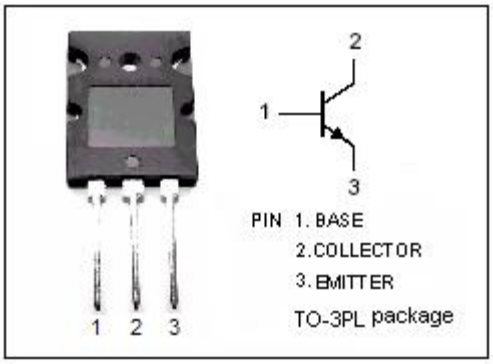
# SPTECH Silicon NPN Power Transistor




## DESCRIPTION

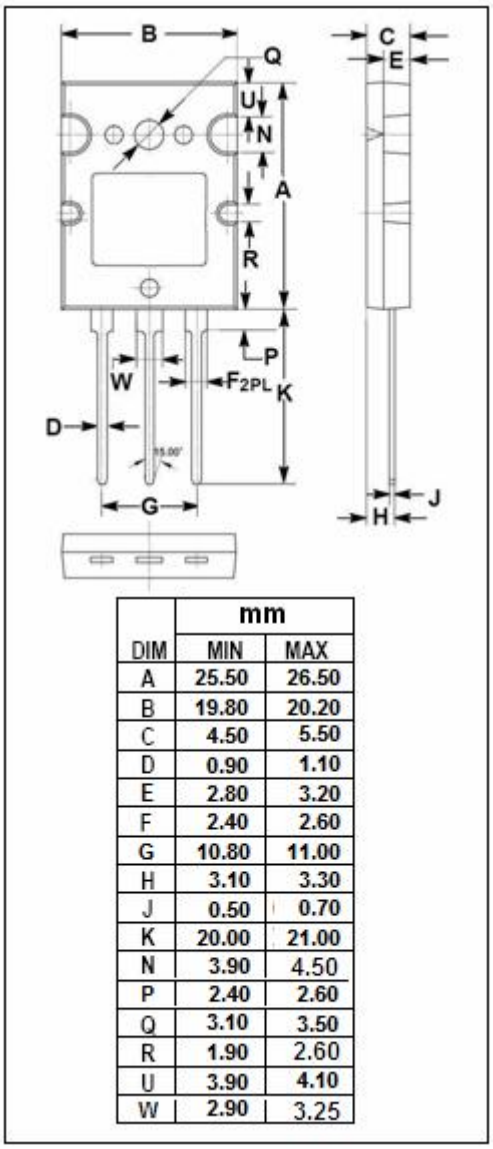
- High Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 800V(Min)
- High Switching Speed

## APPLICATIONS

- High speed and high voltage switching applications.
- Switching regulator applications.
- High speed DC-DC converter applications.

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 900 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 800 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 7 | V |
| $I_C$ | Collector Current-Continuous | 10 | A |
| $I_{CM}$ | Collector Current-Pulse | 15 | A |
| $I_B$ | Base Current-Continuous | 3 | A |
| $P_C$ | Collector Power Dissipation @ $T_C$=25℃ | 150 | W |
| $T_J$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature Range | -55~150 | ℃ |




| DIM | mm MIN | MAX |
|---|---|---|
| A | 25.50 | 26.50 |
| B | 19.80 | 20.20 |
| C | 4.50 | 5.50 |
| D | 0.90 | 1.10 |
| E | 2.80 | 3.20 |
| F | 2.40 | 2.60 |
| G | 10.80 | 11.00 |
| H | 3.10 | 3.30 |
| J | 0.50 | 0.70 |
| K | 20.00 | 21.00 |
| N | 3.90 | 4.50 |
| P | 2.40 | 2.60 |
| Q | 3.10 | 3.50 |
| R | 1.90 | 2.60 |
| U | 3.90 | 4.10 |
| W | 2.90 | 3.25 |

# SPTECH Silicon NPN Power Transistor

## ELECTRICAL CHARACTERISTICS

**$T_C$=25℃ unless otherwise specified**

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C$= 10mA ; $I_B$= 0 | 800 | | | V |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage | $I_C$= 1mA ; $I_E$= 0 | 900 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C$= 5A; $I_B$= 1A | | | 1.0 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C$= 5A; $I_B$= 1A | | | 1.5 | V |
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$= 800V ; $I_E$= 0 | | | 100 | μA |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{EB}$= 7V; $I_C$= 0 | | | 1 | mA |
| $h_{FE-1}$ | DC Current Gain | $I_C$= 10mA ; $V_{CE}$= 5V | 10 | | | |
| $h_{FE-2}$ | DC Current Gain | $I_C$= 5A ; $V_{CE}$= 5V | 10 | | | |
| Switching times | | | | | | |
| $t_r$ | Rise Time | $I_C$= 1A, $I_{B1}$= -$I_{B2}$= 0.4A<br>$R_L$= 400Ω ;$V_{CC}$≈400V<br>$P_W$=20μs;Duty Cycle≤1% | | | 1.0 | μs |
| $t_{stg}$ | Storage Time | | | | 3.0 | μs |
| $t_f$ | Fall Time | | | | 1.0 | μs |