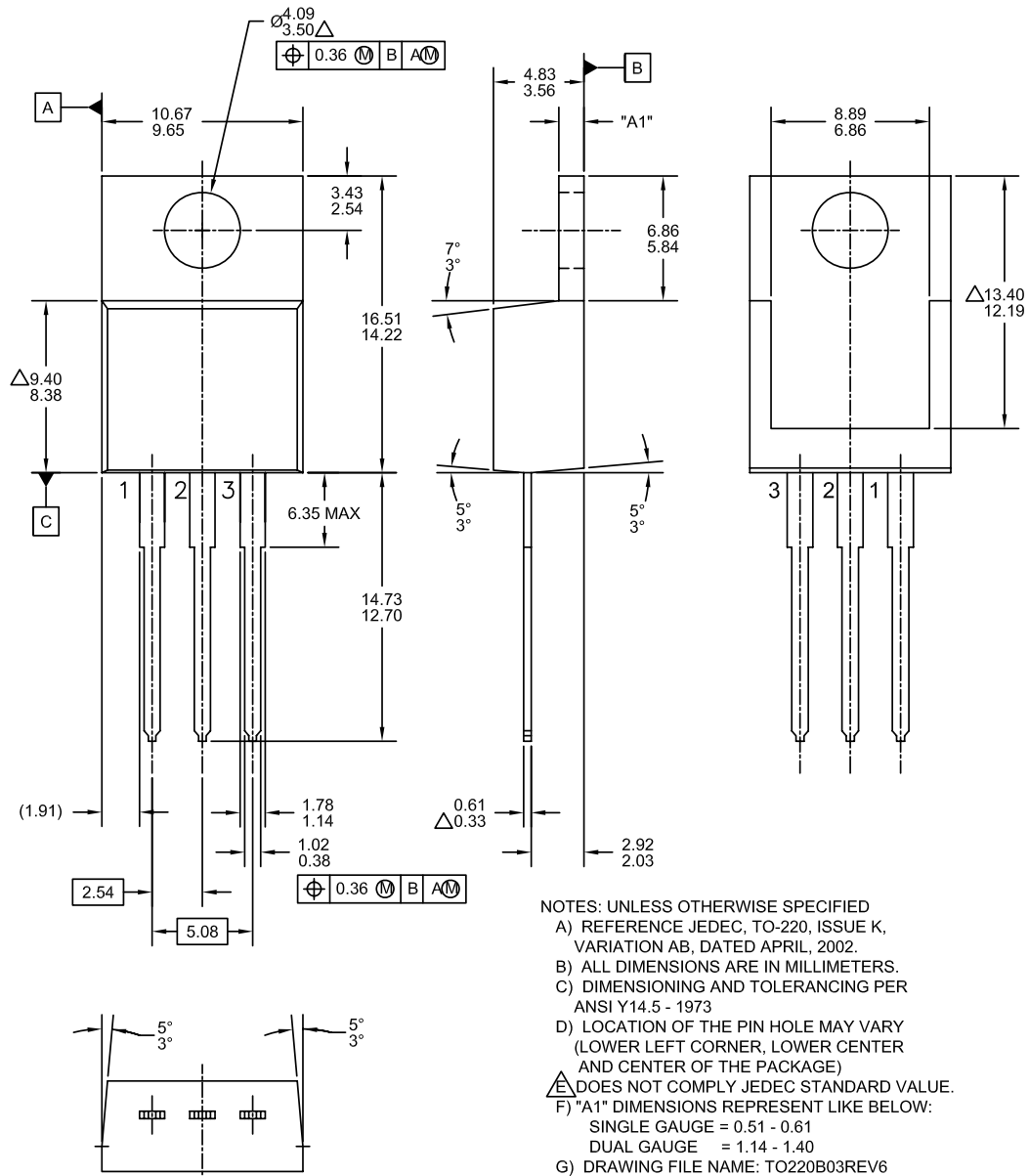
POWER DISSIPATION vs AMBIENT TEMPERATURE





Physical Dimensions

TO-220

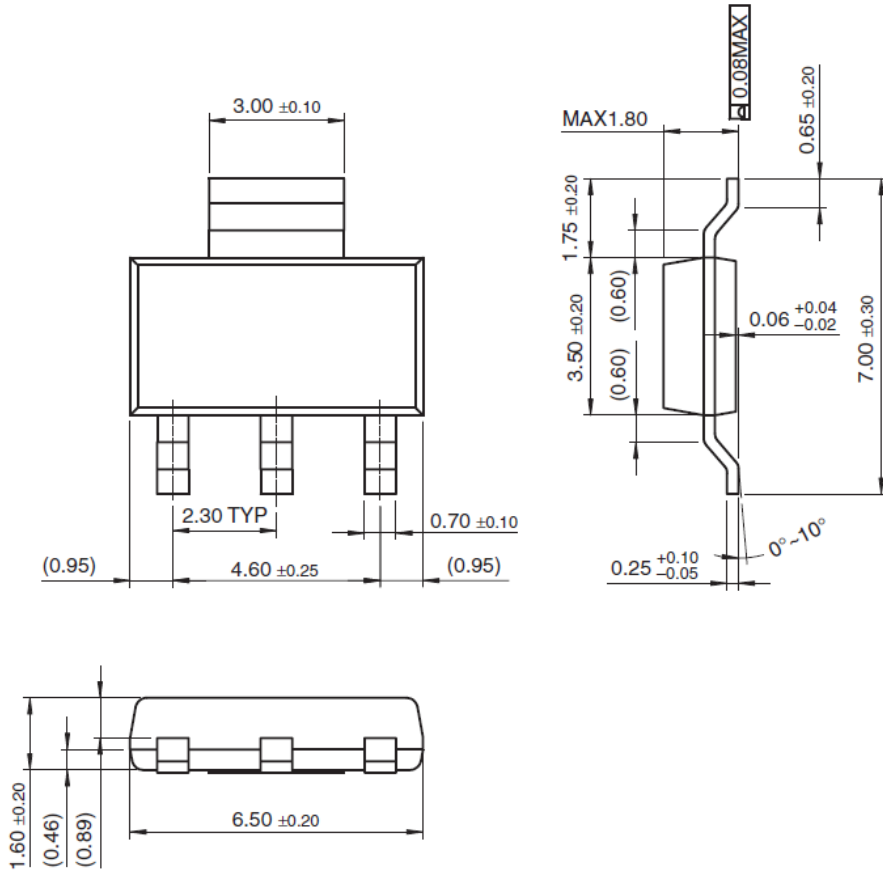


- NOTES: UNLESS OTHERWISE SPECIFIED
- A) REFERENCE JEDEC, TO-220, ISSUE K, VARIATION AB, DATED APRIL, 2002.
 - B) ALL DIMENSIONS ARE IN MILLIMETERS.
 - C) DIMENSIONING AND TOLERANCING PER ANSI Y14.5 - 1973
 - D) LOCATION OF THE PIN HOLE MAY VARY (LOWER LEFT CORNER, LOWER CENTER AND CENTER OF THE PACKAGE)
 - Δ DOES NOT COMPLY JEDEC STANDARD VALUE.
 - F) "A1" DIMENSIONS REPRESENT LIKE BELOW:
 SINGLE GAUGE = 0.51 - 0.61
 DUAL GAUGE = 1.14 - 1.40
 - G) DRAWING FILE NAME: TO220B03REV6

Dimensions in Millimeters

Physical Dimensions (Continued)

SOT-223







Dimensions in Millimeters



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