

## Silicon NPN Power Transistors

## 2SD1457 2SD1457A

## DESCRIPTION

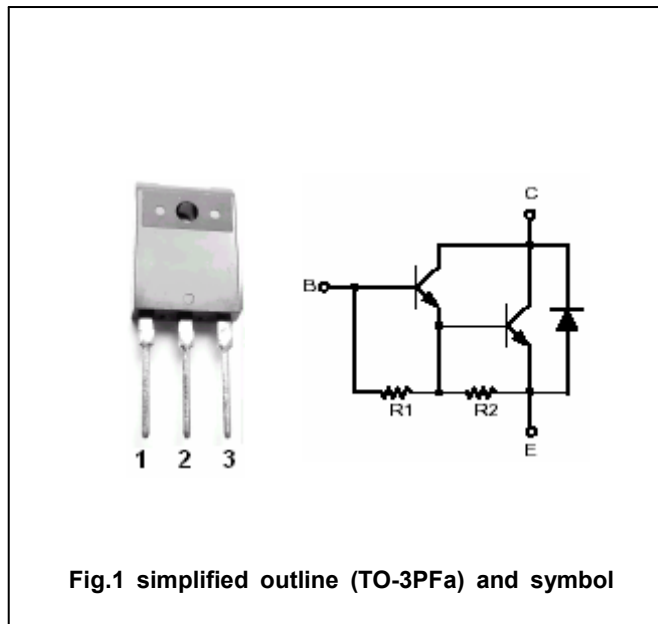
- With TO-3PFa package
- High DC current gain
- DARLINGTON
- High  $V_{CBO}$

## APPLICATIONS

- For power amplification

## PINNING

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

Absolute maximum ratings ( $T_a=25^\circ\text{C}$ )

| 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 |          | $T_C=25^\circ\text{C}$ | 60      | W                |
|           |                             |          | $T_a=25^\circ\text{C}$ | 3.0     |                  |
| $T_j$     | Junction temperature        |          |                        | 150     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage temperature         |          |                        | -55~150 | $^\circ\text{C}$ |

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## CHARACTERISTICS

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

| SYMBOL                | PARAMETER                            |          | CONDITIONS                                          | MIN | TYP. | MAX   | UNIT |
|-----------------------|--------------------------------------|----------|-----------------------------------------------------|-----|------|-------|------|
| V <sub>CEO(SUS)</sub> | Collector-emitter sustaining voltage | 2SD1457  | I <sub>C</sub> =2A ; L=10mH                         | 150 |      |       | V    |
|                       |                                      | 2SD1457A |                                                     | 200 |      |       |      |
| V <sub>(BR)EBO</sub>  | Emitter-base breakdown voltage       |          | I <sub>E</sub> =0.1A ; I <sub>C</sub> =0            | 5   |      |       | V    |
| V <sub>CEsat</sub>    | Collector-emitter saturation voltage |          | I <sub>C</sub> =3A ; I <sub>B</sub> =60mA           |     |      | 1.5   | V    |
| V <sub>BEsat</sub>    | Base-emitter saturation voltage      |          | I <sub>C</sub> =3A ; I <sub>B</sub> =60mA           |     |      | 2.5   | V    |
| I <sub>CBO</sub>      | Collector cut-off current            |          | V <sub>CB</sub> =200V; I <sub>E</sub> =0            |     |      | 100   | μA   |
| h <sub>FE</sub>       | DC current gain                      |          | I <sub>C</sub> =2A ; V <sub>CE</sub> =2V            | 700 |      | 10000 |      |
| f <sub>T</sub>        | Transition frequency                 |          | I <sub>C</sub> =0.5A ; V <sub>CE</sub> =10V; f=1MHz |     | 15   |       | MHz  |

◆ h<sub>FE</sub> Classifications

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

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