

**isc Silicon NPN Power Transistor**
**BUX33**
**DESCRIPTION**

Collector-Emitter Sustaining Voltage-

 :  $V_{CEO(SUS)} = 400V(\text{Min.})$ 

- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

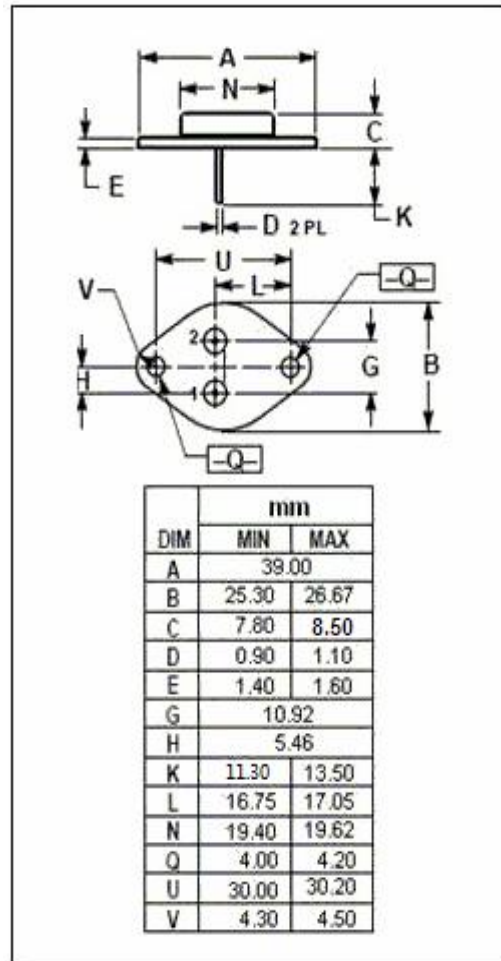
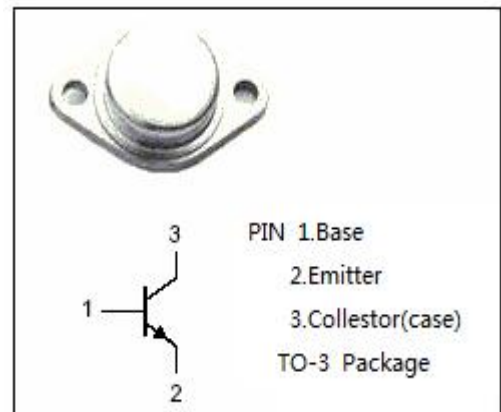
- Converters
- Inverters
- Switching regulators
- Motor controls

**ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )**

| SYMBOL    | PARAMETER   | MAX     | UNIT             |
|-----------|---|---------|------------------|
| $V_{CEV}$ | Collector-Emitter Voltage<br>$V_{BE} = 1.5V$            | 800     | V                |
| $V_{CER}$ | Collector-Emitter Voltage<br>$R_{BE} = 10\ \Omega$      | 800     | V                |
| $V_{CEX}$ | Collector-Emitter Voltage<br>$V_{BE} = -1.5V$           | 450     | V                |
| $V_{CEO}$ | Collector-Emitter Voltage                               | 400     | V                |
| $V_{EBO}$ | Emitter-Base Voltage                                    | 8       | V                |
| $I_C$     | Collector Current-Continuous                            | 12      | A                |
| $I_{CM}$  | Collector Current-Peak                                  | 15      | A                |
| $I_B$     | Base Current  | 4       | A                |
| $P_C$     | Collector Power Dissipation<br>@ $T_C=25^\circ\text{C}$ | 150     | W                |
| $T_j$     | Junction Temperature                                    | 200     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature Range                               | -65~200 | $^\circ\text{C}$ |

**THERMAL CHARACTERISTICS**

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



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**ELECTRICAL CHARACTERISTICS**

 T<sub>c</sub>=25°C unless otherwise specified

| SYMBOL                 | PARAMETER                            | CONDITIONS   | MIN | TYP | MAX        | UNIT |
|------------------------|--------------------------------------|--|-----|-----|------------|------|
| V <sub>CEO(SUS)</sub>  | Collector-Emitter Sustaining Voltage | I <sub>C</sub> = 50mA; I <sub>B</sub> = 0  | 400 |     |            | V    |
| V <sub>CE(sat)-1</sub> | Collector-Emitter Saturation Voltage | I <sub>C</sub> = 8A; I <sub>B</sub> = 2A   |     |     | 1.0        | V    |
| V <sub>CE(sat)-2</sub> | Collector-Emitter Saturation Voltage | I <sub>C</sub> = 12A; I <sub>B</sub> = 3A  |     |     | 4.0        | V    |
| V <sub>BE(sat)</sub>   | Base-Emitter Saturation Voltage      | I <sub>C</sub> = 8A; I <sub>B</sub> = 2A   |     |     | 1.3        | V    |
| I <sub>CBO</sub>       | Collector Cutoff Current             | V <sub>CB</sub> =800V; I <sub>E</sub> = 0<br>V <sub>CB</sub> =800V; I <sub>E</sub> = 0; T <sub>C</sub> = 100°C |     |     | 0.1<br>1.0 | mA   |
| I <sub>EBO</sub>       | Emitter Cutoff Current               | V <sub>EB</sub> = 8V; I <sub>C</sub> = 0   |     |     | 2.0        | mA   |
| h <sub>FE</sub>        | DC Current Gain                      | I <sub>C</sub> = 8A; V <sub>CE</sub> = 3V  | 6   |     | 40         |      |

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