

## Silicon NPN Power Transistors

## BUX48C

## DESCRIPTION

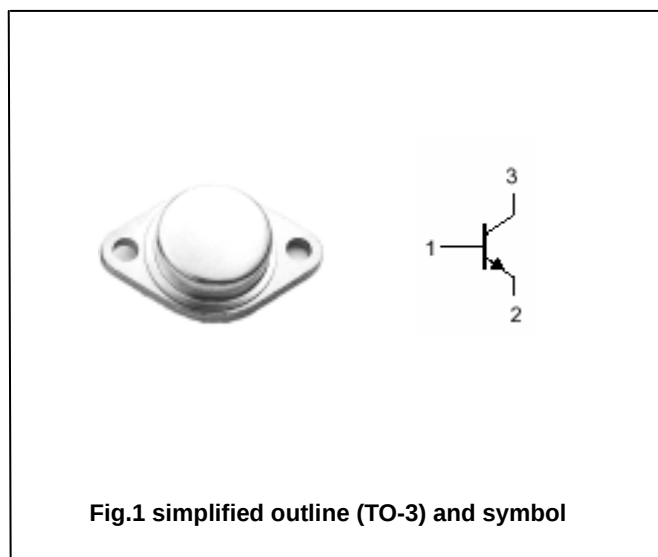
- With TO-3 package
- High voltage
- Fast switching speed

## APPLICATIONS

- Linear and switching industrial equipment.

## PINNING(see fig.2)

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

Absolute maximum ratings( $T_a = \quad$ )

| SYMBOL    | PARAMETER                              | CONDITIONS     | VALUE   | UNIT |
|-----------|----------------------------------------|----------------|---------|------|
| $V_{CBO}$ | Collector-base voltage                 | Open emitter   | 1200    | V    |
| $V_{CEO}$ | Collector-emitter voltage              | Open base      | 700     | V    |
| $V_{EBO}$ | Emitter-base voltage                   | Open collector | 7       | V    |
| $I_C$     | Collector current                      |                | 15      | A    |
| $I_{CM}$  | Collector current-peak ( $t_p < 5ms$ ) |                | 30      | A    |
| $I_B$     | Base current                           |                | 4       | A    |
| $I_{BM}$  | Base current-peak                      |                | 20      | A    |
| $P_T$     | Total power dissipation                | $T_C = 25$     | 175     | W    |
| $T_j$     | Junction temperature                   |                | 200     |      |
| $T_{stg}$ | Storage temperature                    |                | -65~200 |      |

## THERMAL CHARACTERISTICS

| SYMBOL       | PARAMETER                           | MAX | UNIT |
|--------------|-------------------------------------|-----|------|
| $R_{th j-c}$ | Thermal resistance junction to case | 1.0 | /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 | $I_C=100mA; I_B=0;$                    | 700 |      |            | V    |
| $V_{(BR)EBO}$  | Emitter-base breakdown voltage       | $I_E=50mA; I_C=0;$                     | 7   |      | 30         | V    |
| $V_{CEsat-1}$  | Collector-emitter saturation voltage | $I_C=6A; I_B=1.5A$                     |     |      | 1.5        | V    |
| $V_{CEsat-2}$  | Collector-emitter saturation voltage | $I_C=10A; I_B=4A$                      |     |      | 3          | V    |
| $V_{BEsat-1}$  | Base-emitter saturation voltage      | $I_C=6A; I_B=1.5A$                     |     |      | 1.5        | V    |
| $V_{BEsat-2}$  | Base-emitter saturation voltage      | $I_C=10A; I_B=4A$                      |     |      | 2          | V    |
| $I_{CES}$      | Collector cut-off current            | $V_{CE}=1200V; V_{BE}=-0$<br>$T_C=125$ |     |      | 0.5<br>3.0 | mA   |
| $I_{CEO}$      | Collector cut-off current            | $V_{CE}=700V; I_B=0$                   |     |      | 1          | mA   |
| $I_{EBO}$      | Emitter cut-off current              | $V_{EB}=6V; I_C=0$                     |     |      | 1          | mA   |
| $h_{FE}$       | DC current gain                      | $I_C=1A; V_{CE}=5V$                    | 15  |      | 50         |      |

## Switching times

|          |              |                                                 |  |     |     |         |
|----------|--------------|-------------------------------------------------|--|-----|-----|---------|
| $t_{on}$ | Turn-on time | $I_C=6A; I_{B1}=-I_{B2}=1.5A;$<br>$V_{CC}=250V$ |  | 0.5 | 1   | $\mu s$ |
| $t_s$    | Storage time |                                                 |  | 1.5 | 3   | $\mu s$ |
| $t_f$    | Fall time    |                                                 |  | 0.2 | 0.7 | $\mu s$ |

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PACKAGE OUTLINE

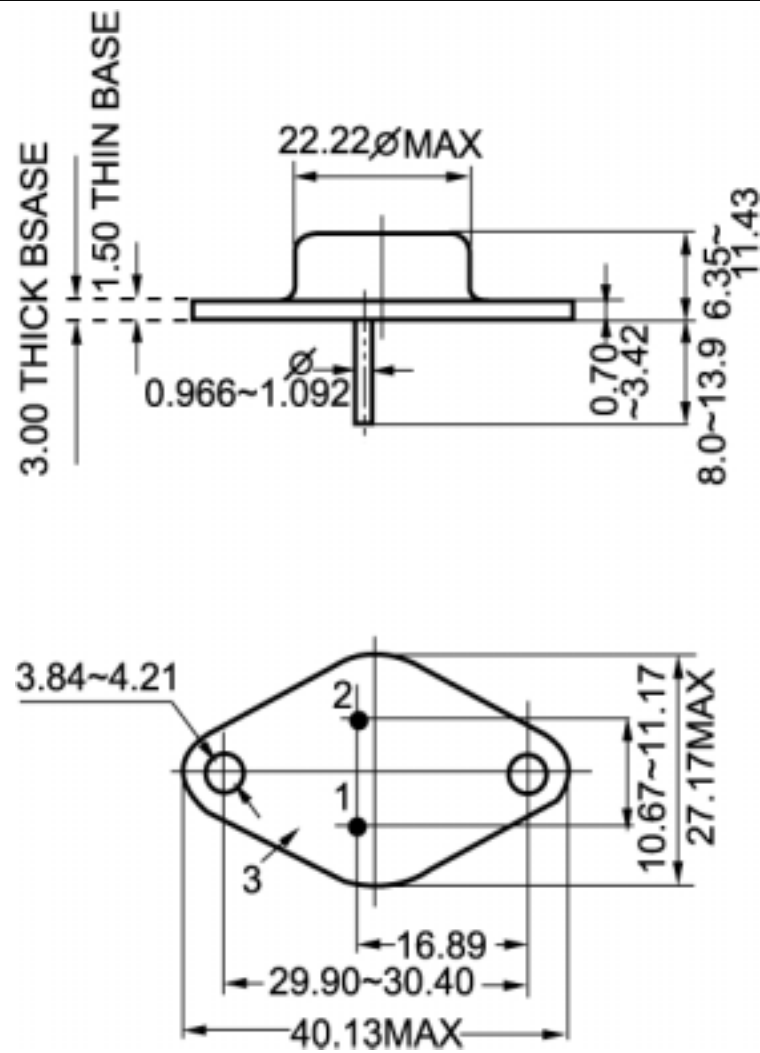


Fig.2 Outline dimensions