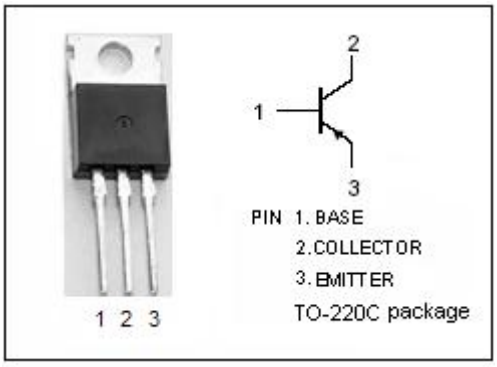
# SPTECH Silicon NPN Power Transistor

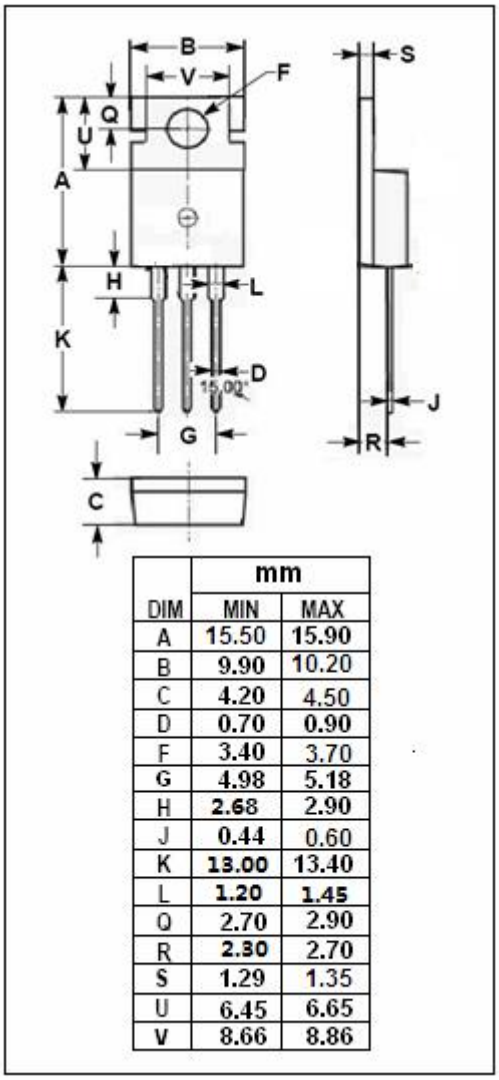



## DESCRIPTION

- Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 80V(Min)
- Good Linearity of $h_{FE}$
- Collector Power Dissipation-
  : $P_C$= 30W(Max)@ $T_C$= 25℃
- Complement to Type 2SB596

## APPLICATIONS

- Designed for power amplifier applications.
- Recommended for 20~25W high fidelity audio frequency amplifier output stage applications.




| DIM | mm 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 |

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 80 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 80 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 5 | V |
| $I_C$ | Collector Current-Continuous | 4 | A |
| $I_B$ | Base Current-Continuous | 0.4 | A |
| $P_C$ | Collector Power Dissipation @ $T_C$=25℃ | 30 | W |
| $T_J$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature Range | -55~150 | ℃ |

# 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 | 80 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C$= 3A; $I_B$= 0.3A | | 0.45 | 1.5 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C$= 3A; $V_{CE}$= 5V | | 1.0 | 1.5 | V |
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$= 80V; $I_E$= 0 | | | 30 | μA |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{EB}$= 5V; $I_C$= 0 | | | 0.1 | mA |
| $h_{FE-1}$ | DC Current Gain | $I_C$= 0.5A; $V_{CE}$= 5V | 40 | | 240 | |
| $h_{FE-2}$ | DC Current Gain | $I_C$= 3A; $V_{CE}$= 5V | 15 | 50 | | |
| $C_{OB}$ | Output Capacitance | $I_E$= 0; $V_{CB}$= 10V; $f_{test}$= 1.0MHz | | 90 | | pF |
| $f_T$ | Current-Gain—Bandwidth Product | $I_C$= 0.5A; $V_{CE}$= 5V | 3 | 8 | | MHz |

◆ **$h_{FE-1}$ Classifications**

| R | O | Y |
|---|---|---|
| 40-80 | 70-140 | 120-240 |