NEC

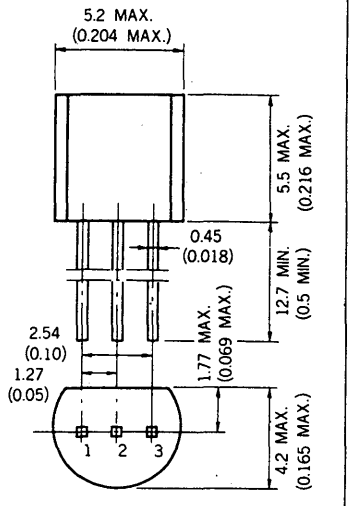
PNP SILICON TRANSISTOR
2SA733

DESCRIPTION The 2SA733 is designed for use in driver stage of AF amplifier.

FEATURES

- High h_{FE} and Excellent Linearity : 200 TYP.
  h_{FE} (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 . . . . . 250 mW

Maximum Voltages and Currents (Ta = 25 °C)

- V_{CBO} Collector to Base Voltage . . . . . −60 V
- V_{CEO} Collector to Emitter Voltage . . . . . −50 V
- V_{EBO} Emitter to Base Voltage . . . . . −5.0 V
- I_C Collector Current . . . . . −100 mA
- I_B Base Current . . . . . −20 mA

ELECTRICAL CHARACTERISTICS (Ta = 25 °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE}	DC Current Gain	90	200	600		V_{CE} = −6.0 V, I_C = −1.0 mA
NF	Noise Figure		6.0	20	dB	V_{CE} = −6.0 V, I_C = −0.3 mA, R_G = 10 kΩ, f = 100 Hz
f_T	Gain Bandwidth Product	100	180		MHz	V_{CE} = −6.0 V, I_E = 10 mA
C_{ob}	Output Capacitance		4.5	6.0	pF	V_{CB} = −10 V, I_E = 0, f = 1.0 MHz
I_{CBO}	Collector Cutoff Current			−0.1	μA	V_{CB} = −60 V, I_E = 0
I_{EBO}	Emitter Cutoff Current			−0.1	μA	V_{EB} = −5.0 V, I_C = 0
V_{BE}	Base to Emitter Voltage	−0.58	−0.62	−0.68	V	V_{CE} = −6.0 V, I_C = −1.0 mA
$V_{CE(sat)}$	Collector Saturation Voltage		−0.18	−0.3	V	I_C = −100 mA, I_B = −10 mA

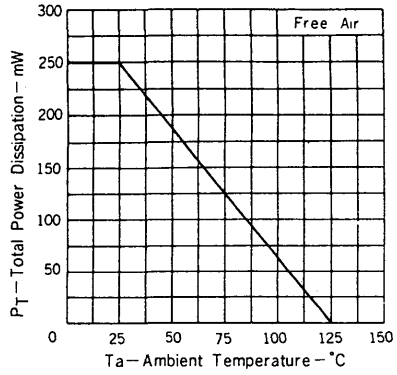
Classification of h_{FE}

Rank	R	Q	P	K
Range	90 – 180	135 – 270	200 – 400	300 – 600

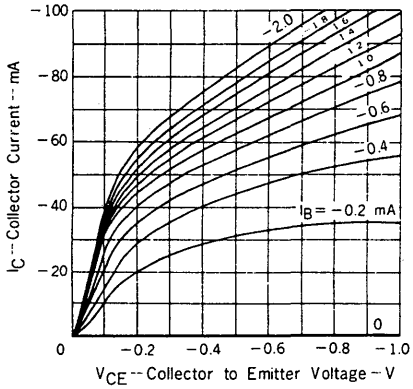
h_{FE} Test Conditions : V_{CE} = −6.0 V, I_C = −1.0 mA

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

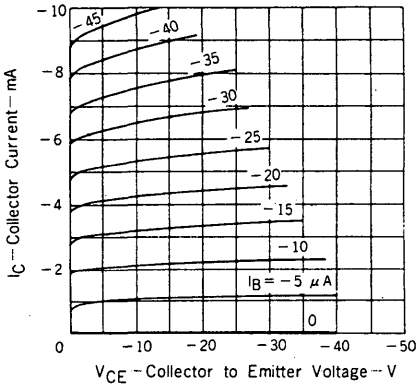
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



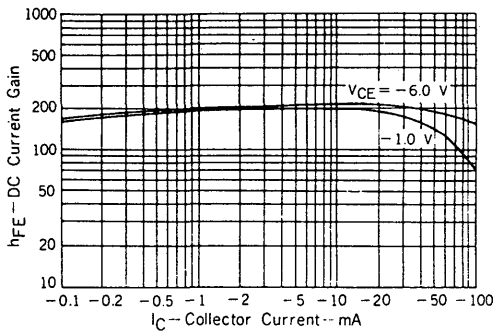
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



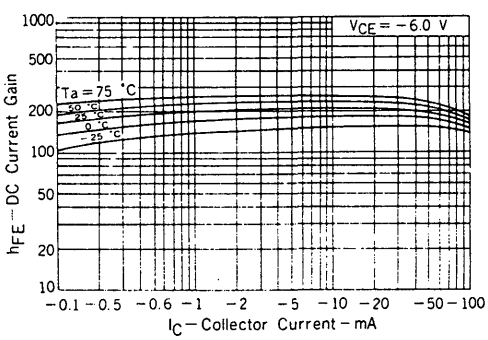
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



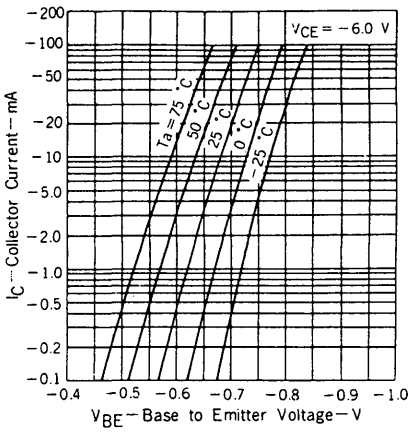
DC CURRENT GAIN vs. COLLECTOR CURRENT



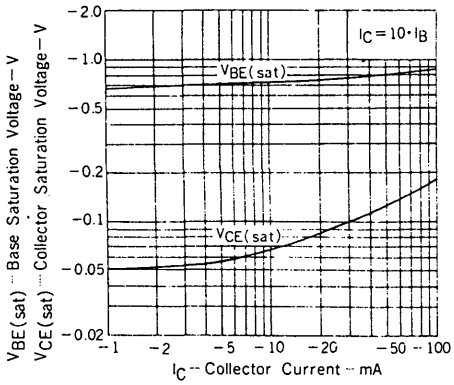
DC CURRENT GAIN vs. COLLECTOR CURRENT



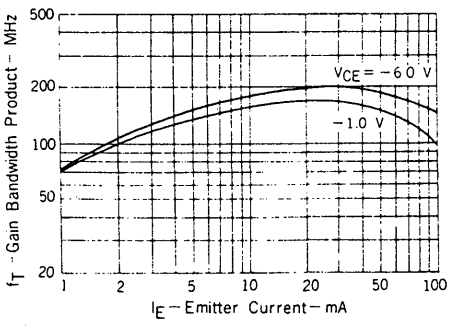
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



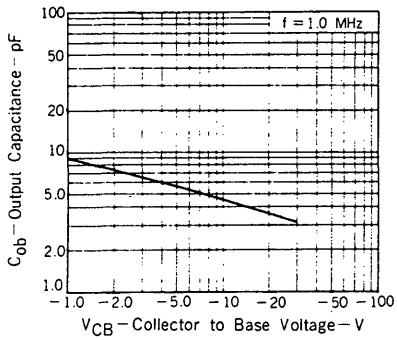
COLLECTOR AND BASE SATURATION VOLTAGE vs. COLLECTOR CURRENT



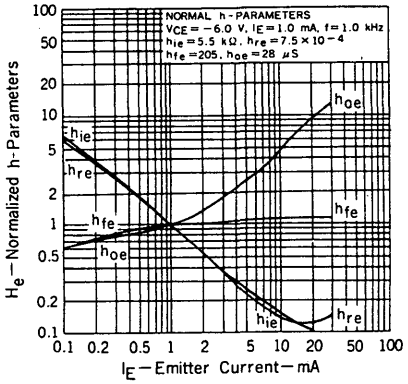
GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



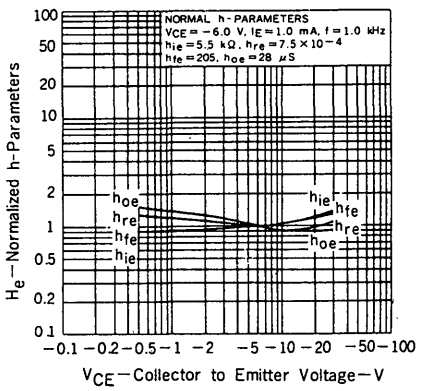
OUTPUT CAPACITANCE vs. REVERSE VOLTAGE



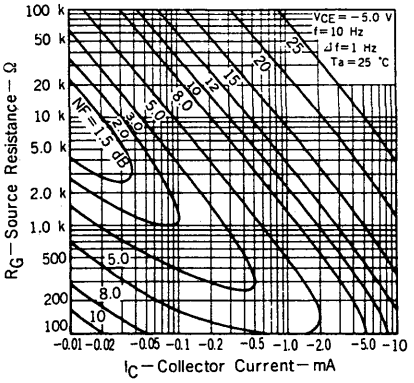
NORMALIZED h-PARAMETERS vs. EMITTER CURRENT



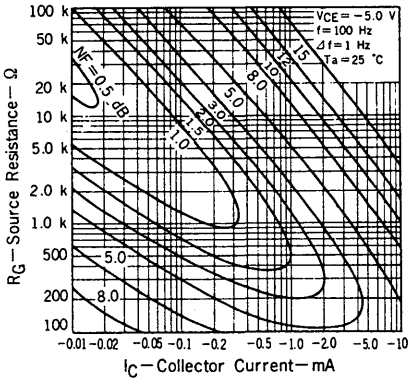
NORMALIZED h-PARAMETERS vs. COLLECTOR TO EMITTER VOLTAGE



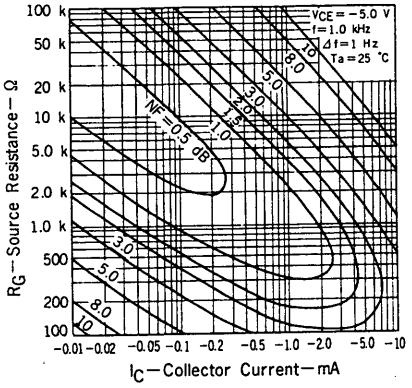
NOISE FIGURE MAP 1



NOISE FIGURE MAP 2



NOISE FIGURE MAP 3



NOISE FIGURE MAP 4