

SavantIC Semiconductor

Product Specification

Silicon NPN Power Transistors

BUX48 BUX48A

DESCRIPTION

- With TO-3 package
- High voltage capability
- High current capability
- Fast switching speed

APPLICATIONS

- Switch mode power supplies
- Transistor low power converters

PINNING (See Fig.2)

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | Base |
| 2 | Emitter |
| 3 | Collector |

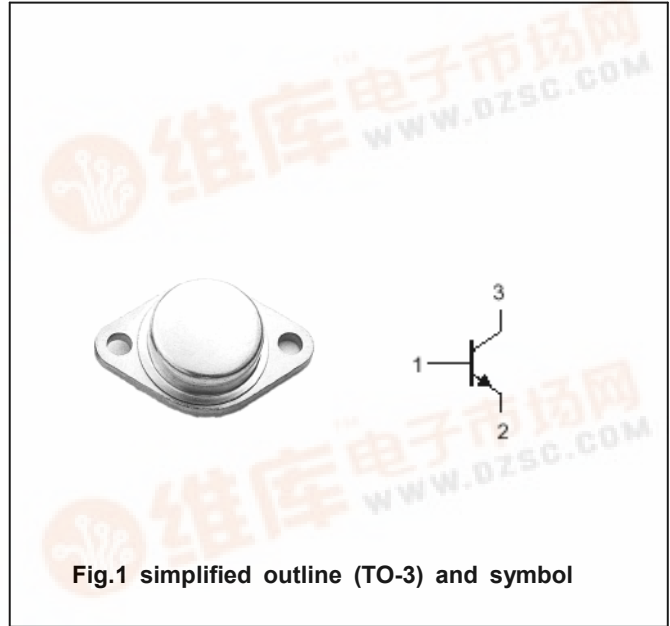


Fig.1 simplified outline (TO-3) and symbol

Absolute maximum ratings(Ta=25°C)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|---------------------------|----------------------|---------|------|
| V _{CBO} | Collector-base voltage | BUX48 | 850 | V |
| | | BUX48A | 1000 | |
| V _{CEO} | Collector-emitter voltage | BUX48 | 400 | V |
| | | BUX48A | 450 | |
| V _{EBO} | Emitter-base voltage | Open collector | 7 | V |
| I _C | Collector current | | 15 | A |
| I _{CM} | Collector current-peak | | 30 | A |
| I _B | Base current | | 4 | A |
| I _{BM} | Base current-peak | | 20 | A |
| P _T | Total power dissipation | T _C =25°C | 175 | W |
| T _j | Junction temperature | | 200 | °C |
| T _{stg} | Storage temperature | | -65~200 | °C |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------------|--|-----|------|
| R _{th j-c} | Thermal resistance from junction to case | 1.0 | °C/W |

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CHARACTERISTICS

T_j=25°C unless otherwise specified

| SYMBOL | PARAMETER | | CONDITIONS | MIN | TYP. | MAX | UNIT |
|-----------------------|--|--------|--|-----|------|----------|------|
| V _{CEO(SUS)} | Collector-emitter sustaining voltage | BUX48 | I _C =0.2A ; L=25mH | 400 | | | V |
| | | BUX48A | | 450 | | | |
| V _{(BR)EBO} | Emitter-base breakdown voltage | | I _E =50mA; I _C =0 | 7 | | 30 | V |
| V _{CEsat-1} | Collector-emitter saturation voltage | BUX48 | I _C =10A; I _B =2A | | | 1.5 | V |
| | | BUX48A | I _C =8A ; I _B =1.6A | | | | |
| V _{CEsat-2} | Collector-emitter saturation voltage | BUX48 | I _C =15A ; I _B =4A | | | 3.5 | V |
| | | BUX48A | I _C =12A ; I _B =2.4A | | | 5.0 | |
| V _{CEsat-3} | Collector-emitter saturation voltage for BUX48 | | I _C =15A ; I _B =3A | | | 5.0 | V |
| V _{BEsat} | Base-emitter saturation voltage | BUX48 | I _C =10A ; I _B =2A | | | 1.6 | V |
| | | BUX48A | I _C =8A ; I _B =1.6A | | | | |
| I _{CER} | Collector cut-off current | | V _{CE} =rated V _{CE} ; R _{BE} =10Ω T _C =125°C | | | 0.5 4 | mA |
| I _{CES} | Collector cut-off current | | V _{CE} =rated V _{CE} ; V _{BE} =0 T _C =125°C | | | 0.2 2 | mA |
| I _{EBO} | Emitter cut-off current | | V _{EB} =5V; I _C =0 | | | 1 | mA |
| h _{FE} | DC current gain | | I _C =1A ; V _{CE} =5V | 15 | | 50 | |

Switching times resistive load

| | | | | | | |
|-----------------|--------------|--|--|--|-----|----|
| t _{on} | Turn-on time | for BUX48 I _C =10A ; I _{B1} =- I _{B2} =2A; V _{CC} =150V for BUX48A I _C =8A ; I _{B1} =- I _{B2} =1.6A; 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

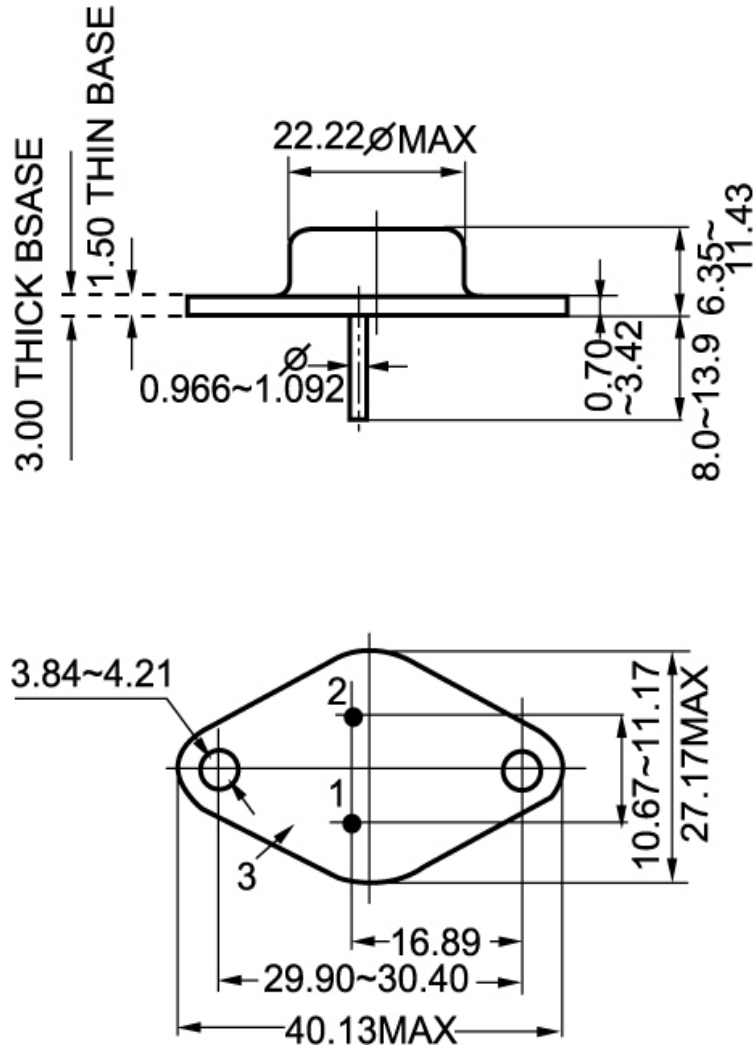


Fig.2 Outline dimensions