

## Silicon PNP Power Transistors

## 2SB954 2SB954A

## DESCRIPTION

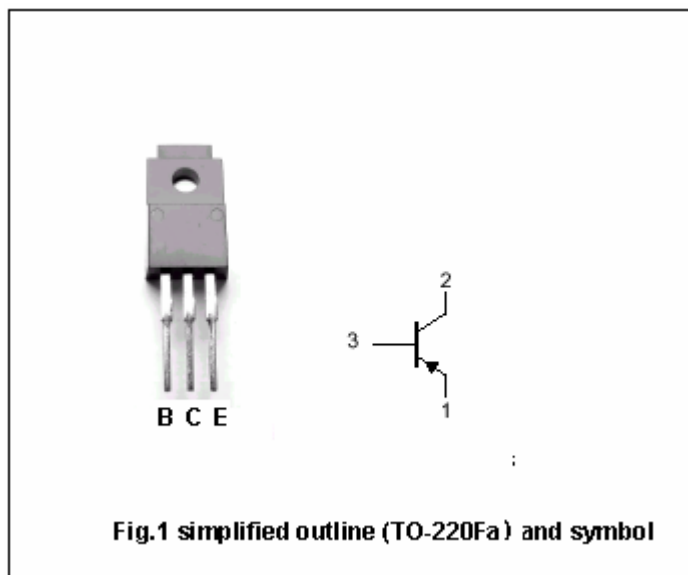
- With TO-220Fa package
- High forward current transfer ratio  $h_{FE}$  which has satisfactory linearity
- Low collector saturation voltage

## APPLICATIONS

- For power amplification

## 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      | 2SB954   | Open emitter   | -60     | V    |
|           |                             | 2SB954A  |                | -80     |      |
| $V_{CEO}$ | Collector-emitter voltage   | 2SB954   | Open base      | -60     | V    |
|           |                             | 2SB954A  |                | -80     |      |
| $V_{EBO}$ | Emitter-base voltage        |          | Open collector | -5      | V    |
| $I_C$     | Collector current           |          |                | -1      | A    |
| $I_{CM}$  | Collector current-peak      |          |                | -2      | A    |
| $P_C$     | Collector power dissipation | $T_a=25$ |                | 2       | W    |
|           |                             | $T_C=25$ |                | 30      |      |
| $T_j$     | 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>CEO</sub>   | Collector-emitter voltage            | 2SB954  | I <sub>C</sub> =-30mA ;I <sub>B</sub> =0                                                    | -60 |      |      | V    |
|                    |                                      | 2SB954A |                                                                                             | -80 |      |      |      |
| V <sub>CEsat</sub> | Collector-emitter saturation voltage |         | I <sub>C</sub> =-1.0A ;I <sub>B</sub> =-0.125A                                              |     |      | -1.0 | V    |
| V <sub>BE</sub>    | Base-emitter voltage                 |         | I <sub>C</sub> =-1A ; V <sub>CE</sub> =-4V                                                  |     |      | -1.3 | V    |
| I <sub>CEO</sub>   | Collector cut-off current            | 2SB954  | V <sub>CE</sub> =-30V; I <sub>B</sub> =0                                                    |     |      | -300 | μ A  |
|                    |                                      | 2SB954A | V <sub>CE</sub> =-60V; I <sub>B</sub> =0                                                    |     |      |      |      |
| I <sub>CES</sub>   | Collector cut-off current            | 2SB954  | V <sub>CE</sub> =-60V; V <sub>BE</sub> =0                                                   |     |      | -200 | μ A  |
|                    |                                      | 2SB954A | V <sub>CE</sub> =-80V; V <sub>BE</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> =-0.2A ; V <sub>CE</sub> =-4V                                                | 70  |      | 250  |      |
| h <sub>FE-2</sub>  | DC current gain                      |         | I <sub>C</sub> =-1A ; V <sub>CE</sub> =-4V                                                  | 15  |      |      |      |
| f <sub>T</sub>     | Transition frequency                 |         | I <sub>C</sub> =-0.2A; V <sub>CE</sub> =-5V,f=10MHz                                         |     | 30   |      | MHz  |
| t <sub>on</sub>    | Trun-on time                         |         | I <sub>C</sub> =-1A ;V <sub>CC</sub> =-50V<br>I <sub>B1</sub> =-0.1A, I <sub>B2</sub> =0.1A |     | 0.5  |      | μ s  |
| t <sub>s</sub>     | Storage time                         |         |                                                                                             |     | 1.2  |      | μ s  |
| t <sub>f</sub>     | Fall time                            |         |                                                                                             |     | 0.3  |      | μ s  |

◆ h<sub>FE-1</sub> Classifications

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

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## PACKAGE OUTLINE

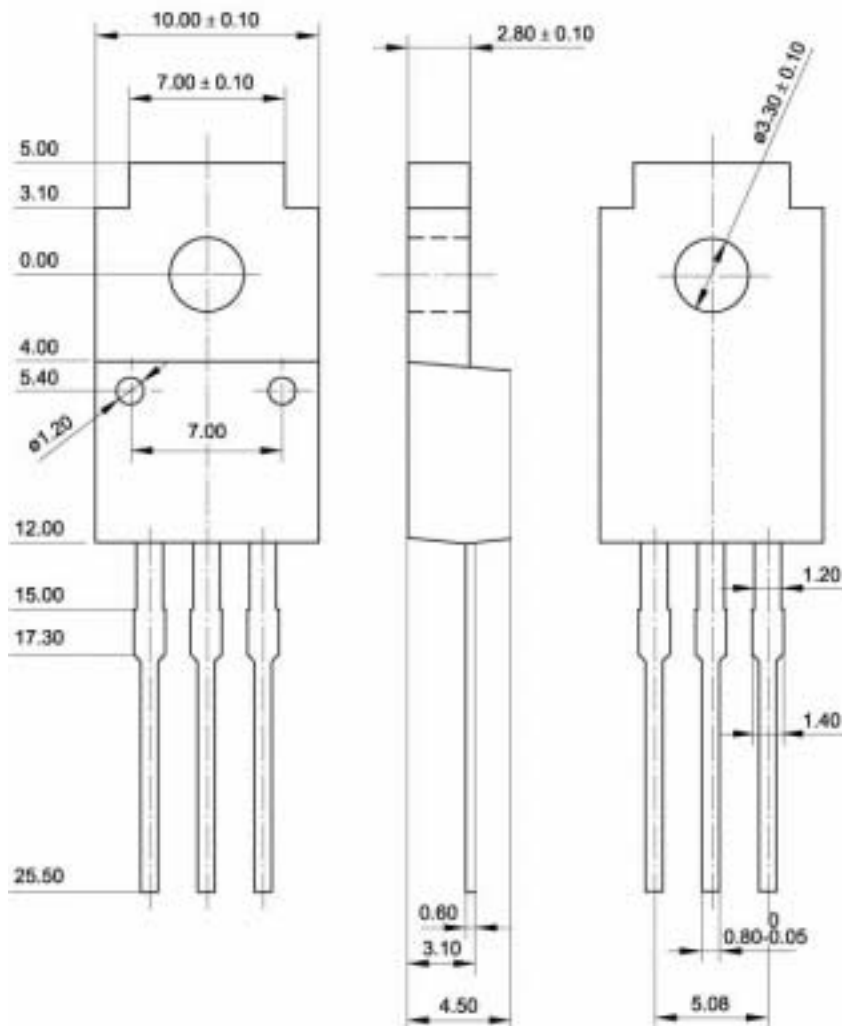


Fig.2 Outline dimensions (unindicated tolerance: ± 0.15 mm)

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