

Silicon NPN Power Transistors

BUH517

DESCRIPTION

- With TO-3PML package
- High voltage,high speed
- Low collector saturation voltage

APPLICATIONS

- Horizontal deflection stage in standard and high resolution displays for TV's and monitors.
- Switching power supplies for TV's and monitors.

PINNING

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

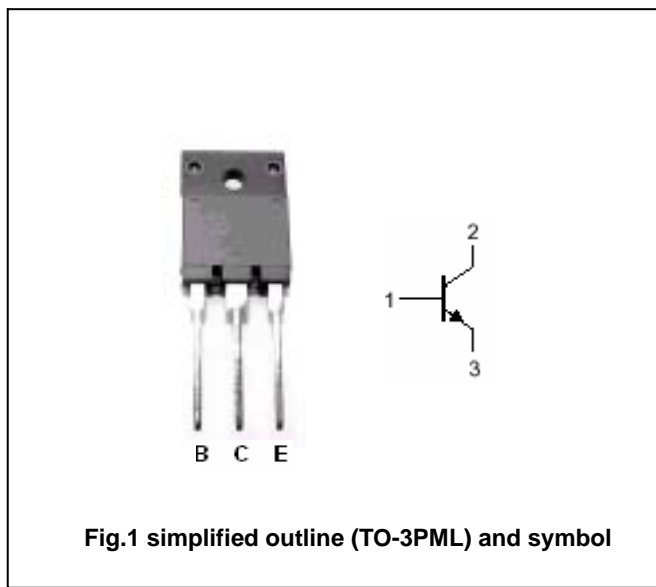


Fig.1 simplified outline (TO-3PML) and symbol

Absolute maximum ratings(Ta=25 )

| SYMBOL    | PARAMETER                      | CONDITIONS     | VALUE   | UNIT |
|-----------|--------------------------------|----------------|---------|------|
| $V_{CBO}$ | Collector-base voltage         | Open emitter   | 1700    | V    |
| $V_{CEO}$ | Collector-emitter voltage      | Open base      | 700     | V    |
| $V_{EBO}$ | Emitter-base voltage           | Open collector | 10      | V    |
| $I_C$     | Collector current (DC)         |                | 8       | A    |
| $I_{CM}$  | Collector current (Pulse)      |                | 15      | A    |
| $I_B$     | Base current (DC)              |                | 5       | A    |
| $I_{BM}$  | Base current (Pulse)           |                | 8       | A    |
| $P_{tot}$ | Total power dissipation        | $T_C=25$       | 60      | W    |
| $T_j$     | Operating junction temperature |                | 150     |      |
| $T_{stg}$ | Storage temperature            |                | -65~150 |      |

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## CHARACTERISTICS

T<sub>j</sub>=25 unless otherwise specified

| SYMBOL                | PARAMETER                            | CONDITIONS  | MIN | TYP. | MAX        | UNIT |
|-----------------------|--------------------------------------|---|-----|------|------------|------|
| V <sub>CE0(SUS)</sub> | Collector-emitter sustaining voltage | I <sub>C</sub> =100mA; I <sub>B</sub> =0                          | 700 |      |            | V    |
| V <sub>(BR)EBO</sub>  | Emitter-base breakdown voltage       | I <sub>E</sub> =10mA; I <sub>C</sub> =0                           | 10  |      |            | V    |
| V <sub>CEsat</sub>    | Collector-emitter saturation voltage | I <sub>C</sub> =5A; I <sub>B</sub> =1.25A                         |     |      | 1.5        | V    |
| V <sub>BEsat</sub>    | Base-emitter saturation voltage      | I <sub>C</sub> =5A; I <sub>B</sub> =1.25A                         |     |      | 1.3        | V    |
| I <sub>CES</sub>      | Collector cut-off current            | V <sub>CE</sub> =1700V; V <sub>BE</sub> =0<br>T <sub>j</sub> =125 |     |      | 1.0<br>2.0 | mA   |
| I <sub>EBO</sub>      | Emitter cut-off current              | V <sub>EB</sub> =5V; I <sub>C</sub> =0                            |     |      | 100        | μA   |
| h <sub>FE</sub>       | DC current gain                      | I <sub>C</sub> =5A; V <sub>CE</sub> =5V                           | 6   |      |            |      |

## Switching times

|                |              |   |  |     |     |    |
|----------------|--------------|---|--|-----|-----|----|
| t <sub>s</sub> | Storage time | I <sub>C</sub> =5A; I <sub>B1</sub> =1.25A; I <sub>B2</sub> =2.5A;<br>V <sub>CC</sub> =400V |  | 2.7 | 3.9 | μs |
| t <sub>f</sub> | Fall time    |   |  | 190 | 280 | ns |

## THERMAL CHARACTERISTICS

| SYMBOL              | PARAMETER                                | MAX  | UNIT |
|---------------------|--|------|------|
| R <sub>th j-c</sub> | Thermal resistance from junction to case | 2.08 | /W   |

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PACKAGE OUTLINE

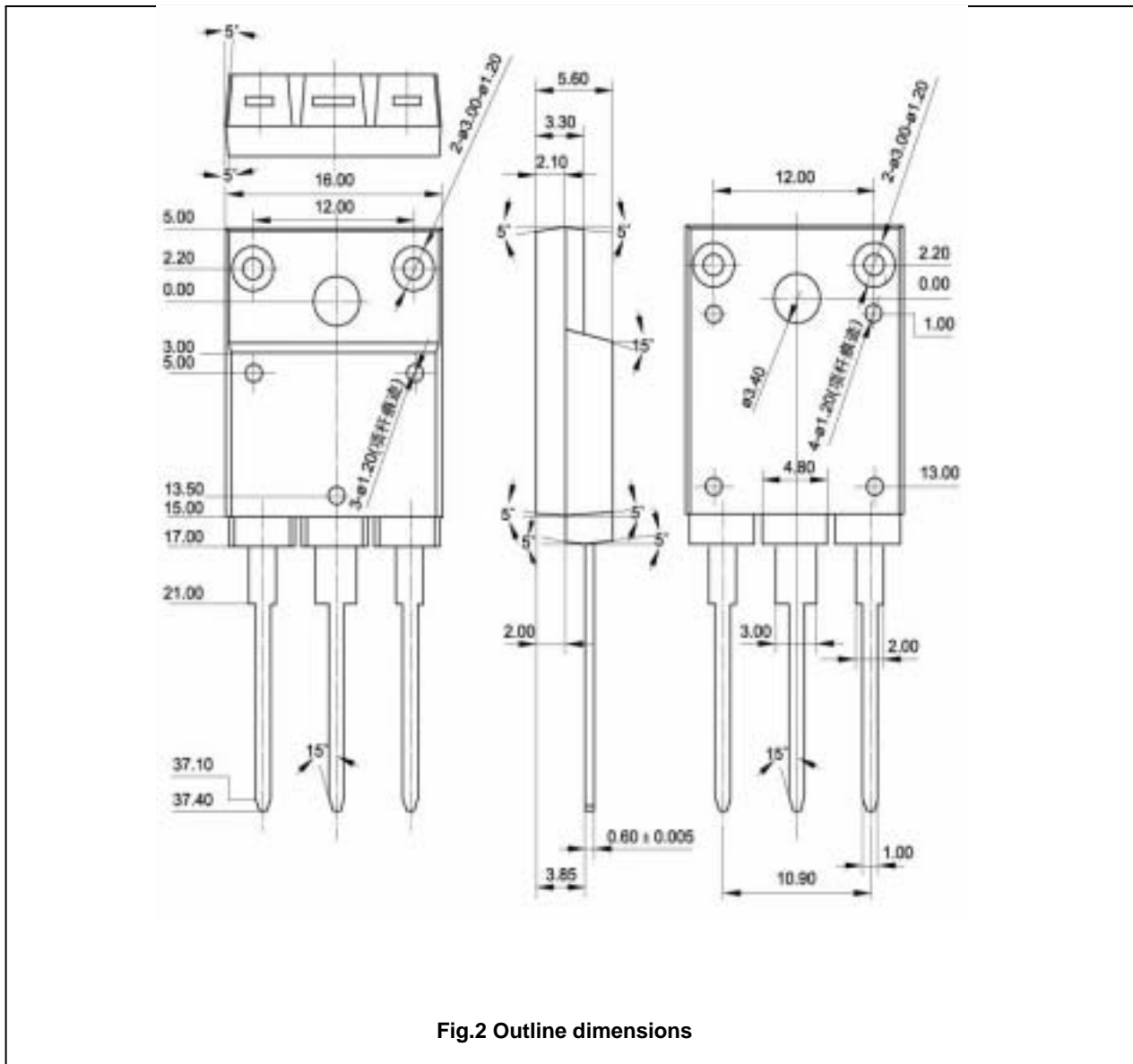


Fig.2 Outline dimensions