HIGH VOLTAGE
NPN POWER TRANSISTORS

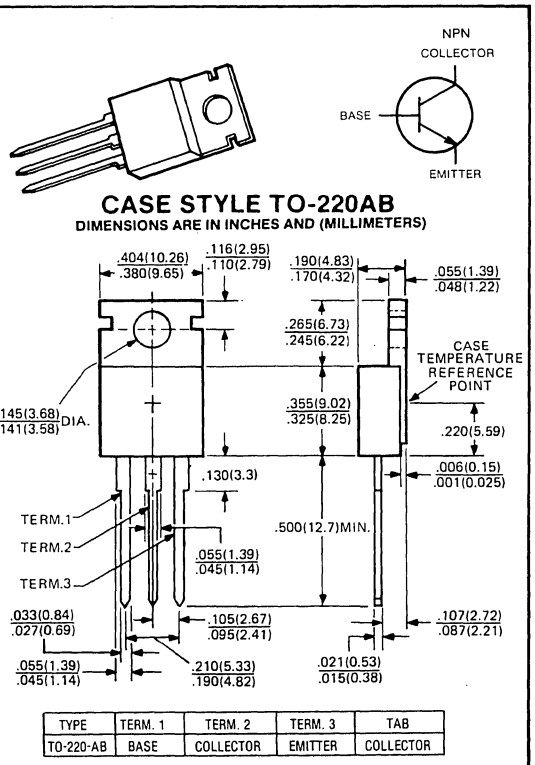
D44T Series

250-300 VOLTS
2 AMP, 31.2 WATTS

The General Electric D44T is an encapsulated power transistor designed for various specific and general purpose applications such as: 120 V.A.C. line operated amplifiers; series, shunt and switching regulators; low thru high frequency inverters/converters; t-v and other display tube deflection; and many others.

Features:

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



maximum ratings (T_A = 25°C) (unless otherwise specified)

RATING	SYMBOL	D44T1,2	D44T3,4	UNITS
Collecto -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°C @ T_C = 25C	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	°C

thermal characteristics

Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	60	60	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	4	4	°C/W
Maximum Lead Temperature for Soldering Purpose: ⅛" from Case for 5 Seconds	T_L	260	260	°C

electrical characteristics (T_C = 25° C) (unless otherwise specified)

CHARACTERISTIC		SYMBOL	MIN	TYP	MAX	UNIT
off characteristics[1]						
Collector-Emitter Breakdown Voltage (I_C = 10 μA)	D44T1,2 D44T3,4	BV_{CES}	300 400	—	—	Volts
Collector Cutoff Current (V_{CE} = Rated V_{ECS})		I_{CES}	—	—	10	μA
Emitter Cutoff Current (V_{EB} = 5V)		I_{EBO}	—	—	10	μA
second breakdown						
Second Breakdown with Base Forward Biased		FBSOA	SEE FIGURE 5			
on characteristics[1]						
DC Current Gain (I_C = 500mA, V_{CE} = 10V) (I_C = 50mA, V_{CE} = 10V) (I_C = 500mA, V_{CE} = 10V) (I_C = 50mA, V_{CE} = 10V)	D44T1,3 D44T2,4	h_{FE}	30 40 75 40	— — — —	— — 175 —	
Collector-Emitter Saturation Voltage (I_C = 500mA, I_B = 50mA)		$V_{CE(sat)}$	—	—	1.0	V
Base Emitter Saturation Voltage (I_C = 500mA, I_B = 50mA)		$V_{BE(sat)}$	—	—	1.2	V
dynamic characteristics						
Collector Capacitance (V_{CB} = 10V, f = 1 MHz)		C_{cb}	—	25	—	pF
Current Gain — Bandwidth Product (I_C = 100mA, V_{CE} = 10V, f_{test} = 1.0 MHz))		f_T	—	45	—	MHz
switching characteristics						
Resistive Load						
Delay Time + Rise Time	I_C = 500mA, I_{B1} = I_{B2} = 50mA	$t_d + t_r$	—	0.2	—	μs
Storage Time	V_{CC} = 50V, t_p = 25μsec	t_s	—	3.3	—	
Fall Time		t_f	—	0.6	—	

(1) Pulse Test: Pulse Width - 300μs Duty Cycle ≤ 2%.

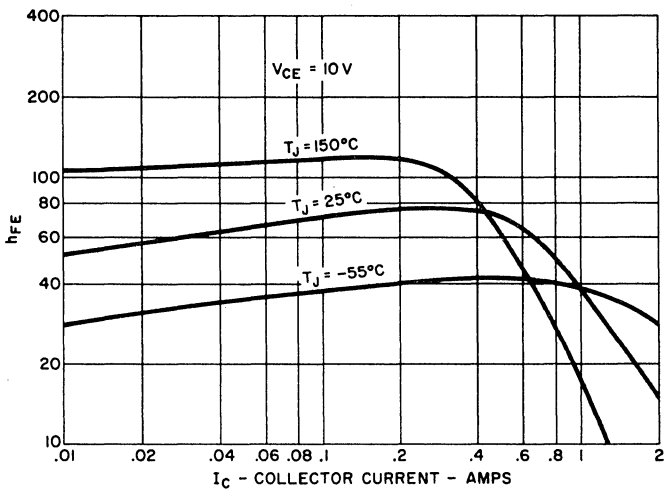


FIG. 1 TYPICAL h_{FE} VS. I_C

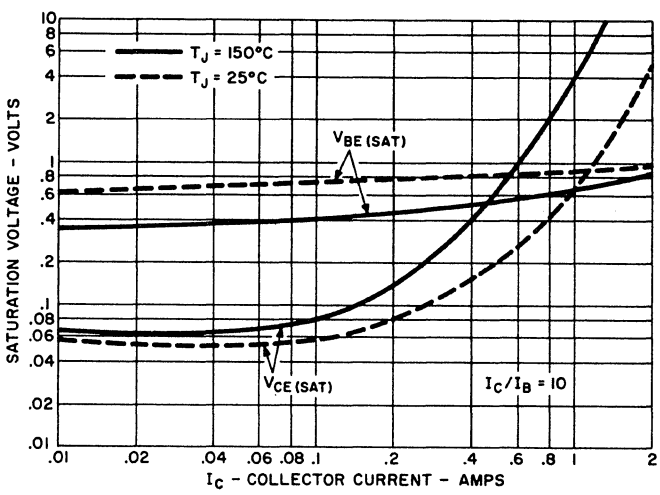


FIG. 2 TYPICAL SATURATION VOLTAGE CHARACTERISTICS

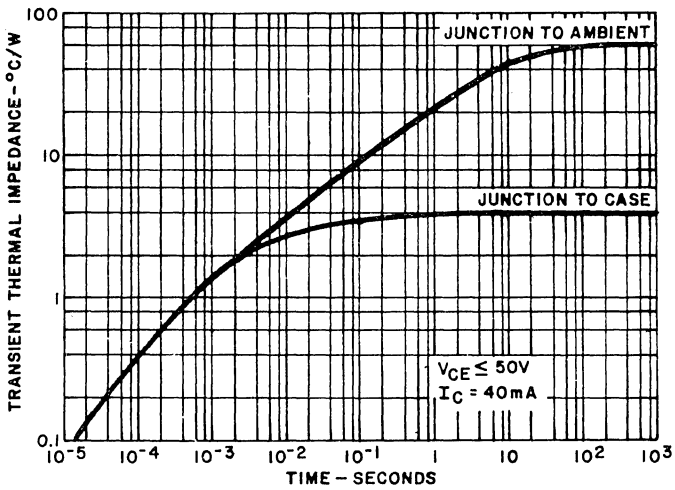


FIG. 3 MAXIMUM TRANSIENT THERMAL IMPEDANCE

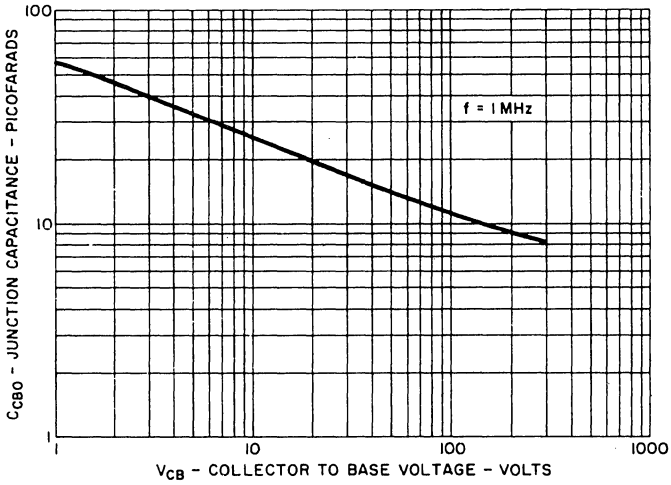


FIG. 4 COLLECTOR TO BASE JUNCTION CAPACITANCE VS. REVERSE BIAS VOLTAGE

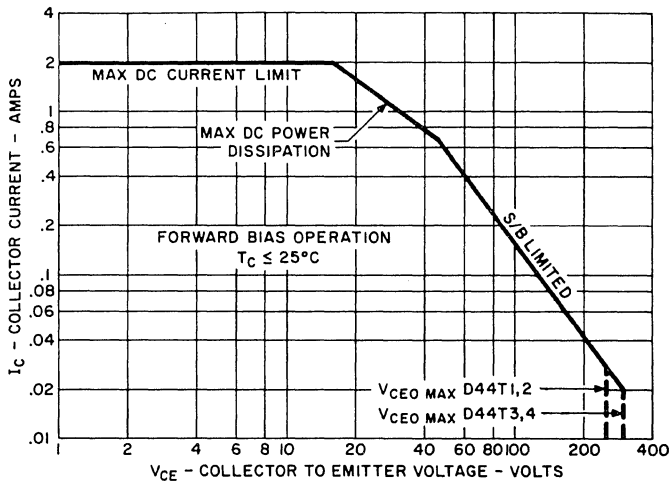


FIG. 5 SAFE REGION OF OPERATION