

Transistors

2SC9014

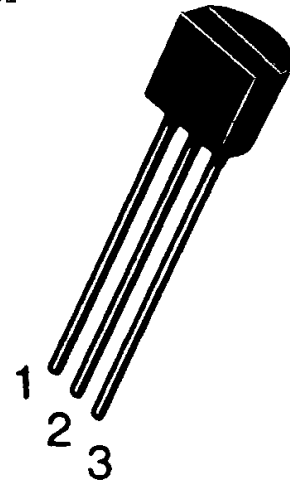
PRE-AMPLIFIER, LOW LEVEL & LOW NOISE

- High total power dissipation. (PT=450mW)
- High h_{FE} and good linearity
- Complementary to SS9015

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

| Characteristic | Symbol | Rating | Unit |
|---------------------------|-----------|---------|------------------|
| Collector-Base Voltage | V_{CBO} | 50 | V |
| Collector-Emitter Voltage | V_{CEO} | 45 | V |
| Emitter-Base Voltage | V_{EBO} | 5 | V |
| Collector Current | I_C | 100 | mA |
| Collector Dissipation | P_C | 450 | mW |
| Junction Temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -55~150 | $^\circ\text{C}$ |

TO-92



1. Emitter 2. Base 3. Collector

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

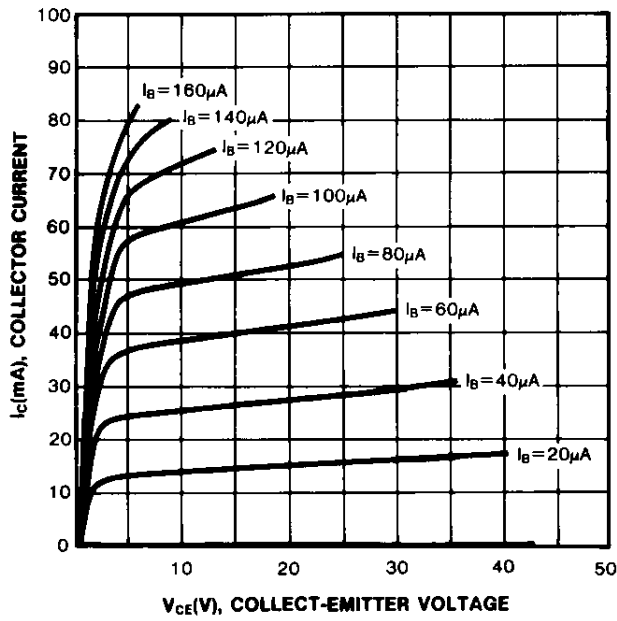
| Characteristic | Symbol | Test Conditions | Min | Typ | Max | Unit |
|-------------------------------------|---------------|--|------|------|------|------|
| Collector-Base Breakdown Voltage | BV_{CBO} | $I_C = 100\mu\text{A}$, $I_E = 0$ | 50 | | | V |
| Collector-Emitter Breakdown Voltage | BV_{CEO} | $I_C = 1\text{mA}$, $I_B = 0$ | 45 | | | V |
| Emitter-Base Breakdown Voltage | BV_{EBO} | $I_E = 100\mu\text{A}$, $I_C = 0$ | 5 | | | V |
| Collector Cutoff Current | I_{CBO} | $V_{CB} = 50\text{V}$, $I_E = 0$ | | | 50 | nA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = 5\text{V}$, $I_C = 0$ | | | 50 | nA |
| DC Current Gain | h_{FE} | $V_{CE} = 5\text{V}$, $I_C = 1\text{mA}$ | 60 | 280 | 1000 | |
| Collector-Base Saturation Voltage | $V_{CE(sat)}$ | $I_C = 100\text{mA}$, $I_B = 5\text{mA}$ | | 0.14 | 0.3 | V |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = 100\text{mA}$, $I_B = 5\text{mA}$ | | 0.84 | 1.0 | V |
| Base-Emitter On Voltage | $V_{BE(on)}$ | $V_{CE} = 5\text{V}$, $I_C = 2\text{mA}$ | 0.58 | 0.63 | 0.7 | V |
| Output Capacitance | C_{ob} | $V_{CB} = 10\text{V}$, $I_E = 0$ $f = 1\text{MHz}$ | | 2.2 | 3.5 | pF |
| Current Gain-Bandwidth Product | f_T | $V_{CE} = 5\text{V}$, $I_C = 10\text{mA}$ | 150 | 270 | | MHz |
| Noise Figure | NF | $V_{CE} = 5\text{V}$, $I_C = 0.2\text{mA}$ $f = 1\text{KHz}$, $R_s = 2\text{K}\Omega$ | | 0.9 | 10 | dB |

h_{FE} CLASSIFICATION

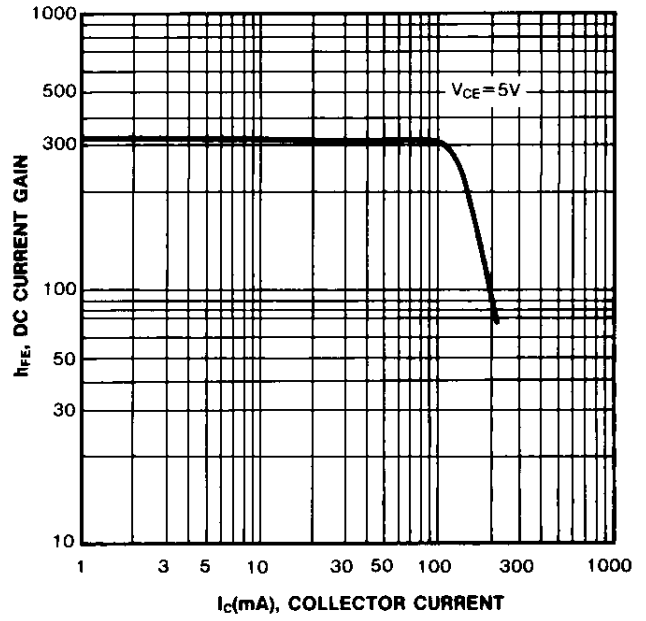
| Classification | A | B | C | D |
|----------------|--------|---------|---------|----------|
| h_{FE} | 60-150 | 100-300 | 200-600 | 400-1000 |



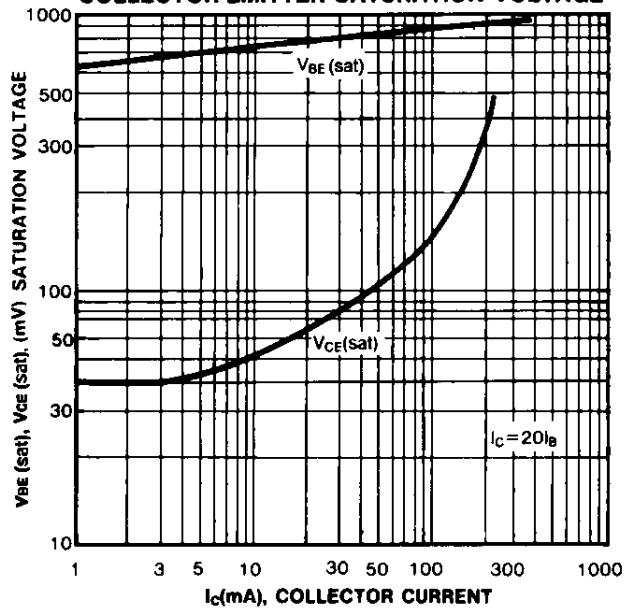
STATIC CHARACTERISTIC



DC CURRENT GAIN



**BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE**



CURRENT GAIN-BANDWIDTH PRODUCT

