

## Silicon PNP Power Transistors

## 2SB1548 2SB1548A

## DESCRIPTION

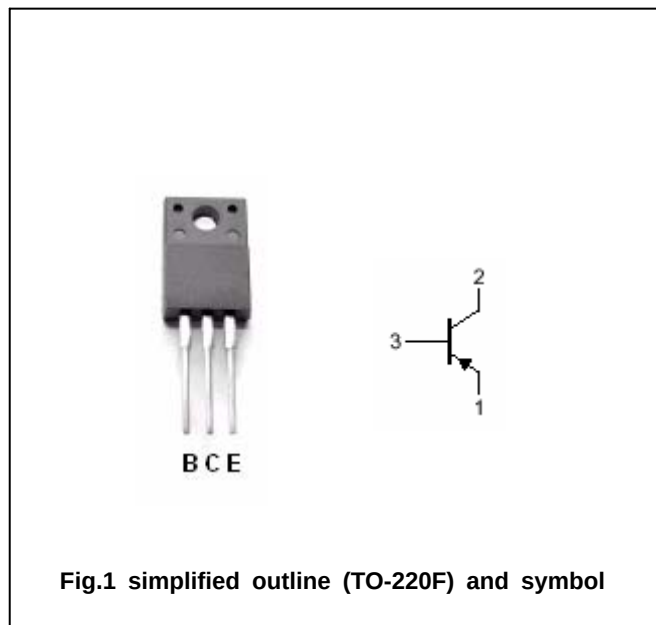
- With TO-220F package
- Complement to type 2SD2374/2374A
- Low collector saturation voltage
- High forward current transfer ratio  $h_{FE}$  which has satisfactory linearity

## APPLICATIONS

- For power amplifications

## PINNING

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

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

| SYMBOL    | PARAMETER                 |                        | CONDITIONS     | VALUE   | UNIT             |
|-----------|---------------------------|------------------------|----------------|---------|------------------|
| $V_{CBO}$ | Collector-base voltage    | 2SB1548                | Open emitter   | -60     | V                |
|           |                           | 2SB1548A               |                | -80     |                  |
| $V_{CEO}$ | Collector-emitter voltage | 2SB1548                | Open base      | -60     | V                |
|           |                           | 2SB1548A               |                | -80     |                  |
| $V_{EBO}$ | Emitter-base voltage      |                        | Open collector | -5      | V                |
| $I_C$     | Collector current         |                        |                | -3      | A                |
| $I_{CM}$  | Collector current-peak    |                        |                | -5      | A                |
| $P_C$     | Collector dissipation     | $T_a=25^\circ\text{C}$ |                | 2       | W                |
|           |                           | $T_C=25^\circ\text{C}$ |                | 25      |                  |
| $T_j$     | 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°C unless otherwise specified

| SYMBOL             | PARAMETER                            |          | CONDITIONS                                    | MIN | TYP. | MAX  | UNIT |
|--------------------|--------------------------------------|----------|-----------------------------------------------|-----|------|------|------|
| V <sub>CEO</sub>   | Collector-emitter voltage            | 2SB1548  | I <sub>C</sub> =-30mA ; I <sub>B</sub> =0     | -60 |      |      | V    |
|                    |                                      | 2SB1548A |                                               | -80 |      |      |      |
| V <sub>CEsat</sub> | Collector-emitter saturation voltage |          | I <sub>C</sub> =-3A ; I <sub>B</sub> =-0.375A |     |      | -1.2 | V    |
| V <sub>BE</sub>    | Base-emitter voltage                 |          | I <sub>C</sub> =-3A ; V <sub>CE</sub> =-4V    |     |      | -1.8 | V    |
| I <sub>CBO</sub>   | Collector cut-off current            | 2SB1548  | V <sub>CB</sub> =-60V ; I <sub>E</sub> =0     |     |      | -200 | μA   |
|                    |                                      | 2SB1548A | V <sub>CB</sub> =-80V ; I <sub>E</sub> =0     |     |      |      |      |
| I <sub>CEO</sub>   | Collector cut-off current            | 2SB1548  | V <sub>CE</sub> =-30V ; I <sub>B</sub> =0     |     |      | -300 | μA   |
|                    |                                      | 2SB1548A | V <sub>CE</sub> =-60V ; I <sub>B</sub> =0     |     |      |      |      |
| I <sub>EBO</sub>   | Emitter cut-off current              |          | V <sub>EB</sub> =-5V ; I <sub>C</sub> =0      |     |      | -1   | mA   |
| h <sub>FE-1</sub>  | DC current gain                      |          | I <sub>C</sub> =-1A ; V <sub>CE</sub> =-4V    | 70  |      | 250  |      |
| h <sub>FE-2</sub>  | DC current gain                      |          | I <sub>C</sub> =-3A ; V <sub>CE</sub> =-4V    | 10  |      |      |      |
| f <sub>T</sub>     | Transition frequency                 |          | I <sub>C</sub> =-0.5A ; V <sub>CE</sub> =-10V |     | 30   |      | MHz  |

## Switching times

|                 |              |                                                                |  |     |  |    |
|-----------------|--------------|----------------------------------------------------------------|--|-----|--|----|
| t <sub>on</sub> | Turn-on time | I <sub>C</sub> =-1.0A I <sub>B1</sub> =-I <sub>B2</sub> =-0.1A |  | 0.5 |  | μs |
| t <sub>s</sub>  | Storage time |                                                                |  | 1.2 |  | μs |
| t <sub>f</sub>  | Fall time    |                                                                |  | 0.3 |  | μs |

◆ h<sub>FE-1</sub> Classifications

|        |         |
|--------|---------|
| Q      | P       |
| 70-150 | 120-250 |

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## PACKAGE OUTLINE

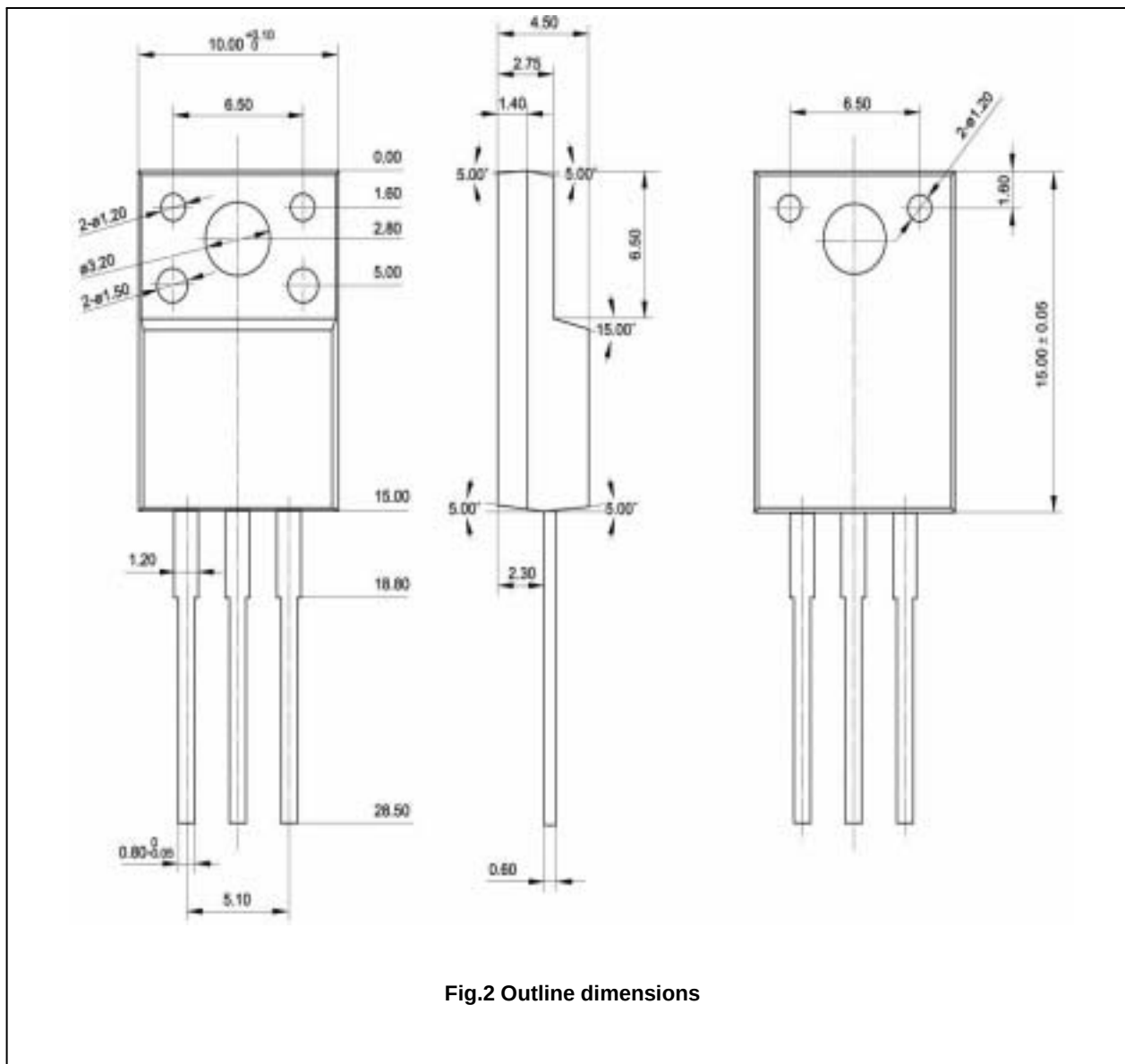


Fig.2 Outline dimensions

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