NEC

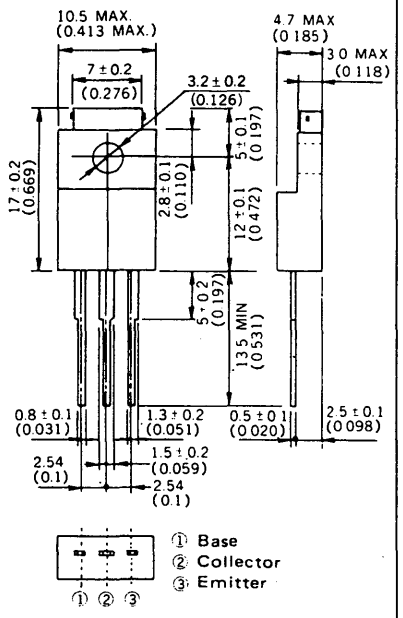
NPN SILICON POWER TRANSISTOR
2SD1585

DESCRIPTION The 2SD1585 is an NPN general purpose transistor designed for use in audio frequency power amplifier.

FEATURES

- Easy mount by eliminating Sheet and Bushing.
- Complementary to the 2SB1094.

PACKAGE DIMENSIONS
in millimeters (inches)



ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

- Storage Temperature . . . . . −55 to +150 °C
- Junction Temperature . . . . . 150 °C Maximum

Maximum Power Dissipations

- Total Power Dissipation (T_a = 25 °C) . . . . 2.0 W
- Total Power Dissipation (T_c = 25 °C) . . . . 15 W

Maximum Voltages and Currents (T_a = 25 °C)

V_{CBO}	Collector to Base Voltage	60	V
V_{CEO}	Collector to Emitter Voltage . . .	60	V
V_{EBO}	Emitter to Base Voltage	7.0	V
$I_{C(DC)}$	Collector Current (DC)	3.0	A
$I_{C(pulse)}$	Collector Current (Pulse)*	5.0	A
$I_{B(pulse)}$	Base Current (DC)	0.6	A

* PW ≦ 10 ms, Duty Cycle ≦ 50 %

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE1}**	DC Current Gain	20				V_{CE} = 5.0 V, I_C = 50 mA
h_{FE2}**	DC Current Gain	40		200		V_{CE} = 5.0 V, I_C = 0.5 A
f_T	Gain Bandwidth Product		16		MHz	V_{CE} = 5.0 V, I_C = 0.1 A
C_{ob}	Output Capacitance		48		pF	V_{CB} = 10 V, I_E = 0, f = 1.0 MHz
I_{CBO}	Collector Cutoff Current			10	μA	V_{CB} = 60 V, I_E = 0
I_{EBO}	Emitter Cutoff Current			10	μA	V_{EB} = 7.0 V, I_C = 0
$V_{CE(sat)}$**	Collector Saturation Voltage			1.5	V	I_C = 2.0 A, I_B = 0.2 A
$V_{BE(sat)}$**	Base Saturation Voltage			2.0	V	I_C = 2.0 A, I_B = 0.2 A

**Pulsed: PW ≦ 350 μs, Duty Cycle ≦ 2 %

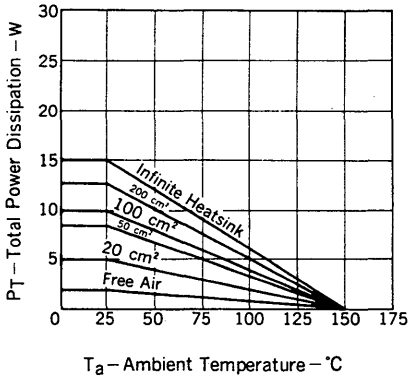
Classification of h_{FE2}

Rank	M	L	K
Range	40 to 80	60 to 120	100 to 200

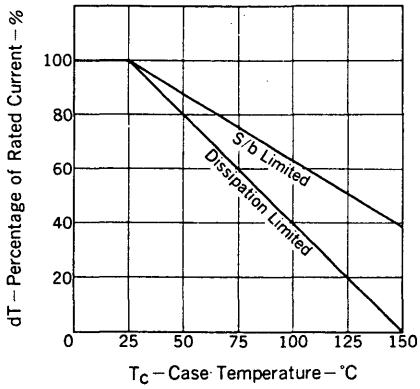
Test Conditions: V_{CE} = 5.0 V, I_C = 0.5 A

TYPICAL CHARACTERISTICS (T_a = 25 °C)

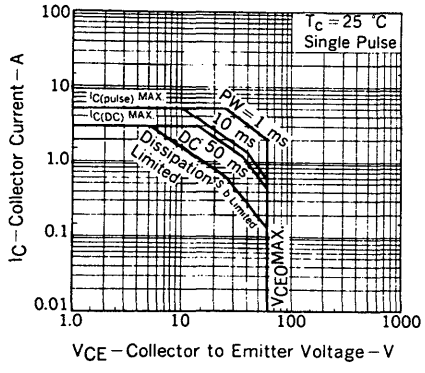
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



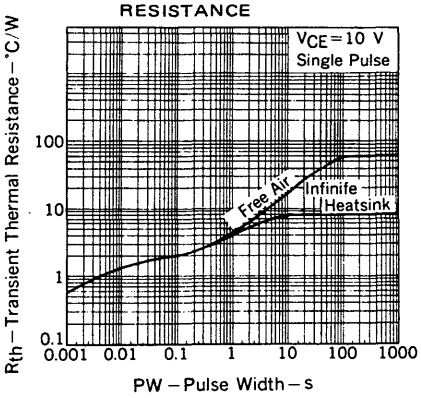
DERATING CURVE OF SAFE OPERATING AREA



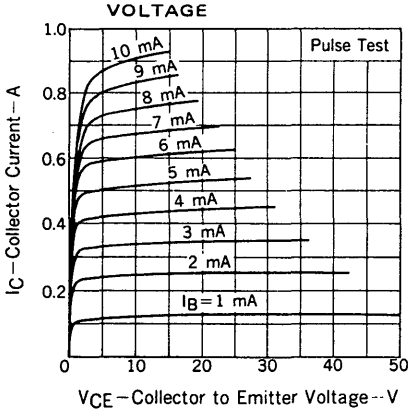
FORWARD BIAS SAFE OPERATING AREA



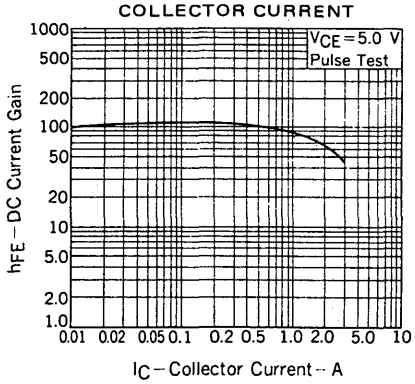
TRANSIENT THERMAL RESISTANCE



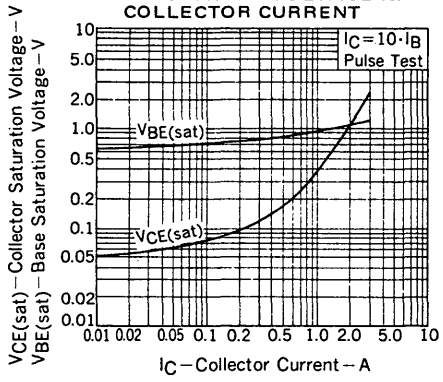
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



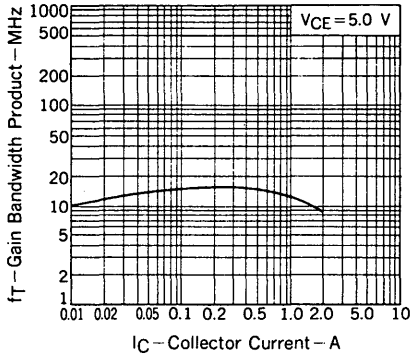
DC CURRENT GAIN vs. COLLECTOR CURRENT



BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT



OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE