

**Silicon NPN Darlington Power Transistors**

**2SD1895**

**DESCRIPTION**

- With TO-3PFa package
- High DC current gain
- Low collector saturation voltage
- Complement to type 2SB1255

**APPLICATIONS**

- Power amplification
- Optimum for 90W high-fidelity output applications

**PINNING**

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

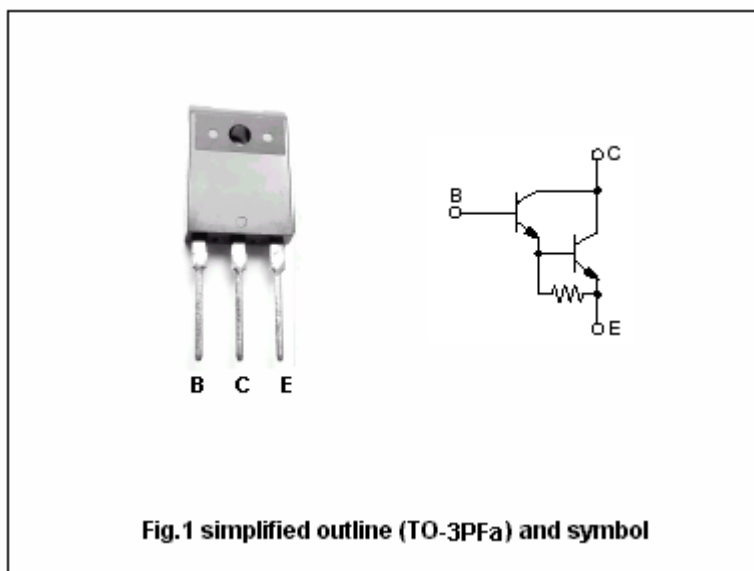


Fig.1 simplified outline (TO-3PFa) and symbol

**Absolute maximum ratings(Ta=25 )**

| SYMBOL    | PARAMETER                   | CONDITIONS     | VALUE   | UNIT |
|-----------|-----------------------------|----------------|---------|------|
| $V_{CBO}$ | Collector-base voltage      | Open emitter   | 160     | V    |
| $V_{CEO}$ | Collector-emitter voltage   | Open base      | 140     | V    |
| $V_{EBO}$ | Emitter-base voltage        | Open collector | 5       | V    |
| $I_C$     | Collector current           |                | 15      | A    |
| $I_{CP}$  | Collector current-peak      |                | 8       | A    |
| $P_C$     | Collector power dissipation | $T_C=25$       | 100     | W    |
|           |                             |                | 3       |      |
| $T_j$     | Junction temperature        |                | 150     |      |
| $T_{stg}$ | Storage temperature         |                | -55~150 |      |

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## CHARACTERISTICS

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

| SYMBOL               | PARAMETER                            | CONDITIONS   | MIN  | TYP. | MAX   | UNIT |
|----------------------|--------------------------------------|--|------|------|-------|------|
| V <sub>(BR)CEO</sub> | Collector-emitter breakdown voltage  | I <sub>C</sub> =30mA ; I <sub>B</sub> =0             | 140  |      |       | V    |
| V <sub>CEsat</sub>   | Collector-emitter saturation voltage | I <sub>C</sub> =7A ; I <sub>B</sub> =7mA             |      |      | 2.5   | V    |
| V <sub>BEsat</sub>   | Base-emitter saturation voltage      | I <sub>C</sub> =7A ; I <sub>B</sub> =7mA             |      |      | 3.0   | V    |
| I <sub>CBO</sub>     | Collector cut-off current            | V <sub>CB</sub> =160V ; I <sub>E</sub> =0            |      |      | 100   | μ A  |
| I <sub>CEO</sub>     | Collector cut-off current            | V <sub>CE</sub> =140V ; I <sub>B</sub> =0            |      |      | 100   | μ A  |
| I <sub>EBO</sub>     | Emitter cut-off current              | V <sub>EB</sub> =5V ; I <sub>C</sub> =0              |      |      | 100   | μ A  |
| h <sub>FE-1</sub>    | DC current gain                      | I <sub>C</sub> =1A ; V <sub>CE</sub> =5V             | 2000 |      |       |      |
| h <sub>FE-2</sub>    | DC current gain                      | I <sub>C</sub> =7A ; V <sub>CE</sub> =5V             | 5000 |      | 30000 |      |
| f <sub>T</sub>       | Transition frequency                 | I <sub>C</sub> =0.5A ; V <sub>CE</sub> =10V ; f=1MHz |      | 20   |       | MHz  |

## Switching times

|                  |              |   |  |     |  |     |
|------------------|--------------|---|--|-----|--|-----|
| t <sub>on</sub>  | Turn-on time | I <sub>C</sub> =7A ; V <sub>CC</sub> =50V<br>I <sub>B1</sub> =-I <sub>B2</sub> =7mA |  | 2.0 |  | μ s |
| t <sub>stg</sub> | Storage time |   |  | 6.0 |  | μ s |
| t <sub>f</sub>   | Fall time    |   |  | 1.2 |  | μ s |

◆ h<sub>FE-2</sub> classifications

| Q          | P          |
|------------|------------|
| 5000-15000 | 8000-30000 |

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PACKAGE OUTLINE

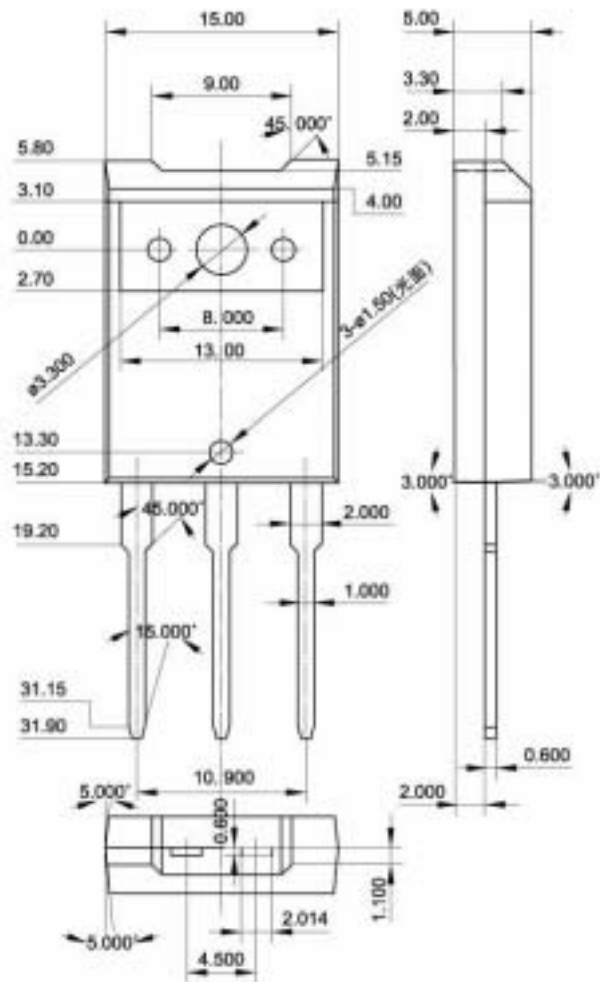


Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.30\text{mm}$ )