# SPTECH Silicon NPN Power Transistor          2SC2517
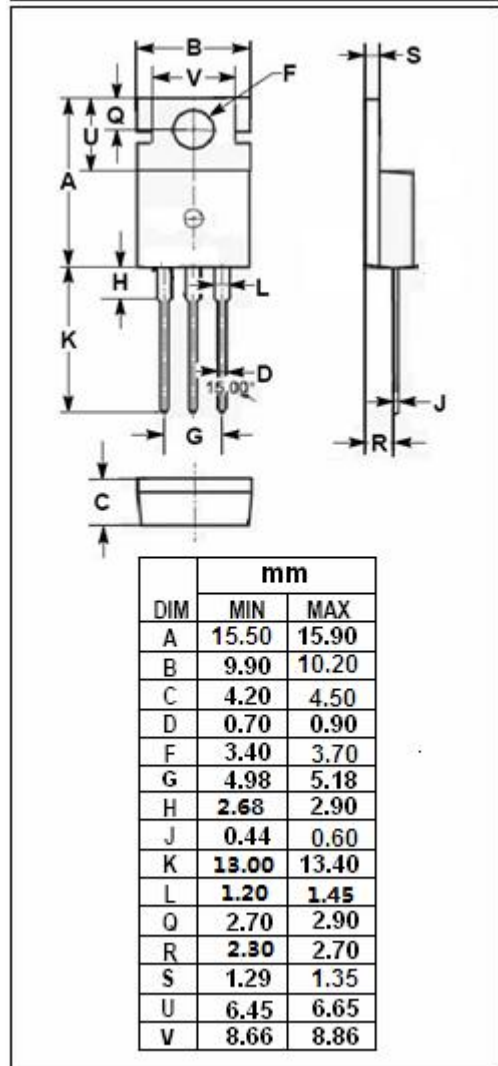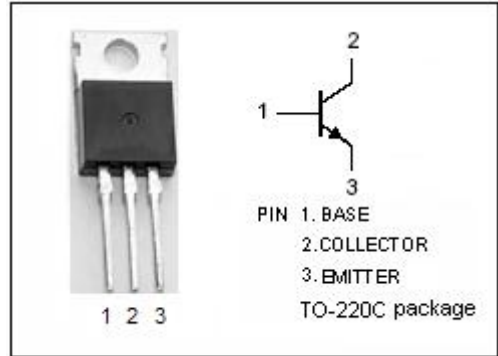
**DESCRIPTION**

· Low Collector Saturation Voltage

· Fast Switching Speed

**APPLICATIONS**

· Designed for high-speed switching,   and is ideal for use as a driver in devices such as switching reglators,DC/DC converters, and high frequency power amplifiers.

PIN 1. BASE
2. COLLECTOR
3. EMITTER
TO-220C package

## ABSOLUTE MAXIMUM RATINGS($T_a$=25℃)

| SYMBOL | PARAMETER | VALUE | UNIT |
|--------|-----------|-------|------|
| $V_{CBO}$ | Collector-Base Voltage | 150 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 100 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 12 | V |
| $I_C$ | Collector Current-Continuous | 5 | A |
| $I_{CM}$ | Collector Current-Peak | 10 | A |
| $I_B$ | Base Current-Continuous | 2.5 | A |
| Pc | Total Power Dissipation @ $T_C$=25℃ | 30 | W |
| $T_J$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature Range | -55~150 | ℃ |

| | mm | |
|-----|------|------|
| DIM | MIN | MAX |
| A | 15.50 | 15.90 |
| B | 9.90 | 10.20 |
| C | 4.20 | 4.50 |
| D | 0.70 | 0.90 |
| F | 3.40 | 3.70 |
| G | 4.98 | 5.18 |
| H | 2.68 | 2.90 |
| J | 0.44 | 0.60 |
| K | 13.00 | 13.40 |
| L | 1.20 | 1.45 |
| Q | 2.70 | 2.90 |
| R | 2.30 | 2.70 |
| S | 1.29 | 1.35 |
| U | 6.45 | 6.65 |
| V | 8.66 | 8.86 |

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### ELECTRICAL CHARACTERISTICS

$T_C$=25℃  unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | MAX | UNIT |
|---|---|---|---|---|---|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C$= 50mA; $I_B$= 0 | 100 | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C$= 3.0A; $I_B$= 0.3A | | 0.6 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C$= 3.0A; $I_B$= 0.3A | | 1.5 | V |
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$= 100V; $I_E$= 0 | | 10 | μA |
| $I_{CER}$ | Collector Cutoff Current | $V_{CE}$= 100V; $R_{BE}$= 51Ω, $T_a$=125℃ | | 1.0 | mA |
| $I_{CEX}$ | Collector Cutoff Current | $V_{CE}$= 100V; $V_{BE(off)}$= -1.5V<br>$V_{CE}$= 100V; $V_{BE(off)}$= -1.5V, $T_a$=125℃ | | 10<br>1.0 | μA<br>mA |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{EB}$= 10V; $I_C$=0 | | 10 | μA |
| $h_{FE-1}$ | DC Current Gain | $I_C$= 0.2A; $V_{CE}$= 5V | 40 | | |
| $h_{FE-2}$ | DC Current Gain | $I_C$= 2A; $V_{CE}$= 5V | 40 | 200 | |

Switching times

| SYMBOL | PARAMETER | CONDITIONS | MIN | MAX | UNIT |
|---|---|---|---|---|---|
| $t_{on}$ | Turn-on Time | $I_C$= 3.0A ,$R_L$= 17Ω ,<br>$I_{B1}$= -$I_{B2}$= 0.3A,$V_{CC}$≈ 50V | | 0.5 | μs |
| $t_{stg}$ | Storage Time | | | 2.5 | μs |
| $t_f$ | Fall Time | | | 0.5 | μs |

◆  **$h_{FE-2}$ Classifications**

| M | L | K |
|---|---|---|
| 40-80 | 60-120 | 100-200 |

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