NEC

PNP SILICON TRANSISTOR
2SB984

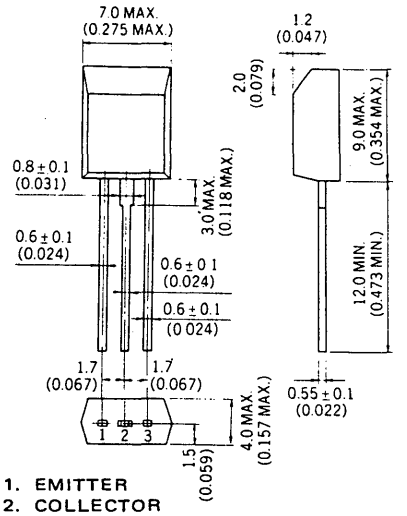
DESCRIPTION

The 2SB984 is designed for use in driver and output stages of audio frequency amplifiers.

FEATURES

- High total power dissipation and high break-down voltage : P_T = 1.0 W (T_a = 25 °C), V_{CEO} = −80 V
- Complementary to the NEC 2SC1312 NPN transistor.

PACKAGE DIMENSIONS
in millimeters (inches)



1. EMITTER
2. COLLECTOR
3. BASE

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

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

Maximum Power Dissipation (T_a = 25 °C)

- Total Power Dissipation . . . . . 1.0 W

Maximum Voltages and Currents (T_a = 25 °C)

- V_{CBO} Collector to Base Voltage . . . . . −120 V
- V_{CEO} Collector to Emitter Voltage . . . . −80 V
- V_{EBO} Emitter to Base Voltage . . . . . −5.0 V
- $I_{C\ (DC)}$ DC Collector Current . . . . . −1.0 A
- $I_{C\ (pulse)}$ AC Collector Current . . . . . −2.0 A

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE1}*	DC Current Gain	135		400		V_{CE} = −1.0 V, I_C = −200 mA
h_{FE2}*	DC Current Gain	40				V_{CE} = −1.0 V, I_C = −500 mA
f_T	Gain Bandwidth Product	50	100		MHz	V_{CE} = −6.0 V, I_E = 200 mA
C_{ob}	Output Capacitance		20	50	pF	V_{CB} = −10 V, I_E = 0, f=1.0 MHz
I_{CBO}	Collector Cutoff Current			−100	nA	V_{CB} = −100 V, I_E = 0
I_{EBO}	Emitter Cutoff Current			−100	nA	V_{EB} = −5.0 V, I_C = 0
V_{BE}*	Base to Emitter Voltage	−550	−600	−650	mV	V_{CE} = −6.0 V, I_C = −10 mA
$V_{CE(sat)}$*	Collector Saturation Voltage		−0.5	−1.0	V	I_C = −1.0 A, I_B = −100 mA
$V_{BE(sat)}$*	Base Saturation Voltage		−1.0	−1.2	V	I_C = −1.0 A, I_B = −100 mA

* Pulsed PW≦300 μs, duty cycle≦2 %

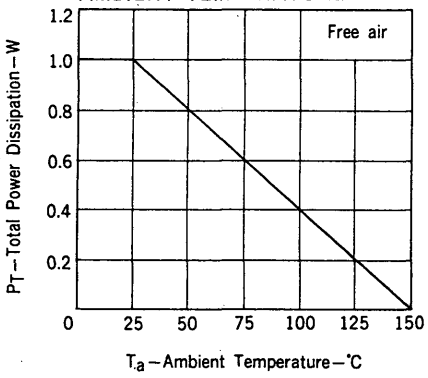
Classified of h_{FE1}

Rank	L	K
Range	135 − 270	200 − 400

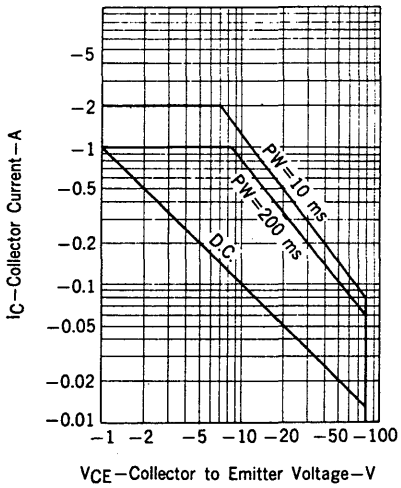
Test Conditions: V_{CE} = −1.0 V, I_C = −200 mA

TYPICAL CHARACTERISTICS (T_a = 25 °C)

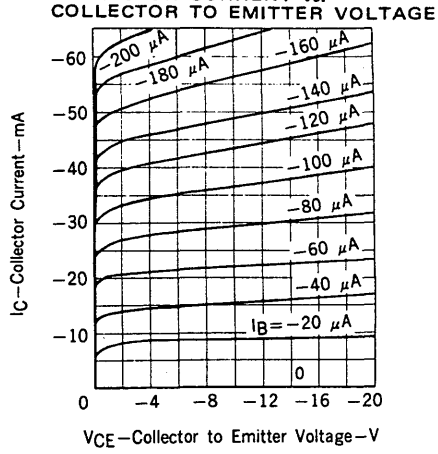
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



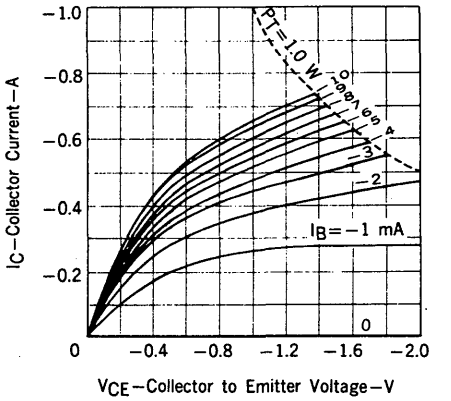
SAFE OPERATING AREAS (TRANSIENT THERMAL RESISTANCE METHOD)



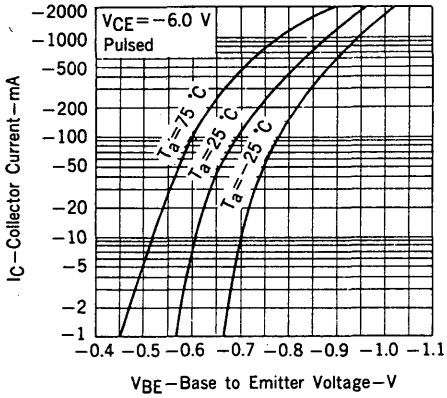
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



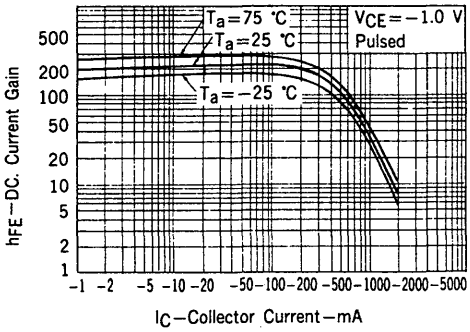
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



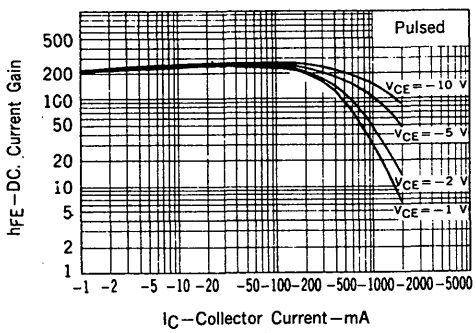
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



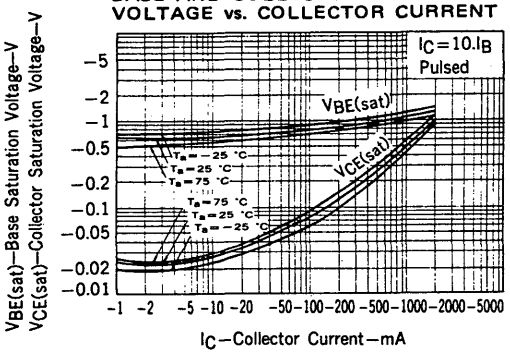
DC CURRENT GAIN vs. COLLECTOR CURRENT



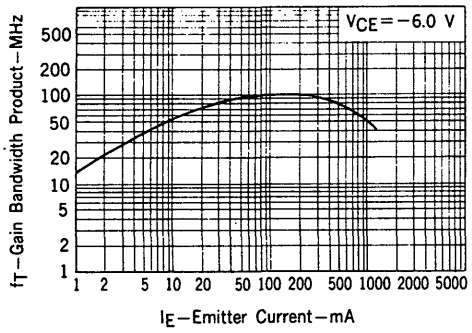
DC CURRENT GAIN vs. COLLECTOR CURRENT



BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs.
EMITTER CURRENT



OUTPUT CAPACITANCE vs.
COLLECTOR TO BASE VOLTAGE