# Silicon NPN Power Transistors BUX98 BUX98A

## DESCRIPTION

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

## APPLICATIONS

- High frequency and efficiency converters
- Linear and switching industrial equipment

**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℃)

| SYMBOL | PARAMETER | | CONDITIONS | VALUE | UNIT |
|---|---|---|---|---|---|
| $V_{CBO}$ | Collector-base voltage | BUX98 | Open emitter | 850 | V |
| | | BUX98A | | 1000 | |
| $V_{CEO}$ | Collector-emitter voltage | BUX98 | Open base | 400 | V |
| | | BUX98A | | 450 | |
| $V_{EBO}$ | Emitter-base voltage | | Open collector | 7 | V |
| $I_C$ | Collector current | | | 30 | A |
| $I_{CM}$ | Collector current-peak ( tp <5 ms ) | | | 60 | A |
| $I_B$ | Base current | | | 8 | A |
| $I_{BM}$ | Base current-peak ( tp <5 ms ) | | | 30 | A |
| $P_T$ | Total power dissipation | | $T_C$<25℃ | 250 | W |
| $T_j$ | Junction temperature | | | 200 | ℃ |
| $T_{stg}$ | Storage temperature | | | -65~200 | ℃ |

## THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---|---|---|---|
| $R_{th\ j\text{-}c}$ | Thermal resistance from junction to case | 0.7 | ℃/W |

## CHARACTERISTICS

**Tj=25℃ unless otherwise specified**

| SYMBOL | PARAMETER | | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|---|
| $V_{CEO(SUS)}$ | Collector-emitter sustaining voltage | BUX98 | $I_C$=0.2A ; $I_B$=0 | 400 | | | V |
| | | BUX98A | | 450 | | | |
| $V_{CER(SUS)}$ | Collector-emitter sustaining voltage | BUX98 | $I_C$=1A; L=2mH | 850 | | | V |
| | | BUX98A | | 1000 | | | |
| $V_{CEsat-1}$ | Collector-emitter saturation voltage | BUX98 | $I_C$=20A ;$I_B$=4A | | | 1.5 | V |
| | | BUX98A | $I_C$=16A ;$I_B$=3.2A | | | | |
| $V_{CEsat-2}$ | Collector-emitter saturation voltage for BUX98A | | $I_C$=24A ;$I_B$=5A | | | 5.0 | V |
| $V_{BEsat}$ | Base-emitter saturation voltage | BUX98 | $I_C$=20A ;$I_B$=4A | | | 1.6 | V |
| | | BUX98A | $I_C$=16A ;$I_B$=3.2A | | | | |
| $I_{CES}$ | Collector cut-off current | | $V_{CE}$=$V_{CES}$; $V_{BE}$=0<br>$T_C$=125℃ | | | 0.4<br>4 | mA |
| $I_{CEO}$ | Collector cut-off current | | $V_{CE}$=$V_{CEO}$; $I_B$=0 | | | 2 | mA |
| $I_{EBO}$ | Emitter cut-off current | | $V_{EB}$=5V; $I_C$=0 | | | 2 | mA |
| $h_{FE}$ | DC current gain | | $I_C$=1A ; $V_{CE}$=5V | 15 | | 50 | |

Switching times

| | | | | | | |
|---|---|---|---|---|---|---|
| $t_{on}$ | Turn-on time | for BUX98<br>$I_C$=20A ;$I_{B1}$=-$I_{B2}$=4A; $V_{CC}$=150V<br><br>for BUX98A<br>$I_C$=16A ;$I_{B1}$=-$I_{B2}$=3.2A; $V_{CC}$=150V | | | 1.0 | μs |
| $t_s$ | Storage time | | | | 3.0 | μs |
| $t_f$ | Fall time | | | | 0.8 | μs |

**PACKAGE OUTLINE**

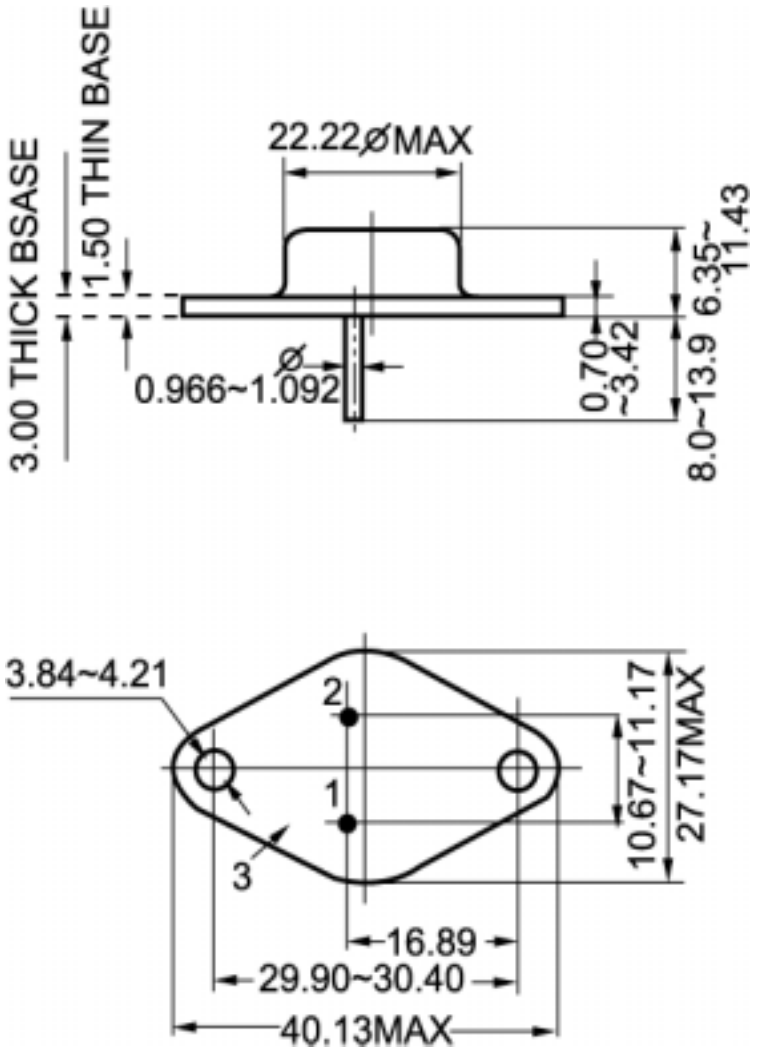


**Fig.2 Outline dimensions**