# Silicon NPN Power Transistors BUX47A

## DESCRIPTION

- With TO-3 package
- High voltage,high speed

## APPLICATIONS

- Intended for high voltage,fast switching applications

**PINNING(see fig.2)**

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


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

## Absolute maximum ratings(Ta=℃)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---|---|---|---|---|
| $V_{CBO}$ | Collector-base voltage | Open emitter | 1000 | V |
| $V_{CEO}$ | Collector-emitter voltage | Open base | 450 | V |
| $V_{EBO}$ | Emitter-base voltage | Open collector | 7 | V |
| $I_C$ | Collector current | | 9 | A |
| $I_{CM}$ | Collector current-peak | | 15 | A |
| $I_B$ | Bast current | | 8 | A |
| $I_{BM}$ | Bast current-peak | | 10 | A |
| $P_T$ | Total power dissipation | $T_C$=25℃ | 125 | W |
| $T_j$ | Junction temperature | | 175 | ℃ |
| $T_{stg}$ | Storage temperature | | -65~175 | ℃ |



## THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---|---|---|---|
| $R_{th\ j\text{-}C}$ | Thermal resistance junction to case | 1.2 | ℃/W |

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## CHARACTERISTICS

**Tj=25℃ unless otherwise specified**

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{CEO(SUS)}$ | Collector-emitter sustaining voltage | $I_C$=0.2A; $I_B$=0; | 450 | | | V |
| $V_{(BR)EBO}$ | Emitter-base breakdown voltage | $I_E$=50mA; $I_C$=0; | 7 | | 30 | V |
| $V_{CEsat-1}$ | Collector-emitter saturation voltage | $I_C$=5A;$I_B$=1 A | | | 1.5 | V |
| $V_{CEsat-2}$ | Collector-emitter saturation voltage | $I_C$=8A;$I_B$=2.5A | | | 3 | V |
| $V_{BEsat}$ | Base-emitter saturation voltage | $I_C$=5A;$I_B$=1 A | | | 1.6 | V |
| $I_{CEV}$ | Collector cut-off current | $V_{CE}$=850V;$V_{BE}$=-2.5V<br>$T_C$=125℃ | | | 0.15<br>1.5 | 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 | | | | | | |
| $T_{on}$ | Turn-on time | $I_C$=5A;$I_{B1}$=-$I_{B2}$=1A;<br>$V_{CC}$=150V | | | 0.7 | μs |
| $t_s$ | Storage time | | | | 3 | μs |
| $t_f$ | Fall time | | | | 0.8 | μs |

**PACKAGE OUTLINE**

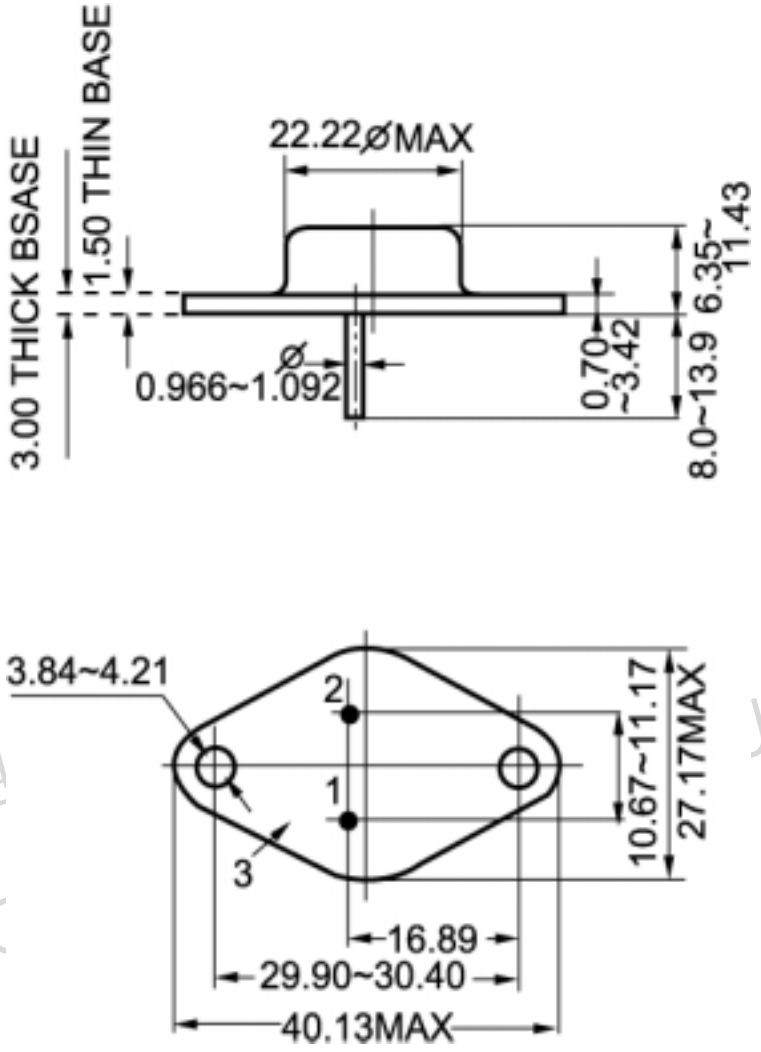


**Fig.2 Outline dimensions**