

**DESCRIPTION** The 2SC1841 is designed for use in AF amplifier, driver and low speed switching.

- FEATURES**
- High Voltage  $V_{CEO} : 120 \text{ V}$
  - High  $h_{FE}$   $h_{FE} : 600 \text{ TYP. } (V_{CE} = 6.0 \text{ V, } I_C = 1.0 \text{ mA})$

**ABSOLUTE MAXIMUM RATINGS**

Maximum Temperatures

Storage Temperature . . . . .  $-55 \text{ to } +125 \text{ }^\circ\text{C}$

Junction Temperature . . . . .  $+125 \text{ }^\circ\text{C}$  Maximum

Maximum Power Dissipation ( $T_a = 25 \text{ }^\circ\text{C}$ )

Total Power Dissipation . . . . .  $500 \text{ mW}$

Maximum Voltages and Currents ( $T_a = 25 \text{ }^\circ\text{C}$ )

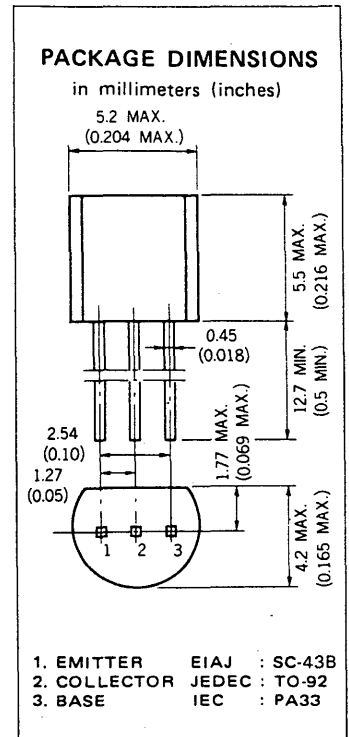
$V_{CBO}$  Collector to Base Voltage . . . . .  $120 \text{ V}$

$V_{CEO}$  Collector to Emitter Voltage . . . . .  $120 \text{ V}$

$V_{EBO}$  Emitter to Base Voltage . . . . .  $5.0 \text{ V}$

$I_C$  Collector Current . . . . .  $50 \text{ mA}$

$I_B$  Base Current . . . . .  $10 \text{ mA}$



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

| SYMBOL        | CHARACTERISTIC               | MIN. | TYP. | MAX. | UNIT | TEST CONDITIONS  |
|---------------|------------------------------|------|------|------|------|--|
| $h_{FE1}$     | DC Current Gain              | 150  | 580  |      |      | $V_{CE} = 6.0 \text{ V, } I_C = 0.1 \text{ mA}$        |
| $h_{FE2}$     | DC Current Gain              | 200  | 600  | 1200 |      | $V_{CE} = 6.0 \text{ V, } I_C = 1.0 \text{ mA}$        |
| $f_T$         | Gain Bandwidth Product       | 50   | 110  |      | MHz  | $V_{CE} = 6.0 \text{ V, } I_E = -1.0 \text{ mA}$       |
| $C_{ob}$      | Output Capacitance           |      | 1.6  | 2.5  | pF   | $V_{CB} = 30 \text{ V, } I_E = 0, f = 1.0 \text{ MHz}$ |
| $I_{CBO}$     | Collector Cutoff Current     |      |      | 50   | nA   | $V_{CB} = 120 \text{ V, } I_E = 0$                     |
| $I_{EBO}$     | Emitter Cutoff Current       |      |      | 50   | nA   | $V_{EB} = 5.0 \text{ V, } I_C = 0$                     |
| $V_{BE}$      | Base to Emitter Voltage      | 550  | 590  | 650  | mV   | $V_{CE} = 6.0 \text{ V, } I_C = 1.0 \text{ mA}$        |
| $V_{BE(sat)}$ | Base Saturation Voltage      |      | 0.73 | 1.0  | V    | $I_C = 10 \text{ mA, } I_B = 1.0 \text{ mA}$           |
| $V_{CE(sat)}$ | Collector Saturation Voltage |      | 70   | 300  | mV   | $I_C = 10 \text{ mA, } I_B = 1.0 \text{ mA}$           |

**Classification of  $h_{FE2}$**

| Rank  | P         | F         | E         | U          |
|-------|-----------|-----------|-----------|------------|
| Range | 200 - 400 | 300 - 600 | 400 - 800 | 600 - 1200 |

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

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

