

Silicon PNP Power Transistors

2SA1535 2SA1535A

DESCRIPTION

- With TO-220Fa package
- Complement to type 2SC3944/3944A
- Optimum for the driver-stage of a 60W to 100W output amplifier

APPLICATIONS

- For low-frequency driver and high power amplification

PINNING

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

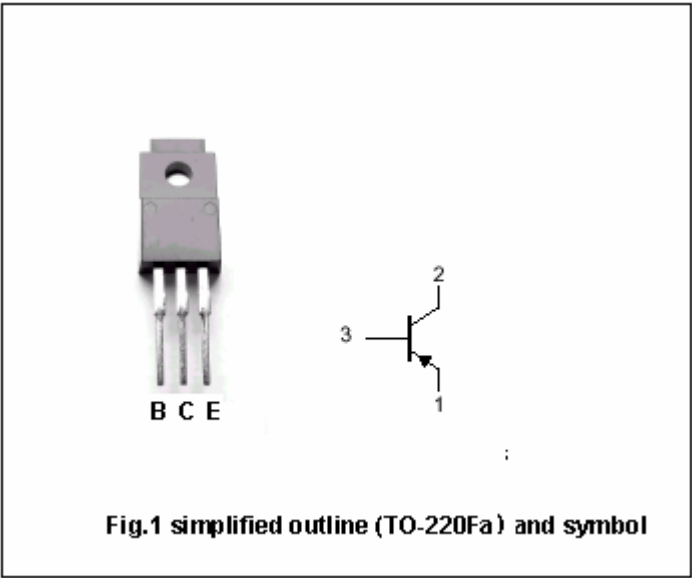


Fig.1 simplified outline (TO-220Fa) and symbol

Absolute maximum ratings(Ta=25℃)

| SYMBOL           | PARAMETER                   |                     | CONDITIONS     | VALUE   | UNIT |
|------------------|-----------------------------|---------------------|----------------|---------|------|
| V <sub>CBO</sub> | Collector-base voltage      | 2SA1535             | Open emitter   | -150    | V    |
|                  |                             | 2SA1535A            |                | -180    |      |
| V <sub>CEO</sub> | Collector-emitter voltage   | 2SA1535             | Open base      | -150    | V    |
|                  |                             | 2SA1535A            |                | -180    |      |
| V <sub>EBO</sub> | Emitter-base voltage        |                     | Open collector | -5      | V    |
| I <sub>C</sub>   | Collector current           |                     |                | -1.0    | A    |
| I <sub>CM</sub>  | Collector current-peak      |                     |                | -1.5    | A    |
| P <sub>C</sub>   | Collector power dissipation | T <sub>a</sub> =25℃ |                | 2.0     | W    |
|                  |                             | T <sub>C</sub> =25℃ |                | 15      |      |
| T <sub>j</sub>   | Junction temperature        |                     |                | 150     | ℃    |
| T <sub>stg</sub> | Storage temperature         |                     |                | -55~150 | ℃    |

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## 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  | 2SA1535  | I <sub>C</sub> =-1mA; I <sub>B</sub> =0          | -150 |      |      | V    |
|                      |                                      | 2SA1535A | I <sub>C</sub> =-0.1mA; I <sub>B</sub> =0        | -180 |      |      |      |
| V <sub>(BR)EBO</sub> | Emitter-base breakdown voltage       |          | I <sub>E</sub> =-10μA; I <sub>C</sub> =0         | -5   |      |      | V    |
| V <sub>CEsat</sub>   | Collector-emitter saturation voltage |          | I <sub>C</sub> =-0.5 A; I <sub>B</sub> =-50m A   |      |      | -2.0 | V    |
| V <sub>BEsat</sub>   | Base-emitter saturation voltage      |          | I <sub>C</sub> =-0.5 A; I <sub>B</sub> =-50m A   |      |      | -2.0 | V    |
| I <sub>CBO</sub>     | Collector cut-off current            |          | V <sub>CB</sub> =-150V; I <sub>E</sub> =0        |      |      | -10  | μA   |
| h <sub>FE-1</sub>    | DC current gain                      |          | I <sub>C</sub> =-150mA ; V <sub>CE</sub> =-10V   | 90   |      | 330  |      |
| h <sub>FE-2</sub>    | DC current gain                      |          | I <sub>C</sub> =-500mA ; V <sub>CE</sub> =-5V    | 50   |      |      |      |
| f <sub>T</sub>       | Transition frequency                 |          | I <sub>C</sub> =-50mA ; V <sub>CB</sub> =-10V    |      | 200  |      | MHz  |
| C <sub>OB</sub>      | Output capacitance                   |          | I <sub>E</sub> =0; V <sub>CB</sub> =-10V; f=1MHz |      | 30   |      | pF   |

◆ h<sub>FE-1</sub> classifications

| Q      | R       | S       |
|--------|---------|---------|
| 90-155 | 130-220 | 185-330 |

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PACKAGE OUTLINE

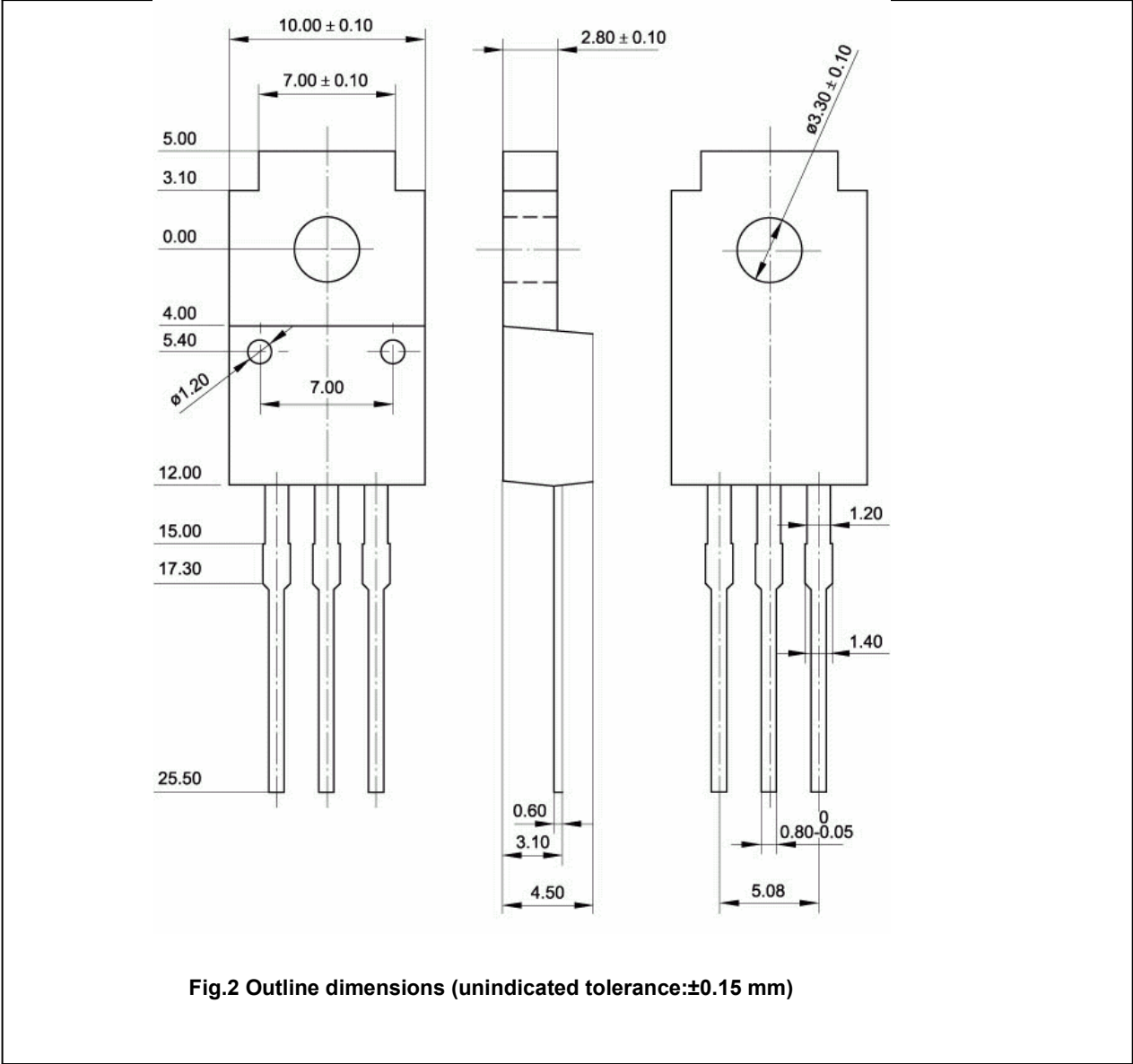


Fig.2 Outline dimensions (unindicated tolerance:±0.15 mm)

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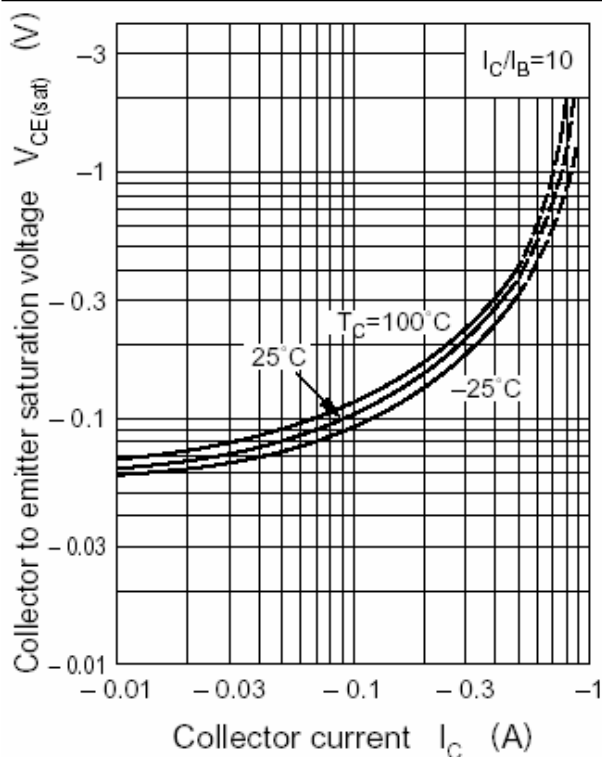


Fig.3 Collector-Emitter Saturation Voltage

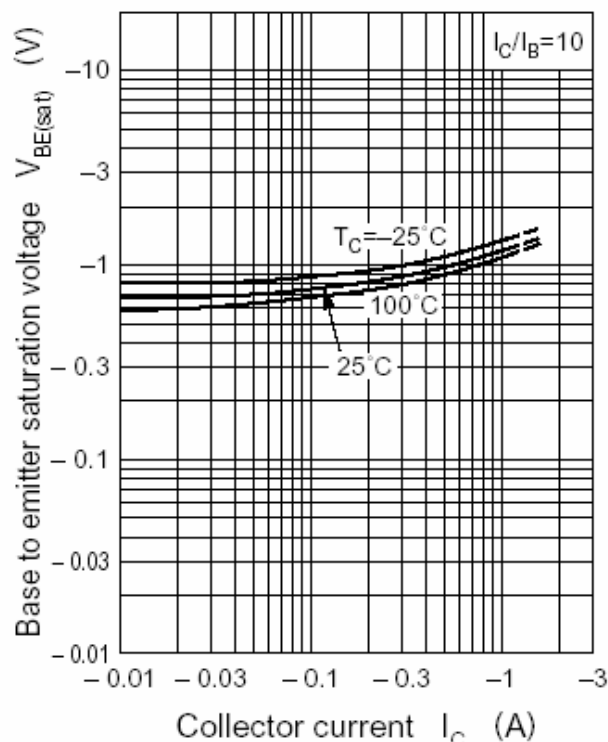


Fig.4 Base-Emitter Saturation Voltage

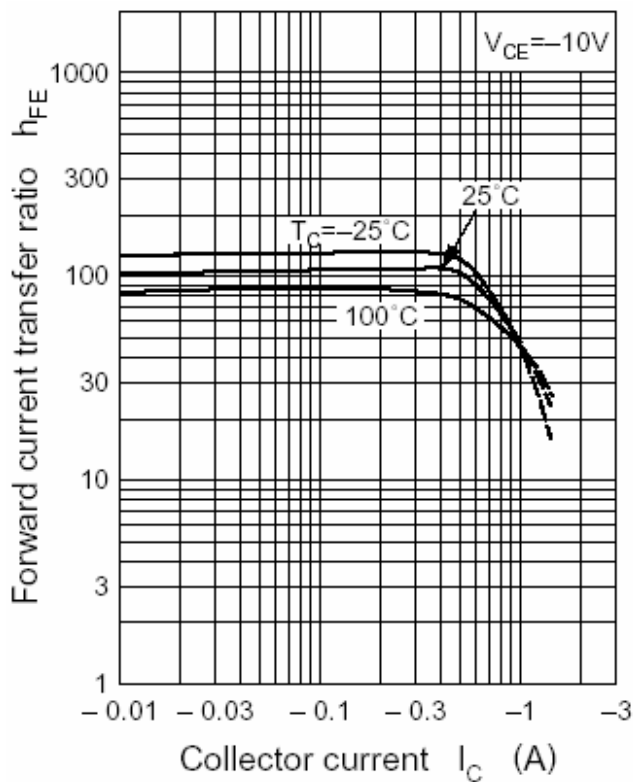


Fig.5 DC current Gain

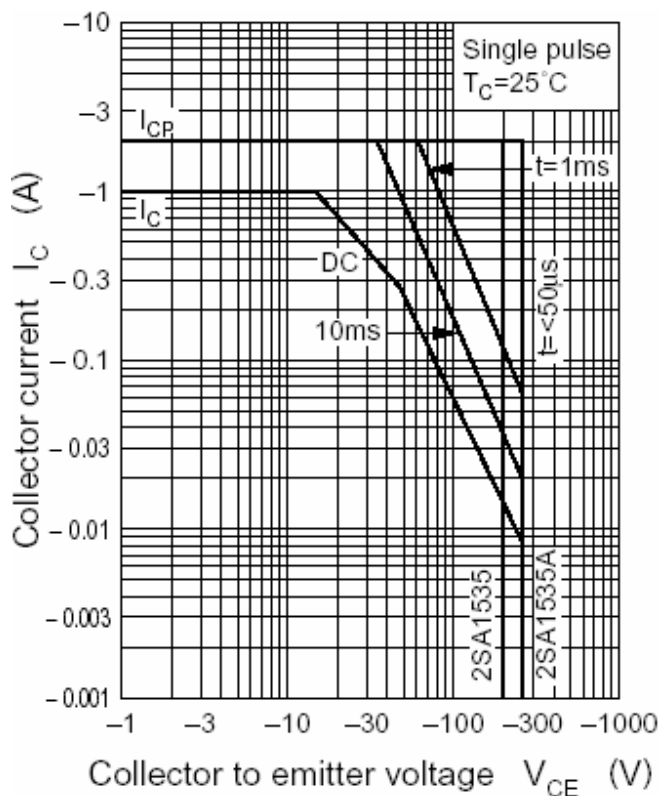


Fig.6 Safe Operating Area