

**Inchange Semiconductor**

**Product Specification**

**Silicon NPN Power Transistors**

**2SD1486**

**DESCRIPTION**

- With TO-3PFa package
- Complement to type 2SB1055
- High transition frequency  $f_T$
- Satisfactory linearity of  $h_{FE}$
- Wide area of safe operation

**APPLICATIONS**

- For high power amplifier applications

**PINNING**

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

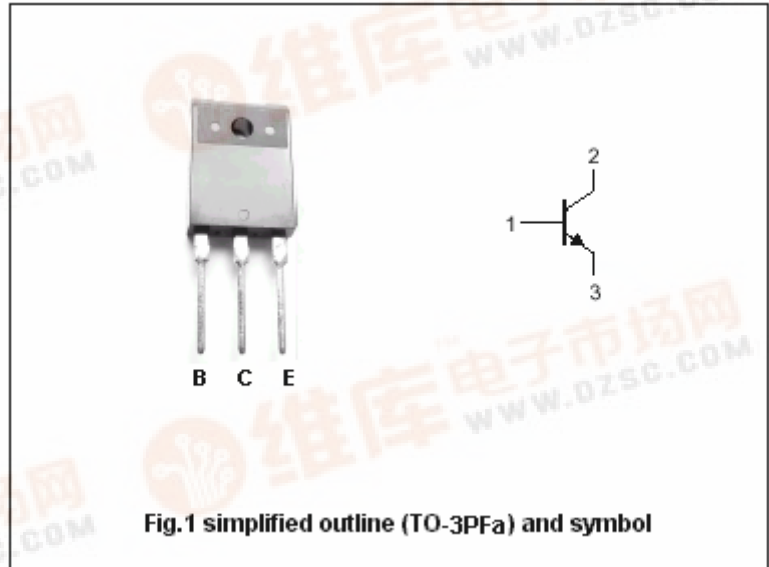


Fig.1 simplified outline (TO-3PFa) and symbol

**Absolute maximum ratings(Ta=25°C)**

| SYMBOL    | PARAMETER                   | CONDITIONS             | VALUE   | UNIT |
|-----------|-----------------------------|------------------------|---------|------|
| $V_{CBO}$ | Collector-base voltage      | Open emitter           | 120     | V    |
| $V_{CEO}$ | Collector-emitter voltage   | Open base              | 120     | V    |
| $V_{EBO}$ | Emitter-base voltage        | Open collector         | 5       | V    |
| $I_C$     | Collector current           |                        | 6       | A    |
| $I_{CP}$  | Collector current-peak      |                        | 10      | A    |
| $P_C$     | Collector power dissipation | $T_C=25^\circ\text{C}$ | 70      | W    |
|           |                             |                        | 3       |      |
| $T_j$     | Junction temperature        |                        | 150     | °C   |
| $T_{stg}$ | Storage temperature         |                        | -55~150 | °C   |

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## 2SD1486

## CHARACTERISTICS

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

| SYMBOL             | PARAMETER                            | CONDITIONS                                       | MIN | TYP. | MAX | UNIT |
|--------------------|--------------------------------------|--|-----|------|-----|------|
| V <sub>CEsat</sub> | Collector-emitter saturation voltage | I <sub>C</sub> =4A ; I <sub>B</sub> =0.4A        |     |      | 2.0 | V    |
| V <sub>BE</sub>    | Base-emitter on voltage              | I <sub>C</sub> =4A ; V <sub>CE</sub> =5V         |     |      | 1.8 | V    |
| I <sub>CBO</sub>   | Collector cut-off current            | V <sub>CB</sub> =120V; I <sub>E</sub> =0         |     |      | 50  | μ A  |
| I <sub>EBO</sub>   | Emitter cut-off current              | V <sub>EB</sub> =3V; I <sub>C</sub> =0           |     |      | 50  | μ A  |
| h <sub>FE-1</sub>  | DC current gain                      | I <sub>C</sub> =20mA ; V <sub>CE</sub> =5V       | 20  |      |     |      |
| h <sub>FE-2</sub>  | DC current gain                      | I <sub>C</sub> =1A ; V <sub>CE</sub> =5V         | 40  |      | 200 |      |
| h <sub>FE-3</sub>  | DC current gain                      | I <sub>C</sub> =4A ; V <sub>CE</sub> =5V         | 20  |      |     |      |
| C <sub>OB</sub>    | Output capacitance                   | I <sub>E</sub> =0 ; V <sub>CB</sub> =10V; f=1MHz |     | 230  |     | pF   |
| f <sub>T</sub>     | Transition frequency                 | I <sub>C</sub> =0.5A ; V <sub>CE</sub> =-5V      |     | 20   |     | MHz  |

◆ h<sub>FE-2</sub> classifications

| R     | Q      | P       |
|-------|--------|---------|
| 40-80 | 60-120 | 100-200 |



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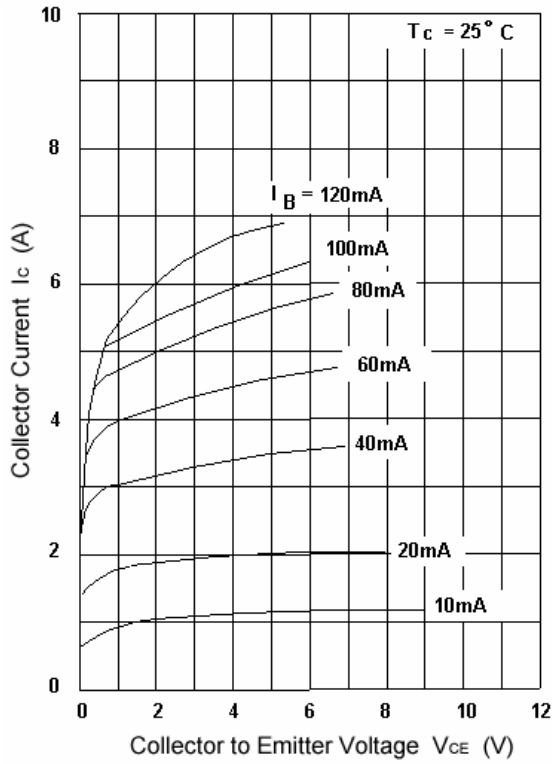


Fig.3 Static Characteristic

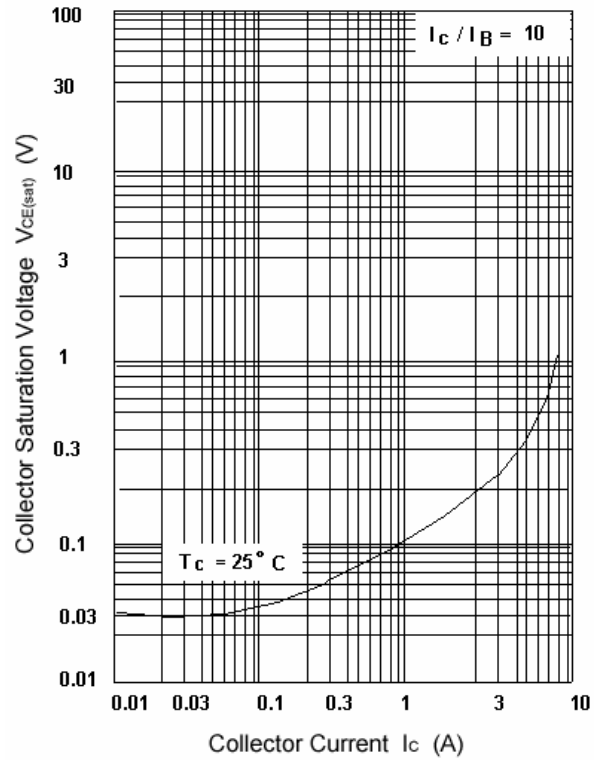


Fig.4 Collector-Emitter Saturation Voltage

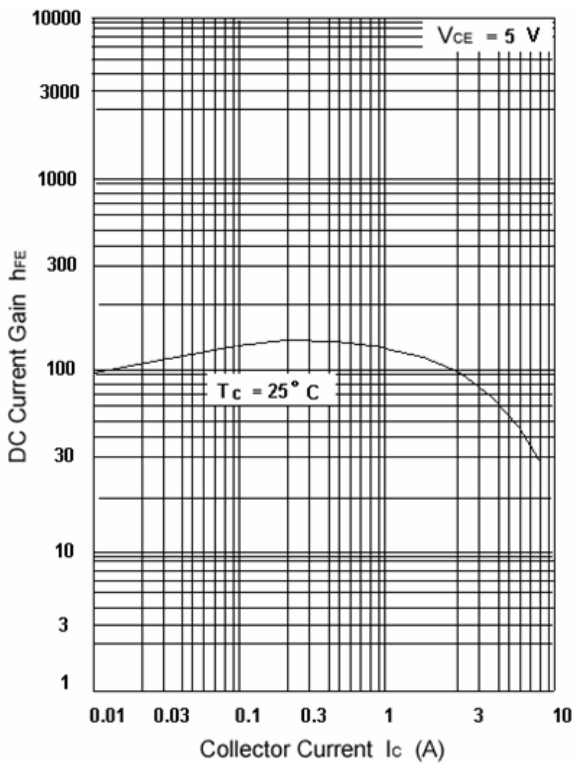


Fig.5 DC current Gain

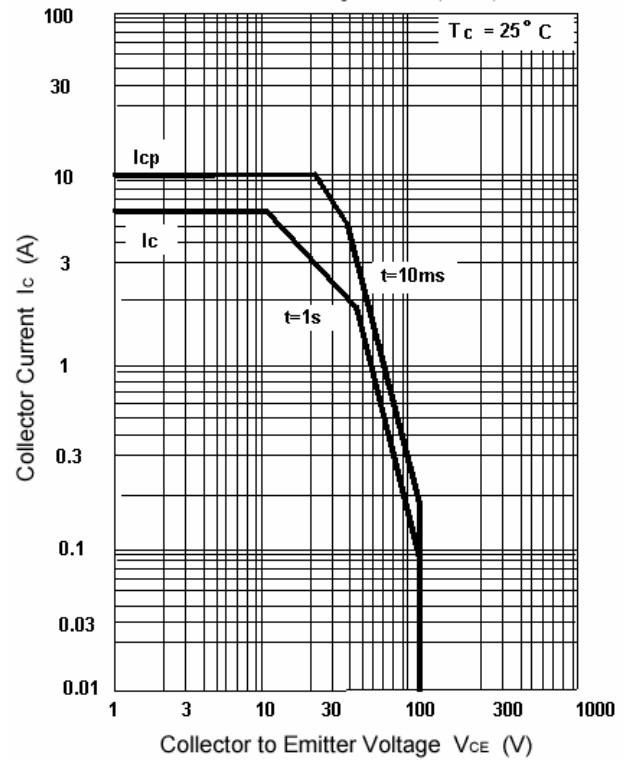


Fig.6 Safe Operating Area