NEC

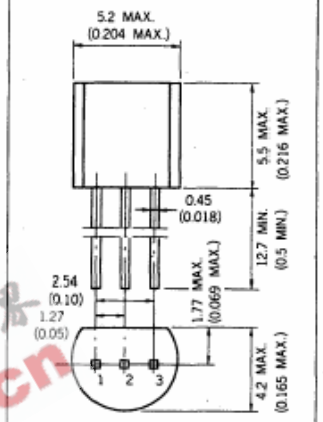
# PNP SILICON TRANSISTOR
# 2SA733

**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