

New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

D44T Series

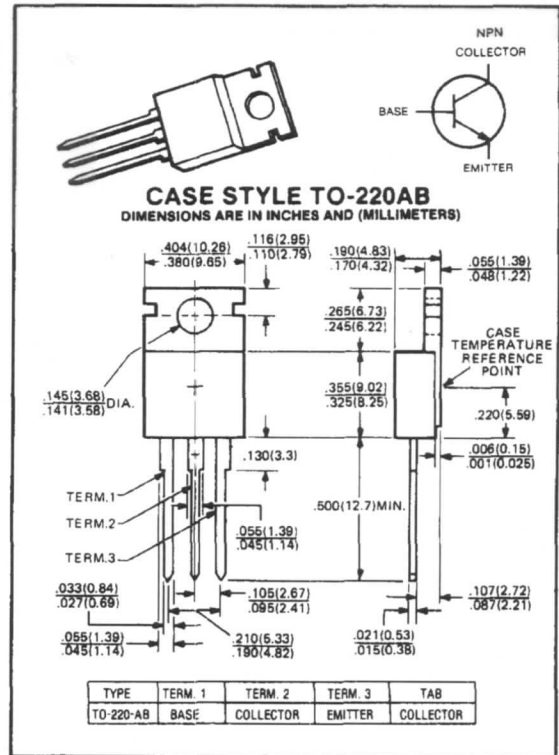
250-300 VOLTS
2 AMP, 31.2 WATTS

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HIGH VOLTAGE NPN POWER TRANSISTORS

Features:

- Very low collector saturation voltage
- Excellent linearity
- Fast switching



maximum ratings ($T_A = 25^\circ\text{C}$) (unless otherwise specified)

RATING	SYMBOL	D44T1,2	D44T3,4	UNITS
Collect. -Emitter Voltage	V_{CEO}	250	300	Volts
Collector-Emitter Voltage	V_{CES}	300	400	Volts
Emitter Base Voltage	V_{EBO}	5	5	Volts
Collector Current — Continuous	I_C	2	2	A
Base Current — Continuous	I_B	0.5	0.5	A
Total Power Dissipation @ $T_A = 25^\circ\text{C}$ @ $T_C = 25^\circ\text{C}$	P_D	2.1 31.2	2.1 31.2	Watts
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-55 to +150	-55 to +150	$^\circ\text{C}$

thermal characteristics

Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	60	60	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	4	4	$^\circ\text{C/W}$
Maximum Lead Temperature for Soldering Purpose: $\frac{1}{8}$ " from Case for 5 Seconds	T_L	260	260	$^\circ\text{C}$

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors

electrical characteristics ($T_C = 25^\circ\text{C}$) (unless otherwise specified)

CHARACTERISTIC	SYMBOL	MIN	TYP	MAX	UNIT
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off characteristics⁽¹⁾

Collector-Emitter Breakdown Voltage ($I_C = 10\ \mu\text{A}$)	D44T1,2 D44T3,4	BV_{CES}	300 400	—	—	Volts
Collector Cutoff Current ($V_{CE} = \text{Rated } V_{ECS}$)		I_{CES}	—	—	10	μA
Emitter Cutoff Current ($V_{EB} = 5\text{V}$)		I_{EBO}	—	—	10	μA

second breakdown

Second Breakdown with Base Forward Biased	FBSOA	SEE FIGURE 5
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on characteristics⁽¹⁾

DC Current Gain ($I_C = 500\text{mA}, V_{CE} = 10\text{V}$) ($I_C = 50\text{mA}, V_{CE} = 10\text{V}$) ($I_C = 500\text{mA}, V_{CE} = 10\text{V}$) ($I_C = 50\text{mA}, V_{CE} = 10\text{V}$)	D44T1,3 D44T2,4	h_{FE}	30 40 75 40	— — — —	— — 175 —	
Collector-Emitter Saturation Voltage ($I_C = 500\text{mA}, I_B = 50\text{mA}$)		$V_{CE(sat)}$	—	—	1.0	V
Base Emitter Saturation Voltage ($I_C = 500\text{mA}, I_B = 50\text{mA}$)		$V_{BE(sat)}$	—	—	1.2	V

dynamic characteristics

Collector Capacitance ($V_{CB} = 10\text{V}, f = 1\text{MHz}$)	C_{cb}	—	25	—	μF
Current Gain — Bandwidth Product ($I_C = 100\text{mA}, V_{CE} = 10\text{V}, f_{test} = 1.0\text{MHz}$)	f_T	—	45	—	MHz

switching characteristics

Resistive Load	$I_C = 500\text{mA}, I_{B1} = I_{B2} = 50\text{mA}$ $V_{CC} = 50\text{V}, t_p = 25\mu\text{sec}$	$t_d + t_r$	—	0.2	—	μs
Delay Time + Rise Time						
Storage Time						
Fall Time						

(1) Pulse Test: Pulse Width - $300\mu\text{s}$ Duty Cycle $\leq 2\%$.

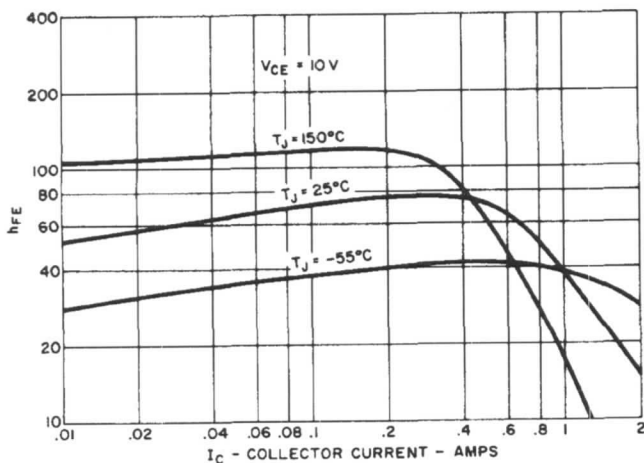


FIG. 1 TYPICAL h_{FE} VS. I_C

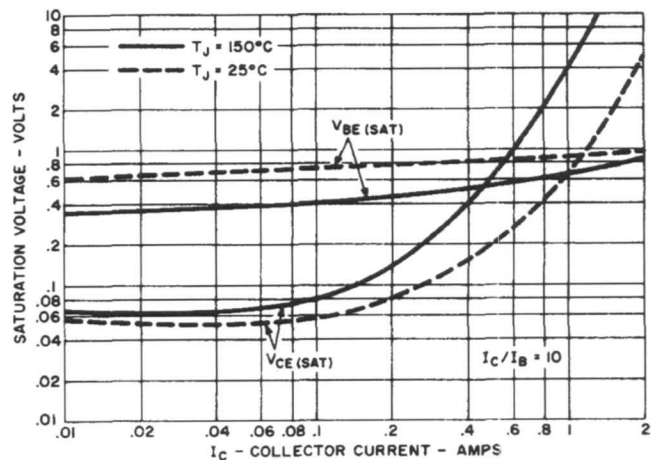


FIG. 2 TYPICAL SATURATION VOLTAGE CHARACTERISTICS