

isc Silicon NPN Power Transistor

BUW87

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 150V(\text{Min})$
- High Switching Speed

APPLICATIONS

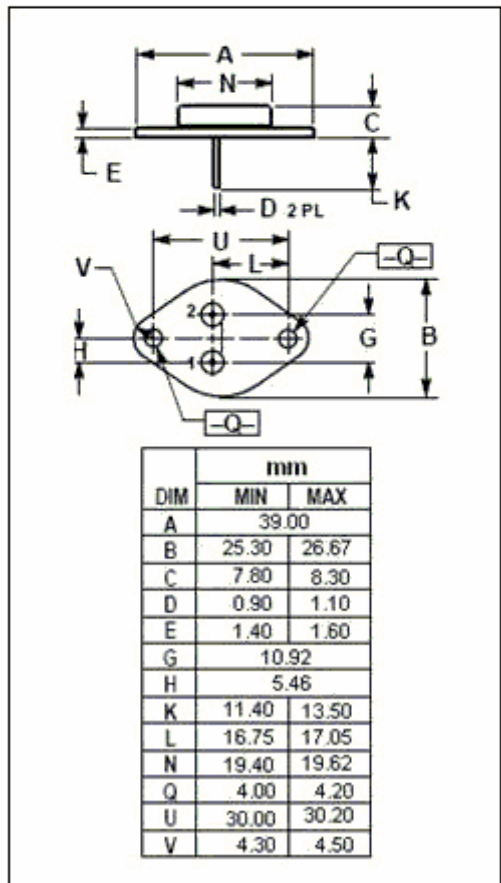
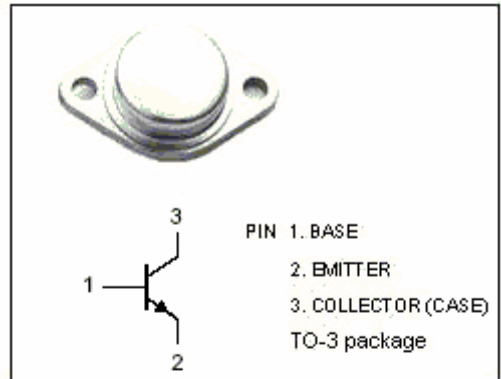
- Designed for use in converters, inverters, switching regulators and switching control amplifiers.

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|--|---------|------------------|
| V_{CBO} | Collector-Base Voltage | 300 | V |
| V_{CES} | Collector-Emitter Voltage $V_{BE}=0$ | 300 | V |
| V_{CEO} | Collector-Emitter Voltage | 150 | V |
| V_{EBO} | Emitter-Base Voltage | 6 | V |
| I_C | Collector Current-Continuous | 10 | A |
| I_{CM} | Collector Current-Peak | 15 | A |
| I_B | Base Current-Continuous | 2 | A |
| I_{BM} | Base Current-Peak | 3 | A |
| I_E | Emitter Current-Continuous | 11 | A |
| I_{EM} | Emitter Current-Peak | 15 | A |
| P_C | Collector Power Dissipation @ $T_C=25^\circ\text{C}$ | 62.5 | 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 | 2.8 | $^\circ\text{C/W}$ |



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ELECTRICAL CHARACTERISTICS

 $T_C=25^\circ\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|-----------------|--------------------------------------|---|-----|------|--------|------|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C=0.1\text{A}; I_B=0; L=25\text{mH}$ | 150 | | | V |
| $V_{CE(sat)-1}$ | Collector-Emitter Saturation Voltage | $I_C=7\text{A}; I_B=0.7\text{A}$ | | | 1.0 | V |
| $V_{CE(sat)-2}$ | Collector-Emitter Saturation Voltage | $I_C=4\text{A}; I_B=0.4\text{A}$ | | | 0.65 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C=7\text{A}; I_B=0.7\text{A}$ | | | 1.6 | V |
| I_{CES} | Collector Cutoff Current | $V_{CE}=V_{CBO}; V_{BE}=0$ $V_{CE}=V_{CBO}; V_{BE}=0; T_J=150^\circ\text{C}$ | | | 1 2 | mA |
| h_{FE} | DC Current Gain | $I_C=4\text{A}; V_{CE}=5\text{V}$ | 20 | | | |
| f_T | Current-Gain—Bandwidth Product | $I_C=0.5\text{A}; V_{CE}=5\text{V}; f_{test}=5\text{MHz}$ | | 50 | | MHz |

Switching Times; Resistive Load

| | | | | | | |
|----------|--------------|--|--|------|-----|---------------|
| t_{on} | Turn-On Time | $I_C=7\text{A}; I_{B1}=-I_{B2}=0.7\text{A}; V_{CC}=75\text{V}$ | | 0.25 | 0.4 | μs |
| t_s | Storage Time | | | 0.7 | 1.3 | μs |
| t_f | Fall Time | | | 0.15 | 0.3 | μs |