# Silicon NPN Power Transistors 2SD1457 2SD1457A



## DESCRIPTION

·With TO-3PFa package
·High DC current gain
·DARLINGTON
·High $V_{CBO}$

## APPLICATIONS

·For power amplification

**PINNING**

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

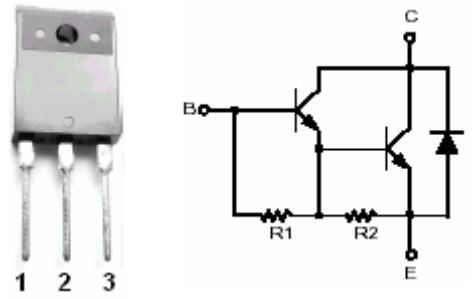


**Fig.1 simplified outline (TO-3PFa) and symbol**

## Absolute maximum ratings (Ta=25□)

| SYMBOL | PARAMETER | | CONDITIONS | MAX | UNIT |
|---|---|---|---|---|---|
| $V_{CBO}$ | Collector-base voltage | | Open emitter | 200 | V |
| $V_{CEO}$ | Collector-emitter voltage | 2SD1457 | Open base | 150 | V |
| | | 2SD1457A | | 200 | |
| $V_{EBO}$ | Emitter-base voltage | | Open collector | 5 | V |
| $I_C$ | Collector current | | | 6 | A |
| $I_{CM}$ | Collector current-peak | | | 10 | A |
| $P_C$ | Collector power dissipation | | $T_C$=25□ | 60 | W |
| | | | $T_a$=25□ | 3.0 | |
| $T_j$ | Junction temperature | | | 150 | □ |
| $T_{stg}$ | Storage temperature | | | -55~150 | □ |

## CHARACTERISTICS

**Tj=25□ unless otherwise specified**



| SYMBOL | PARAMETER | | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|---|
| $V_{CEO(SUS)}$ | Collector-emitter sustaining voltage | 2SD1457 | $I_C$=2A ;L=10mH | 150 | | | V |
| | | 2SD1457A | | 200 | | | |
| $V_{(BR)EBO}$ | Emitter-base breakdown voltage | | $I_E$=0.1A ;$I_C$=0 | 5 | | | V |
| $V_{CEsat}$ | Collector-emitter saturation voltage | | $I_C$=3A ;$I_B$=60mA | | | 1.5 | V |
| $V_{BEsat}$ | Base-emitter saturation voltage | | $I_C$=3A ;$I_B$=60mA | | | 2.5 | V |
| $I_{CBO}$ | Collector cut-off current | | $V_{CB}$=200V; $I_E$=0 | | | 100 | μA |
| $h_{FE}$ | DC current gain | | $I_C$=2A ; $V_{CE}$=2V | 700 | | 10000 | |
| $f_T$ | Transition frequency | | $I_C$=0.5A ; $V_{CE}$=10V;f=1MHz | | 15 | | MHz |

◆ **$h_{FE}$ Classifications**

| Q | P | O |
|---|---|---|
| 700-2500 | 2000-5000 | 4000-10000 |

**PACKAGE OUTLINE**



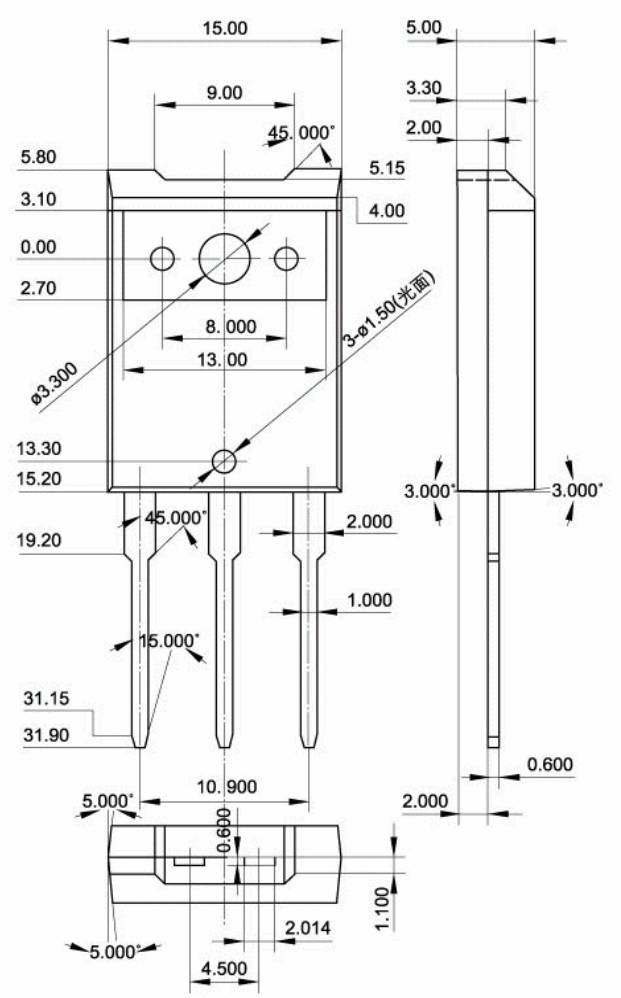


**Fig.2 outline dimensions (unindicated tolerance:±0.30mm)**