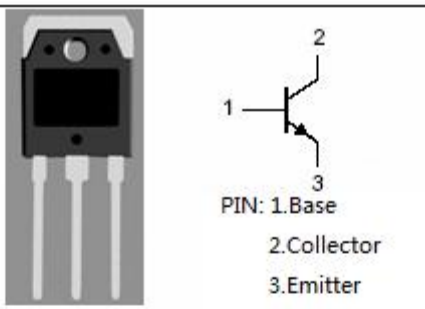
# isc Silicon NPN Power Transistor — BUX98P

## DESCRIPTION

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




## APPLICATIONS

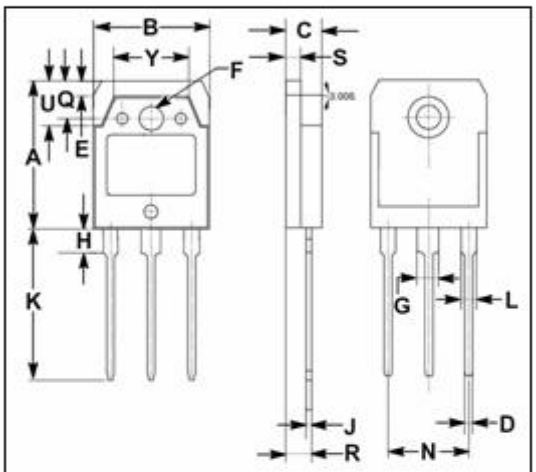
- Switching mode power supplies
- Motor control

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 850 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 450 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 7 | V |
| $I_C$ | Collector Current-Continuous | 30 | A |
| $I_{CM}$ | Collector Current-peak | 60 | A |
| $I_B$ | Base Current-Continuous | 6 | A |
| $I_{BM}$ | Base Current-peak | 10 | A |
| $P_C$ | Collector Power Dissipation @$T_C$=25℃ | 200 | 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 | 0.63 | ℃/W |




| DIM | mm MIN | mm 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 |

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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 | 450 | | | V |
| $V_{CE(sat)}$* | Collector-Emitter Saturation Voltage | $I_C$= 20A ;$I_B$= 4A | | | 0.9 | V |
| $V_{BE(sat)}$* | Base-Emitter Saturation Voltage | $I_C$= 20A ;$I_B$= 4A | | | 1.5 | V |
| $I_{CER}$ | Collector Cutoff Current($R_{BE}$=5Ω) | $V_{CE}$=$V_{CEV}$;<br>$V_{CE}$=$V_{CEV}$;$T_C$=100℃ | | | 0.2<br>1 | mA |
| $I_{CEV}$ | Collector Cutoff Current | $V_{CE}$= $V_{CEV}$; VBE=-1.5V<br>$V_{CE}$= $V_{CEV}$; VBE=-1.5V;TC=100℃ | | | 0.2<br>1 | mA |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{EB}$= 5V; $I_C$= 0 | | | 1 | mA |
| Switching Times | | | | | | |
| $t_S$ | Storage Time | $I_C$= 20A ;$I_{B1}$=-$I_{B2}$= 4A;<br>$V_{CC}$= 50V;$V_{clamp}$ =450V<br>$V_{BB}$=-5V;$R_{BB}$=0.62Ω<br>$L_C$=0.12mH,Tj=100℃ | | | 4.5 | μs |
| $t_f$ | Fall Time | | | | 0.4 | μs |
| $t_c$ | Crossover Time | | | | 0.7 | μs |

*Pulse:pulse duration=300us,duty cycle=1.5%

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