NEC

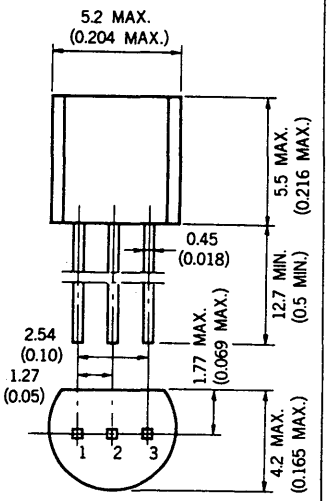
PNP SILICON TRANSISTOR
2SA988

DESCRIPTION The 2SA988 is designed for use in driver stage of AF amplifier.

FEATURES

- High Voltage. V_{CEO} : −120 V
- Low Output Capacitance. C_{ob} : 2.0 pF TYP. (V_{CB} = −30 V)
- High h_{FE}. h_{FE} : 500 TYP. (V_{CE} = −6.0 V, I_C = −1.0 mA)

PACKAGE DIMENSIONS
in millimeters (inches)



1. EMITTER
2. COLLECTOR
3. BASE

EIAJ : SC-43B
JEDEC : TO-92
IEC : PA33

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

- Storage Temperature . . . . . −55 to +125 °C
- Junction Temperature . . . . . +125 °C Maximum

Maximum Power Dissipation (Ta = 25 °C)

- Total Power Dissipation . . . . . 500 mW

Maximum Voltages and Currents (Ta = 25 °C)

- V_{CBO} Collector to Base Voltage . . . . . −120 V
- V_{CEO} Collector to Emitter Voltage . . . . . −120 V
- V_{EBO} Emitter to Base Voltage . . . . . −5.0 V
- I_C Collector Current . . . . . −50 mA
- I_B Base Current . . . . . −10 mA

ELECTRICAL CHARACTERISTICS (Ta = 25 °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE1}	DC Current Gain	150	500		−	V_{CE} = −6.0 V, I_C = −0.1 mA
h_{FE2}	DC Current Gain	200	500	800	−	V_{CE} = −6.0 V, I_C = −1.0 mA
f_T	Gain Bandwidth Product	50	100		MHz	V_{CE} = −6.0 V, I_E = 1.0 mA
Cob	Output Capacitance		2.0	3.0	pF	V_{CB} = −30 V, I_E = 0, f = 1.0 MHz
I_{CBO}	Collector Cutoff Current			−50	nA	V_{CB} = −120 V, I_E = 0
I_{EBO}	Emitter Cutoff Current			−50	nA	V_{EB} = −5.0 V, I_C = 0
V_{BE}	Base to Emitter Voltage	−0.55	−0.61	−0.65	V	V_{CE} = −6.0 V, I_C = −1.0 mA
$V_{CE(sat)}$	Collector Saturation Voltage		−0.09	−0.30	V	I_C = −10 mA, I_B = −1.0 mA

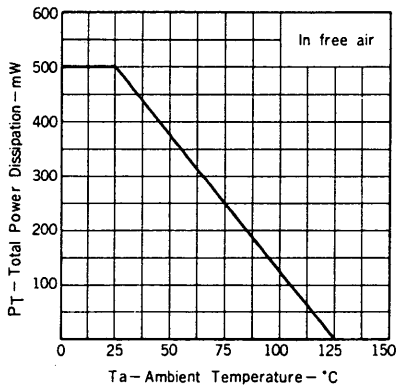
Classification of h_{FE2}

Rank	P	F	E
Range	200 − 400	300 − 600	400 − 800

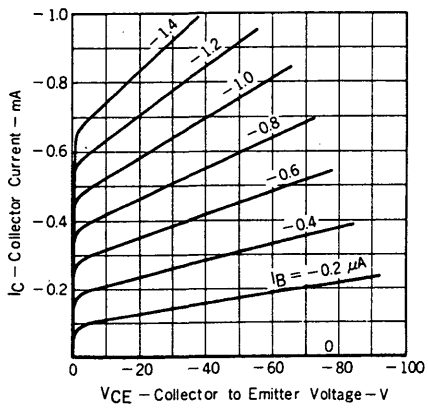
h_{FE} Test Conditions : V_{CE} = −6.0 V, I_C = −1.0 mA

TYPICAL CHARACTERISTICS (Ta = 25 °C unless otherwise noted)

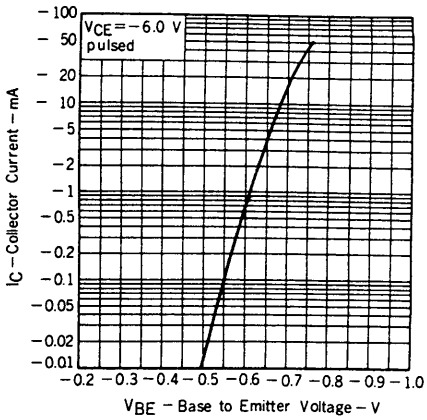
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



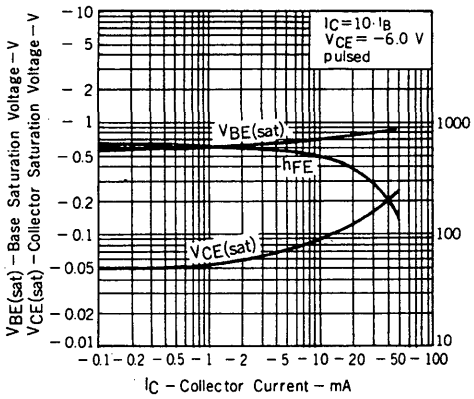
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



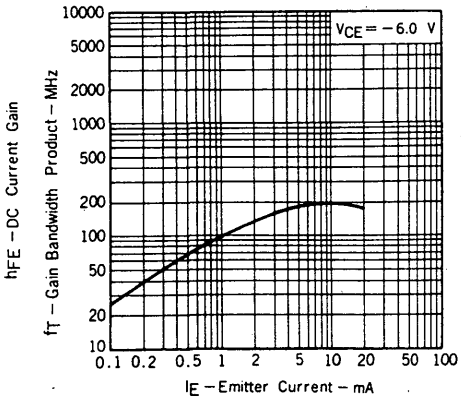
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



COLLECTOR AND BASE SATURATION VOLTAGE, DC CURRENT GAIN vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE