



*absolute maximum ratings at 25°C case temperature (unless otherwise noted)

| | |
|--|----------------|
| Collector-Base Voltage | -100 V |
| Collector-Emitter Voltage (See Note 1) | -80 V |
| Emitter-Base Voltage | -6 V |
| Continuous Collector Current | -2 A |
| Peak Collector Current (See Note 2) | -5 A |
| Continuous Base Current | -1 A |
| Continuous Emitter Current | -3 A |
| Safe Operating Region at (or below) 100°C Case Temperature | See Figure 7 |
| Continuous Device Dissipation at (or below) 100°C Case Temperature (See Note 3) | 15 W |
| Continuous Device Dissipation at (or below) 25°C Free-Air Temperature (See Note 4) | 1 W |
| Operating Collector Junction Temperature Range | -65°C to 200°C |
| Storage Temperature Range | -65°C to 200°C |
| Lead Temperature 1/8 Inch from Case for 10 Seconds | 260°C |

- NOTE 1. This value applies when the base-emitter diode is open-circuited.
 2. This value applies for $t_p \leq 0.3$ ms, duty cycle $\leq 10\%$.
 3. Derate linearly to 200°C case temperature at the rate of 0.15 W/deg.
 4. Derate linearly to 200°C free-air temperature at the rate of 5.72 mW/deg.

* JEDEC registered data

*electrical characteristics at 25°C case temperature (unless otherwise noted)

| PARAMETER | TEST CONDITIONS | MIN | MAX | UNIT |
|---|--|-----|-------|---------|
| $V_{(BR)CEO}$ Collector-Emitter Breakdown Voltage | $I_C = -30$ mA, $I_B = 0$, See Note 5 | -80 | | V |
| I_{CEO} Collector Cutoff Current | $V_{CE} = -40$ V, $I_B = 0$ | | -50 | μ A |
| I_{CES} Collector Cutoff Current | $V_{CE} = -90$ V, $V_{BE} = 0$ | | -10 | μ A |
| | $V_{CE} = -50$ V, $V_{BE} = 0$, $T_C = 150^\circ$ C | | -500 | μ A |
| I_{EBO} Emitter Cutoff Current | $V_{EB} = -4$ V, $I_C = 0$ | | -1 | μ A |
| | $V_{EB} = -6$ V, $I_C = 0$ | | -100 | μ A |
| h_{FE} Static Forward Current Transfer Ratio | $V_{CE} = -4$ V, $I_C = -1$ A, See Notes 5 and 6 | 30 | 120 | |
| | $V_{CE} = -4$ V, $I_C = -2$ A, See Notes 5 and 6 | 10 | | |
| V_{BE} Base-Emitter Voltage | $V_{CE} = -4$ V, $I_C = -2$ A, See Notes 5 and 6 | | -1.5 | V |
| $V_{CE(sat)}$ Collector-Emitter Saturation Voltage | $I_B = -0.1$ A, $I_C = -1$ A, See Notes 5 and 6 | | -0.45 | V |
| | $I_B = -0.4$ A, $I_C = -2$ A, See Notes 5 and 6 | | -1 | V |
| h_{fe} Small-Signal Common-Emitter Forward Current Transfer Ratio | $V_{CE} = -10$ V, $I_C = -1$ A, $f = 1$ kHz | 30 | | |
| $ h_{fe} $ Small-Signal Common-Emitter Forward Current Transfer Ratio | $V_{CE} = -10$ V, $I_C = -1$ A, $f = 15$ MHz | 2 | | |

- NOTES: 5. These parameters must be measured using pulse techniques. $t_p = 300$ μ s, duty cycle $\leq 2\%$.
 6. These parameters are measured with voltage-sensing contacts separate from the current-carrying contacts.