

Silicon PNP Power Transistors

2SB1503

DESCRIPTION

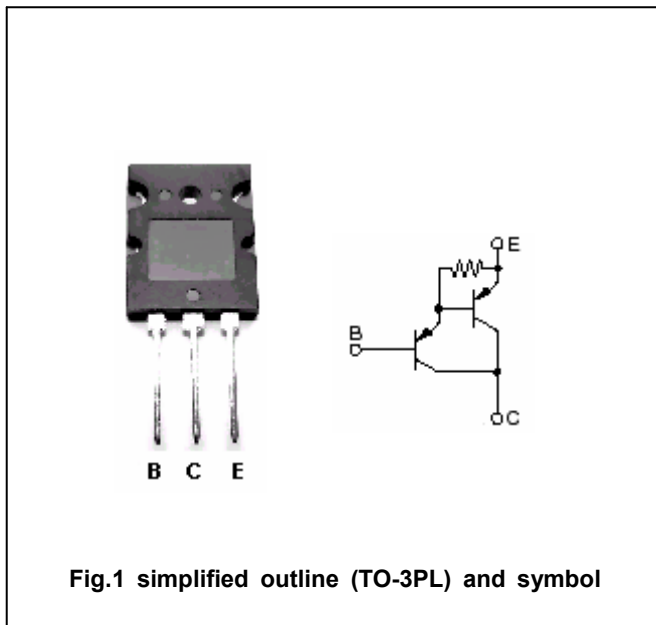
- With TO-3PL package
- Complement to type 2SD2276
- High DC current gain
- Low collector saturation voltage
- DARLINGTON

APPLICATIONS

- For power amplification
- Optimum for 110W Hi-Fi output applications

PINNING

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



Absolute maximum ratings(Ta=25°C)

| SYMBOL           | PARAMETER                   | CONDITIONS           | VALUE   | UNIT |
|------------------|-----------------------------|----------------------|---------|------|
| V <sub>CBO</sub> | Collector-base voltage      | Open emitter         | -160    | V    |
| V <sub>CEO</sub> | Collector-emitter voltage   | Open base            | -140    | V    |
| V <sub>EBO</sub> | Emitter-base voltage        | Open collector       | -5      | V    |
| I <sub>C</sub>   | Collector current           |                      | -7      | A    |
| I <sub>CM</sub>  | Collector current-peak      |                      | -12     | A    |
| P <sub>C</sub>   | Collector power dissipation | T <sub>C</sub> =25°C | 120     | W    |
|                  |                             | T <sub>a</sub> =25°C | 3.5     |      |
| T <sub>j</sub>   | Junction temperature        |                      | 150     | °C   |
| T <sub>stg</sub> | Storage temperature         |                      | -55~150 | °C   |

## Silicon PNP Power Transistors

## 2SB1503

## CHARACTERISTICS

T<sub>j</sub>=25°C 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  | μA   |
| I <sub>CEO</sub>     | Collector cut-off current            | V <sub>CE</sub> =-140V ; I <sub>B</sub> =0             |      |      | -100  | μA   |
| I <sub>EBO</sub>     | Emitter cut-off current              | V <sub>EB</sub> =-5V ; I <sub>C</sub> =0               |      |      | -100  | μA   |
| 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 ; I <sub>B1</sub> =-I <sub>B2</sub> =-7mA<br>V <sub>CC</sub> =-50V |  | 1.0 |  | μs |
| t <sub>s</sub>  | Storage time |  |  | 1.5 |  | μs |
| t <sub>f</sub>  | Fall time    |  |  | 1.2 |  | μs |

◆ h<sub>FE-2</sub> classifications

| Q          | S          | P          |
|------------|------------|------------|
| 5000-10000 | 7000-21000 | 8000-30000 |

Silicon PNP Power Transistors

2SB1503

PACKAGE OUTLINE

