# Silicon NPN Power Transistors BU508



## DESCRIPTION

·With TO-3PN package
·High voltage
·High speed switching

## APPLICATIONS

·For use in horizontal deflection circuits of large screen colour TV receivers.

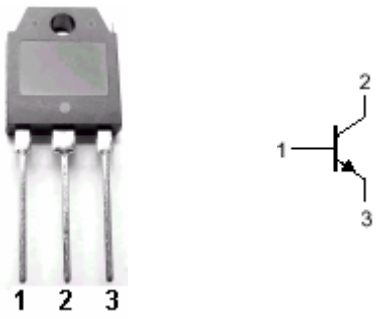


**Fig.1 simplified outline (TO-3PN) and symbol**

## PINNING

| PIN | DESCRIPTION |
|---|---|
| 1 | Base |
| 2 | Collector;connected to mounting base |
| 3 | Emitter |

## Absolute maximum ratings (Ta=25□)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---|---|---|---|---|
| $V_{CBO}$ | Collector-base voltage | Open emitter | 1500 | 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 |
| $P_C$ | Collector power dissipation | $T_C$=25□ | 125 | W |
| $T_j$ | Junction temperature | | 150 | □ |
| $T_{stg}$ | Storage temperature | | -65~150 | □ |

## THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---|---|---|---|
| $R_{th\ j\text{-}c}$ | Thermal resistance junction case | 1.0 | □/W |

## CHARACTERISTICS



**Tj=25□ unless otherwise specified**

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{(BR)EBO}$ | Emitter-base breakdown voltage | $I_E$=10mA; $I_C$=0 | 10 | | | V |
| $V_{CEO(SUS)}$ | Collector-emitter sustaining voltage | $I_C$=100mA; $I_B$=0 | 700 | | | V |
| $V_{CEsat}$ | Collector-emitter saturation voltage | $I_C$=4.5A; $I_B$=2A | | | 5.0 | V |
| $V_{BEsat}$ | Base-emitter saturation voltage | $I_C$=4.5A; $I_B$=2A | | | 1.3 | V |
| $I_{CES}$ | Collector cut-off current | $V_{CE}$=1500V; $V_{BE}$=0<br>$T_C$=125°C | | | 1.0<br>2.0 | mA |
| $I_{EBO}$ | Emitter cut-off current | $V_{EB}$=5V; $I_C$=0 | | | 0.1 | mA |
| $h_{FE}$ | DC current gain | $I_C$=1A ; $V_{CE}$=5V | 8 | | | |
| $f_T$ | Transition frequency | $I_C$=0.1A ; $V_{CE}$=5V | | 7 | | MHz |
| $t_s$ | Storage time | $I_C$=4.5A ; $V_{CC}$=140V<br>$I_B$=1.8A; $L_C$=0.9mH<br>$L_B$=3μH | | 7 | | μs |
| $t_f$ | Fall time | | | 0.55 | | μs |

**PACKAGE OUTLINE**



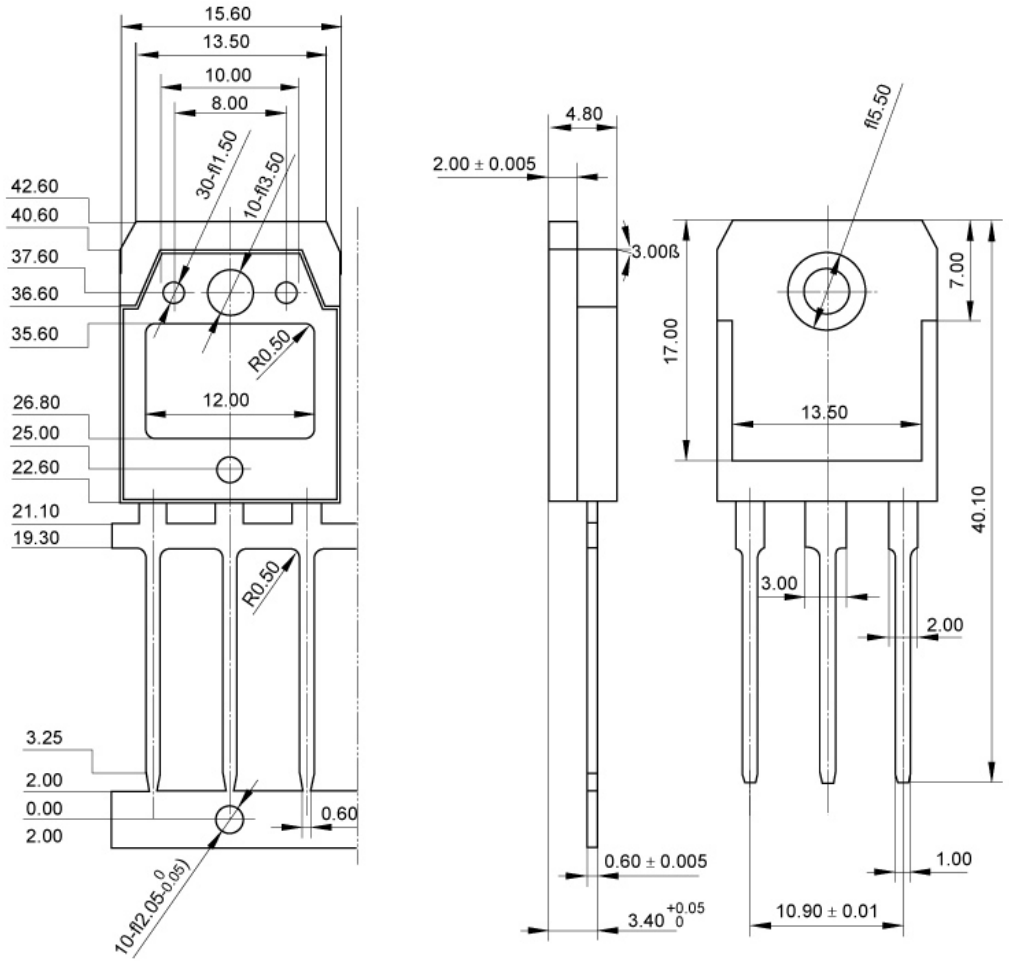


**Fig.2 outline dimensions (unindicated tolerance:±0.10 mm)**