

Silicon NPN Power Transistor

BUV25

DESCRIPTION

- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 0.6V$ (Max.) @ $I_C = 6A$
- High Power Dissipation
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 500V$ (Min.)

APPLICATIONS

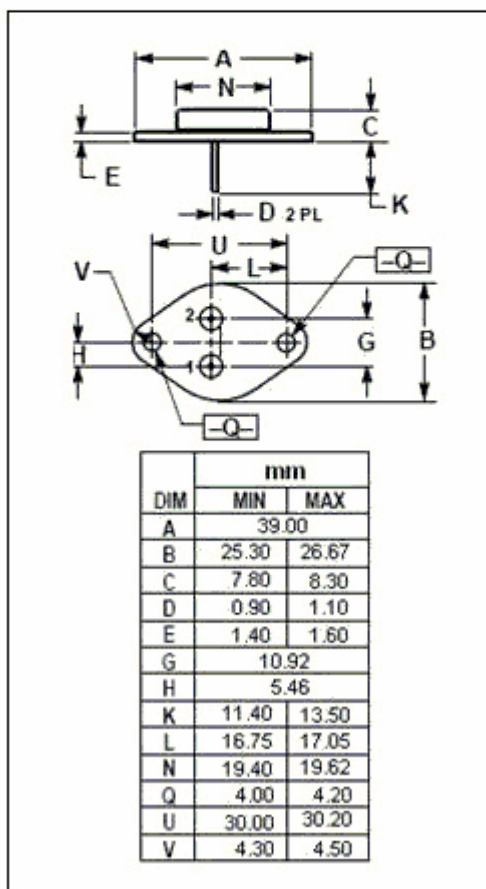
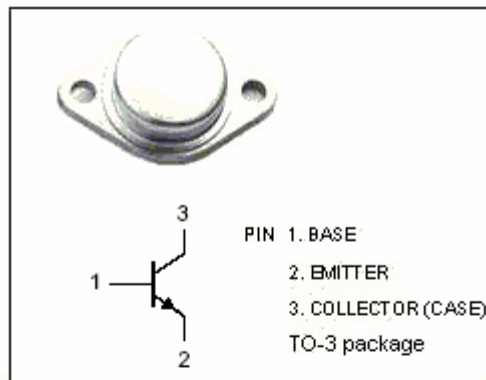
- Designed for use in power switching applications in military and industrial equipments.

Absolute maximum ratings($T_a = 25^\circ C$)

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------|
| V_{CBO} | Collector-Base Voltage | 500 | V |
| V_{CER} | Collector-Emitter Voltage $R_{BE} = 100$ | 500 | V |
| V_{CEX} | Collector-Emitter Voltage $V_{BE} = -1.5V$ | 500 | V |
| V_{CEO} | Collector-Emitter Voltage | 500 | V |
| V_{EBO} | Emitter-Base Voltage | 7 | V |
| I_C | Collector Current-Continuous | 15 | A |
| I_{CM} | Collector Current-Peak | 20 | A |
| I_B | Base Current-Continuous | 3 | A |
| P_C | Collector Power Dissipation @ $T_C = 25$ | 250 | W |
| T_j | Junction Temperature | 200 | |
| T_{stg} | Storage Temperature Range | -65~200 | |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|--------------|--------------------------------------|-----|------|
| $R_{th j-c}$ | Thermal Resistance, Junction to Case | 0.7 | /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 = 0.2A ; L= 25mH | 500 | | | 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 = 0.8A | | | 0.6 | V |
| V _{CE(sat)-2} | Collector-Emitter Saturation Voltage | I _C = 8A ; I _B = 1.6A | | | 1.0 | V |
| V _{BE(sat)} | Base-Emitter Saturation Voltage | I _C = 8A ; I _B = 1.6A | | | 1.5 | V |
| I _{CEO} | Collector Cutoff Current | V _{CE} = 400V; I _B = 0 | | | 3.0 | mA |
| I _{CEX} | Collector Cutoff Current | V _{CE} = V _{CEX} ; V _{BE} = -1.5V V _{CE} = V _{CEX} ; V _{BE} = -1.5V; T _C =125 | | | 3.0 12 | mA |
| I _{EBO} | Emitter Cutoff Current | V _{EB} = 5V; I _C = 0 | | | 1.0 | mA |
| h _{FE-1} | DC Current Gain | I _C = 4A ; V _{CE} = 4V | 15 | | 60 | |
| h _{FE-2} | DC Current Gain | I _C = 8A ; V _{CE} = 4V | 8 | | | |
| f _T | Current-Gain—Bandwidth Product | I _C = 2A; V _{CE} = 15V, f _{test} = 10MHz | 8 | | | MHz |

Switching Times

| | | | | | | |
|-----------------|--------------|--|--|--|-----|----|
| t _{on} | Turn-on Time | I _C = 8A ; I _{B1} =-I _{B2} = 1.6A | | | 1.8 | μs |
| t _s | Storage Time | | | | 5.0 | μs |
| t _f | Fall Time | | | | 1.6 | μs |