PNP POWER TRANSISTORS

COMPLEMENTARY TO THE D44H SERIES

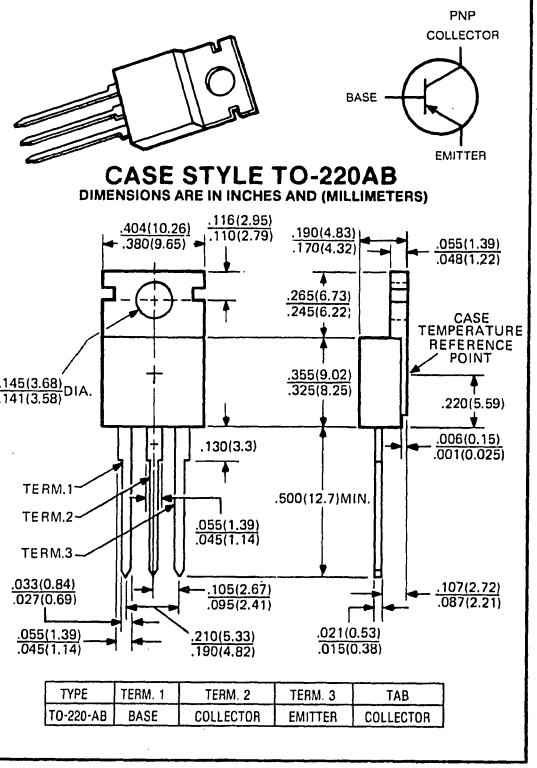
D45H Series

-30 - -80 VOLTS
-10 AMP, 50 WATTS

The General Electric D45H is a power transistor designed for various specific and general purpose applications, such as: output and driver stages of amplifiers operating at frequencies from DC to greater than 1.0 MHz; series, shunt and switching regulators; low and high frequency inverters/converters; and many others.

Features:

- PNP complement to D44H NPN
- Low collector saturation voltage
- Excellent linearity
- Fast switching



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

RATING	SYMBOL	D45H1, 2	D45H4, 5	D45H7, 8	D45H10, 11	UNITS
Collector-Emitter Voltage	V_{CEO}	-30	-45	-60	-80	Volts
Collector-Emitter Voltage	V_{CES}	-30	-45	-60	-80	Volts
Emitter Base Voltage	V_{EBO}	-5	-5	-5	-5	Volts
Collector Current — Continuous Peak(1)	I_C I_{CM}	-10 -20	-10 -20	-10 -20	-10 -20	A
Base Current — Continuous	I_B	-5	-5	-5	-5	A
Total Power Dissipation @ T_A = 25°C @ T_C = 25°C	P_D	1.67 50	1.67 50	1.67 50	1.67 50	Watts
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-55 to +150	-55 to +150	-55 to +150	-55 to +150	°C

thermal characteristics

Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	75	75	75	75	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.5	2.5	2.5	2.5	°C/W
Maximum Lead Temperature for Soldering Purposes: ⅛" from Case for 5 Seconds	T_L	+260	+260	+260	+260	°C

(1) Pulse Test Pulse Width = 300ms Duty Cycle ≤ 2%.

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

CHARACTERISTIC		SYMBOL	MIN	TYP	MAX	UNIT
off characteristics[1]						
Collector-Emitter Sustaining Voltage (I_C = 100mA)	D45H1, 2 D45H4, 5 D45H7, 8 D45H10, 11	$V_{CEO(sus)}$	-30 -45 -60 -80	— — — —	— — — —	Volts
Collector Cutoff Current (V_{CB} = Rated V_{CBO})		I_{CBO}	—	—	-10	μA
Emitter Cutoff Current (V_{EB} = -5V)		I_{EBO}	—	—	-100	μA
second breakdown						
Second Breakdown with Base Forward Biased		FBSOA	SEE FIGURE 4			
on characteristics						
DC Current Gain (I_C = -2A, V_{CE} = -1V) (I_C = -4A, V_{CE} = -1V)	D45H1, 4, 7, 10 D45H2, 5, 8, 11 D45H1, 4, 7, 10 D45H2, 5, 8, 11	h_{FE}	35 60 20 40	— — — —	— — — —	—
Collector-Emitter Saturation Voltage (I_C = -8A, I_B = -0.4A) (I_C = -8A, I_B = -0.8A)	D45H1, 4, 7, 10 D45H2, 5, 8, 11	$V_{CE(sat)}$	— —	— —	-1.0 -1.0	Volts
Base-Emitter Saturation Voltage (I_C = -8A, I_B = -0.8A)		$V_{BE(sat)}$	—	—	-1.5	Volts
dynamic characteristics						
Collector Capacitance (V_{CB} = -10V, f = 1M_{Hz})		C_{CBO}	—	230	—	pF
Current-Gain — Bandwidth Product (I_C = -500mA, V_{CE} = -10V)		f_T	—	40	—	MHz
switching characteristics						
Resistive Load						
Delay Time + Rise Time	I_C = -5A, I_{B1} = -0.5A	$t_d + t_r$	—	135	—	nS
Storage Time	I_C = -5A, I_{B1} = I_{B2} = -0.5A	t_s	—	500	—	
Fall Time		t_f	—	100	—	

(1) Pulse Test PW = 300ms Duty Cycle ≤ 2%.

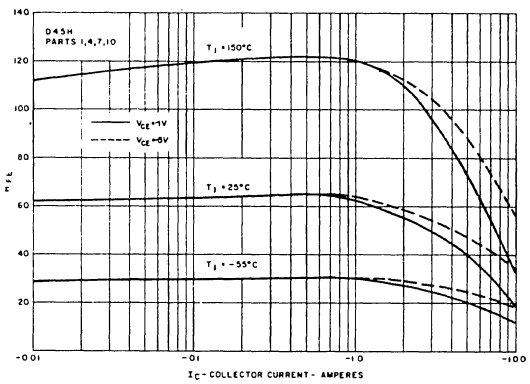


FIG. 1 TYPICAL GAIN CHARACTERISTICS

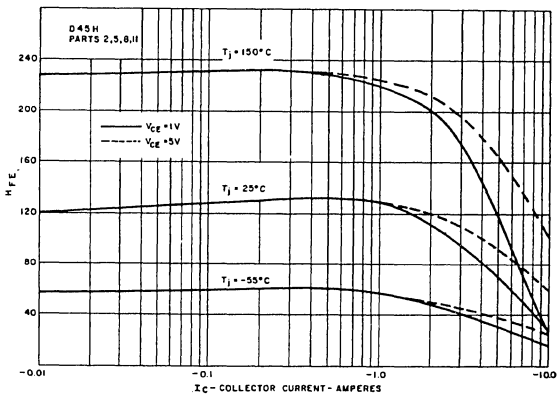


FIG. 2 TYPICAL GAIN CHARACTERISTICS

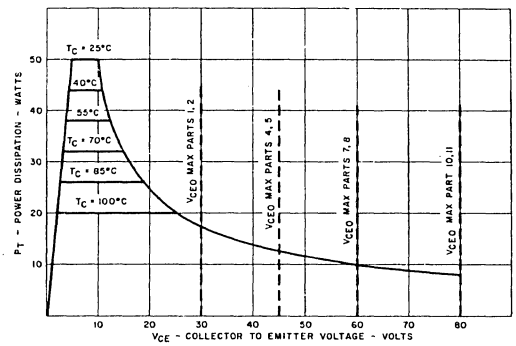


FIG. 3 MAXIMUM PERMISSIBLE DC POWER DISSIPATION

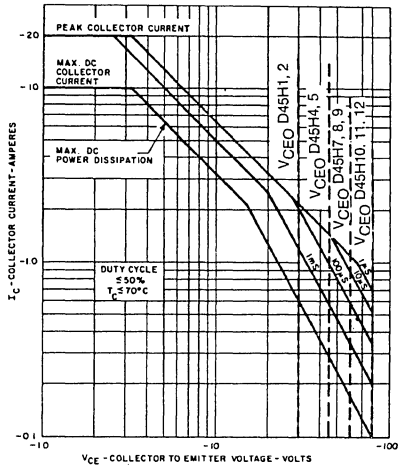


FIG. 4 SAFE REGION OF OPERATION

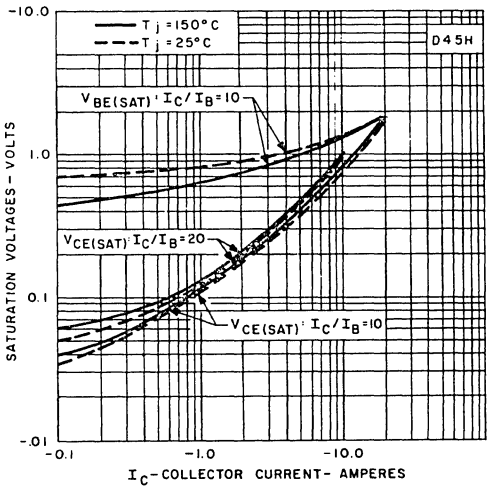


FIG. 5 TYPICAL SATURATION VOLTAGE CHARACTERISTICS

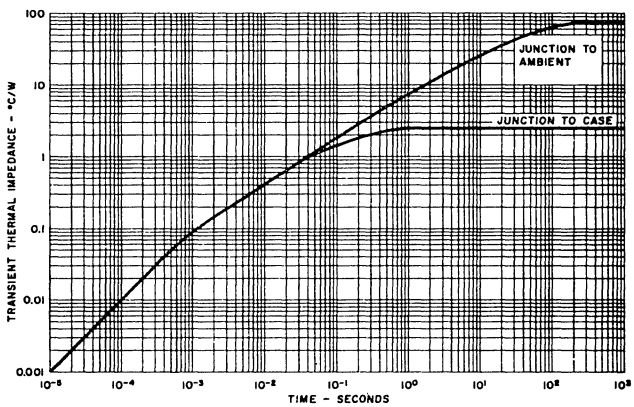


FIG. 6 TRANSIENT THERMAL IMPEDANCE