

Silicon NPN Power Transistors

BUV47 BUV47B

DESCRIPTION

- With TO-3PN package.
- High voltage.
- Very high switching speed.

APPLICATIONS

- Suited for 220V switchmode power supply, DC and AC motor control.

PINNING

| PIN | DESCRIPTION |
|-----|--------------------------------------|
| 1 | Base |
| 2 | Collector;connected to mounting base |
| 3 | Emitter |

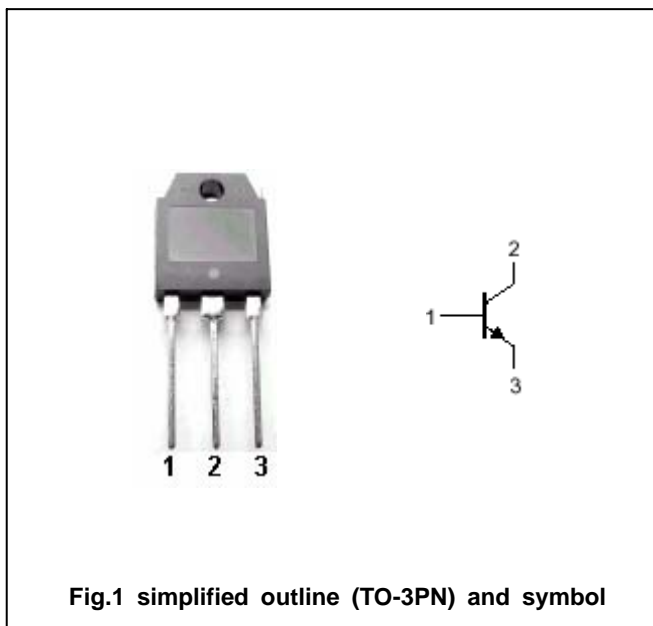


Fig.1 simplified outline (TO-3PN) and symbol

Absolute maximum ratings (Ta=25)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|-----------------------------|--------------------|---------|------|
| V _{CBO} | Collector-base voltage | Open emitter | 850 | V |
| V _{CEO} | Collector-emitter voltage | Open base | 400 | V |
| V _{EBO} | Emitter-base voltage | Open collector | 7 | V |
| I _C | Collector current | | 9 | A |
| I _{CM} | Collector current-peak | | 15 | A |
| I _B | Base current | | 3 | A |
| P _C | Collector power dissipation | T _C =25 | 90 | W |
| T _j | Junction temperature | | -65~150 | |
| T _{stg} | Storage temperature | | -65~150 | |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|------------------------|----------------------------------|------|------|
| R _{th j-case} | Thermal resistance junction case | 1.38 | /W |

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CHARACTERISTICS

T_j=25 unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|-----------------------|--------------------------------------|---|--|------|------|------|
| V _{(BR)EBO} | Emitter-base breakdown voltage | I _E =10mA; I _C =0 | 10 | | | V |
| V _{CEO(SUS)} | Collector-emitter sustaining voltage | I _C =0.2A; I _B =0; L=25mH | 400 | | | V |
| V _{CEsat-1} | Collector-emitter saturation voltage | BUV47 | I _C =5A; I _B =1A | | 1.5 | V |
| | | BUV47B | I _C =6A; I _B =1.2A | | | |
| V _{CEsat-2} | Collector-emitter saturation voltage | BUV47 | I _C =8A; I _B =2.5A | | 3.0 | V |
| | | BUV47B | I _C =9A; I _B =3A | | | |
| V _{BEsat} | Base-emitter saturation voltage | BUV47 | I _C =5A; I _B =1A | | 1.6 | V |
| | | BUV47B | I _C =6A; I _B =1.2A | | | |
| I _{CEx} | Collector cut-off current | V _{CE} =850V; V _{BE} =-2.5V | | | 0.15 | mA |
| I _{EBO} | Emitter cut-off current | V _{EB} =5V; I _C =0 | | | 1.0 | mA |
| h _{FE} | DC current gain | I _C =10A; V _{CE} =5V | 7 | 10 | 14 | |

Switching times :

| | | | | | | |
|-----------------|--------------|--|--|--|-----|----|
| t _{on} | Turn-on time | I _C =5A I _{B1} =- I _{B2} =1.0A V _{CC} =150V | | | 1.0 | μs |
| t _s | Storage time | | | | 3.0 | μs |
| t _f | Fall time | | | | 0.8 | μs |

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PACKAGE OUTLINE

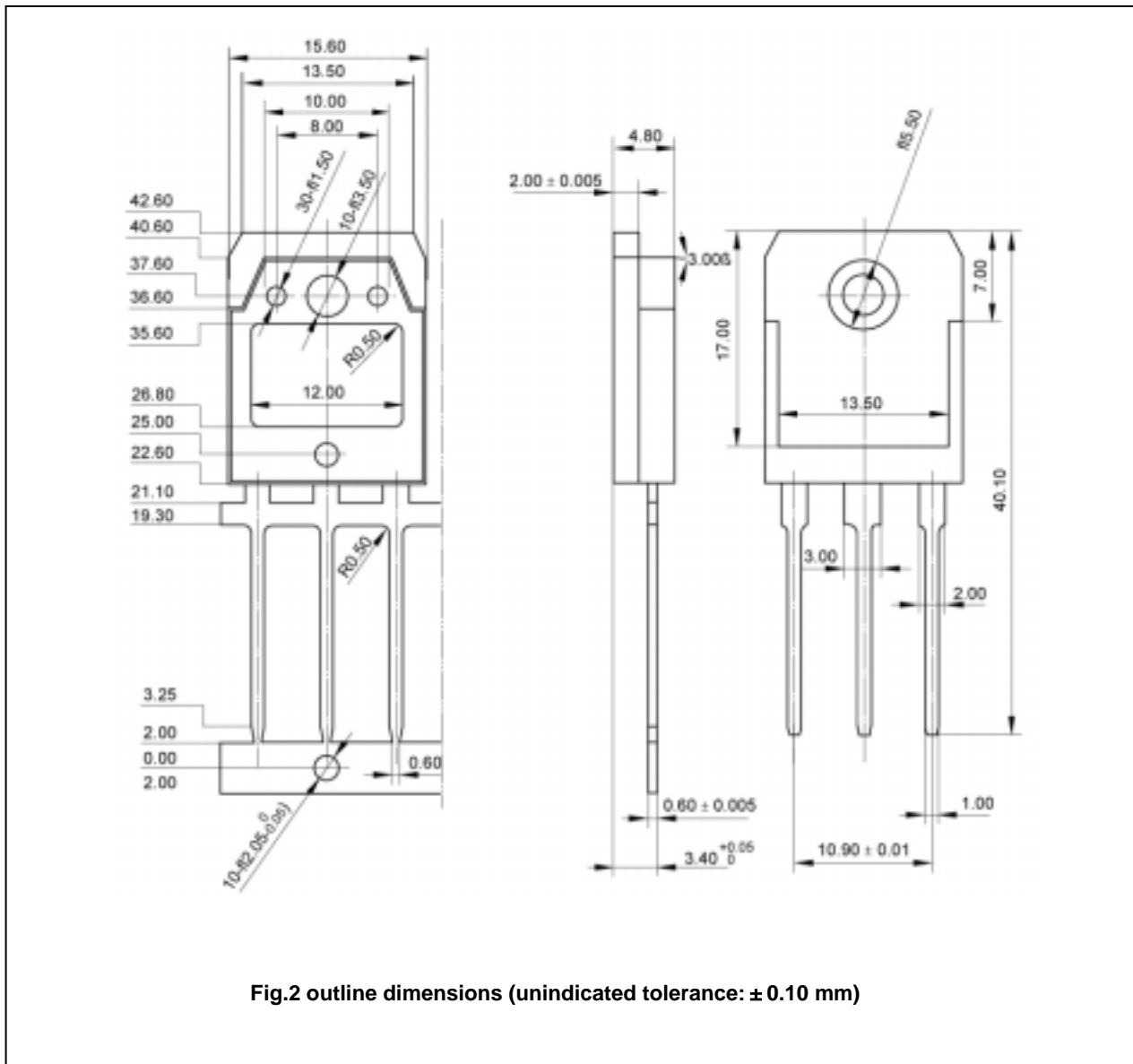


Fig.2 outline dimensions (unindicated tolerance: ± 0.10 mm)