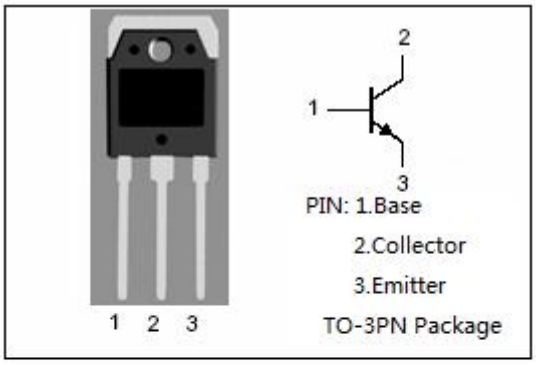
# isc Silicon NPN Power Transistor — BUW52

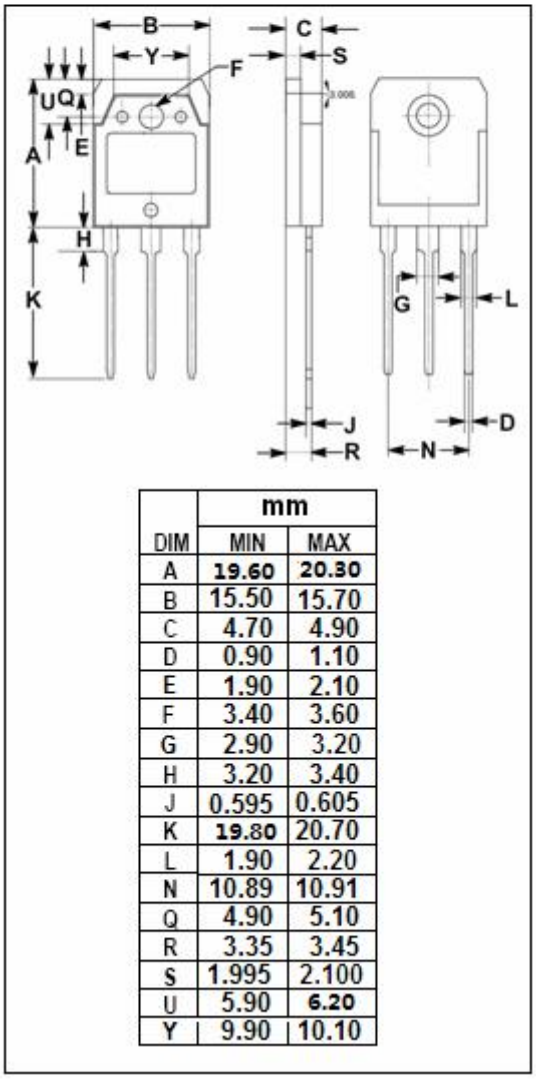
## DESCRIPTION

- High Current Capability
- Fast Switching Speed
- Low Saturation Voltage and High Gain
- Minimum Lot-to-Lot variations for robust device performance and reliable operation




## APPLICATIONS

- Designed for use in general purpose power amplifier applications.




| DIM | mm MIN | MAX |
|---|---|---|
| A | 19.60 | 20.30 |
| B | 15.50 | 15.70 |
| C | 4.70 | 4.90 |
| D | 0.90 | 1.10 |
| E | 1.90 | 2.10 |
| F | 3.40 | 3.60 |
| G | 2.90 | 3.20 |
| H | 3.20 | 3.40 |
| J | 0.595 | 0.605 |
| K | 19.80 | 20.70 |
| L | 1.90 | 2.20 |
| N | 10.89 | 10.91 |
| Q | 4.90 | 5.10 |
| R | 3.35 | 3.45 |
| S | 1.995 | 2.100 |
| U | 5.90 | 6.20 |
| Y | 9.90 | 10.10 |

## Absolute maximum ratings(Ta=25℃)

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CEV}$ | Collector-Emitter Voltage ($V_{BE}$= -1.5V) | 350 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 250 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 7 | V |
| $I_C$ | Collector Current-Continuous | 20 | A |
| $I_{CM}$ | Collector Current-Peak | 30 | A |
| $I_B$ | Base Current-Continuous | 4 | A |
| $I_{BM}$ | Base Current-peak | 6 | A |
| $P_C$ | Collector Power Dissipation @$T_C$=25℃ | 150 | W |
| $T_j$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature Range | -65~150 | ℃ |

## THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---|---|---|---|
| $R_{th\ j\text{-}c}$ | Thermal Resistance,Junction to Case | 1.0 | ℃/W |

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## ELECTRICAL CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C$= 50mA; $I_B$= 0 | 250 | | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage | $I_E$= 50mA; $I_C$= 0 | 7 | | | V |
| $V_{CE(sat)-1}$ | Collector-Emitter Saturation Voltage | $I_C$= 4A; $I_B$= 0.26A | | | 0.8 | V |
| $V_{CE(sat)-2}$ | Collector-Emitter Saturation Voltage | $I_C$= 8A; $I_B$= 0.8A | | | 0.9 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C$= 8A; $I_B$= 0.8A | | | 1.3 | V |
| $I_{CBO}$ | Collector -Base Cutoff Current | $V_{CB}$= 300V; $I_E$= 0<br>$V_{CB}$= 300V; $I_E$= 0;$T_C$=100℃ | | | 0.5<br>2.0 | mA |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{EB}$= 5V; $I_C$= 0 | | | 1.0 | mA |
| Switching times; Resistive Load | | | | | | |
| $t_r$ | Rise Time | $I_C$= 12A; $I_{B1}$= 1.5A; $V_{CC}$= 200V; $V_{BB}$= -5V; $R_{B2}$= 1.7Ω; $t_p$= 30μs | | | 0.6 | μs |
| $t_s$ | Storage Time | | | | 1.6 | μs |
| $t_f$ | Fall Time | | | | 0.3 | μs |

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