

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

**FEATURES**

- High Voltage  $V_{CE0}$  : 120 V
- High  $h_{FE}$   $h_{FE}$  : 600 TYP. ( $V_{CE} = 6.0$  V,  $I_C = 1.0$  mA)

### ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

Storage Temperature . . . . . -55 to +125 °C

Junction Temperature . . . . . +125 °C Maximum

Maximum Power Dissipation ( $T_a = 25$  °C)

Total Power Dissipation . . . . . 500 mW

Maximum Voltages and Currents ( $T_a = 25$  °C)

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

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

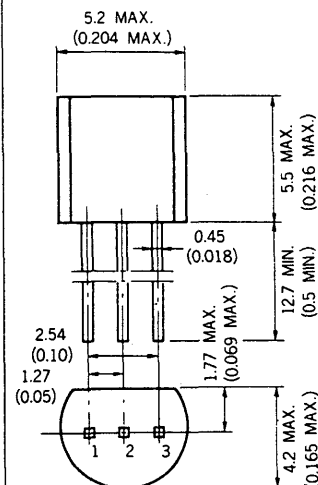
$V_{EBO}$  Emitter to Base Voltage . . . . . 5.0 V

$I_C$  Collector Current . . . . . 50 mA

$I_B$  Base Current . . . . . 10 mA

### PACKAGE DIMENSIONS

in millimeters (inches)



1. EMITTER EIAJ : SC-43B  
2. COLLECTOR JEDEC : TO-92  
3. BASE IEC : PA33

### ELECTRICAL CHARACTERISTICS ( $T_a = 25$ °C)

| SYMBOL        | CHARACTERISTIC               | MIN. | TYP. | MAX. | UNIT | TEST CONDITIONS                            |
|---------------|------------------------------|------|------|------|------|--------------------------------------------|
| $h_{FE1}$     | DC Current Gain              | 150  | 580  |      |      | $V_{CE} = 6.0$ V, $I_C = 0.1$ mA           |
| $h_{FE2}$     | DC Current Gain              | 200  | 600  | 1200 |      | $V_{CE} = 6.0$ V, $I_C = 1.0$ mA           |
| $f_T$         | Gain Bandwidth Product       | 50   | 110  |      | MHz  | $V_{CE} = 6.0$ V, $I_E = -1.0$ mA          |
| $C_{ob}$      | Output Capacitance           |      | 1.6  | 2.5  | 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      | 550  | 590  | 650  | mV   | $V_{CE} = 6.0$ V, $I_C = 1.0$ mA           |
| $V_{BE(sat)}$ | Base Saturation Voltage      |      | 0.73 | 1.0  | V    | $I_C = 10$ mA, $I_B = 1.0$ mA              |
| $V_{CE(sat)}$ | Collector Saturation Voltage |      | 70   | 300  | mV   | $I_C = 10$ mA, $I_B = 1.0$ mA              |

### Classification of $h_{FE2}$

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

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

TYPICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$  unless otherwise noted)

