

Silicon NPN Power Transistors

2SD1459

**DESCRIPTION**

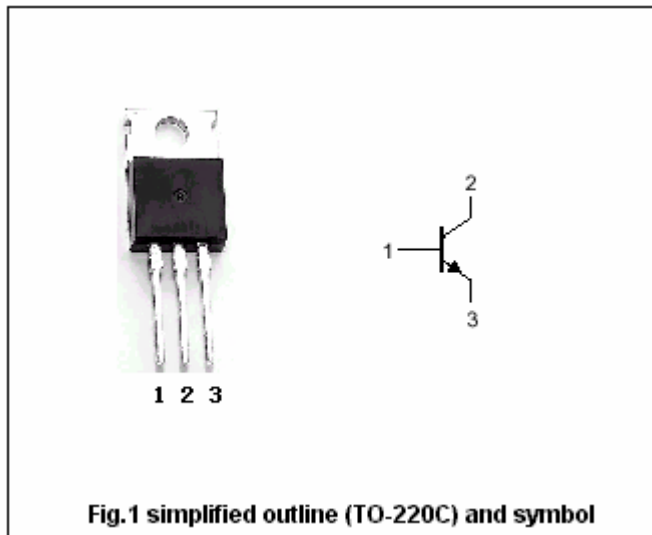
- With TO-220 package
- High allowable collector dissipation.
- Complement to type 2SB1037

**APPLICATIONS**

- Color TV vertical output application
- Sound output application

**PINNING**

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



**Absolute maximum ratings (Ta=25°C)**

| SYMBOL    | PARAMETER                   | CONDITIONS       | VALUE   | UNIT |
|-----------|-----------------------------|------------------|---------|------|
| $V_{CBO}$ | Collector-base voltage      | Open emitter     | 150     | V    |
| $V_{CEO}$ | Collector-emitter voltage   | Open base        | 150     | V    |
| $V_{EBO}$ | Emitter-base voltage        | Open collector   | 5       | V    |
| $I_C$     | Collector current           |                  | 1.5     | A    |
| $I_{CM}$  | Collector current-peak      |                  | 3.0     | A    |
| $P_C$     | Collector power dissipation |                  | 2.0     | W    |
|           |                             | $T_C=25^\circ C$ | 30      |      |
| $T_j$     | Junction temperature        |                  | 175     | °C   |
| $T_{stg}$ | Storage temperature         |                  | -55~175 | °C   |

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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  | I <sub>C</sub> =10mA ; I <sub>B</sub> =0   | 150 |     |     | V    |
| V <sub>CEsat</sub>   | Collector-emitter saturation voltage | I <sub>C</sub> =0.5A, I <sub>B</sub> =50mA |     |     | 1.5 | V    |
| V <sub>BEsat</sub>   | Base-emitter saturation voltage      | I <sub>C</sub> =0.5A, I <sub>B</sub> =50mA |     |     | 1.2 | V    |
| I <sub>CBO</sub>     | Collector cut-offcurrent             | V <sub>CB</sub> =120V; I <sub>E</sub> =0   |     |     | 10  | μA   |
| I <sub>EBO</sub>     | Emitter cut-offcurrent               | V <sub>EB</sub> =5V; I <sub>C</sub> =0     |     |     | 10  | μA   |
| h <sub>FE</sub>      | DC current gain                      | I <sub>C</sub> =0.3A ; V <sub>CE</sub> =5V | 70  |     | 200 |      |
| f <sub>T</sub>       | Transition frequency                 | I <sub>C</sub> =0.1A ; V <sub>CE</sub> =5V |     | 8   |     | MHz  |

◆ h<sub>FE</sub> classifications

| Q      | R       |
|--------|---------|
| 70-140 | 100-200 |

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PACKAGE OUTLINE

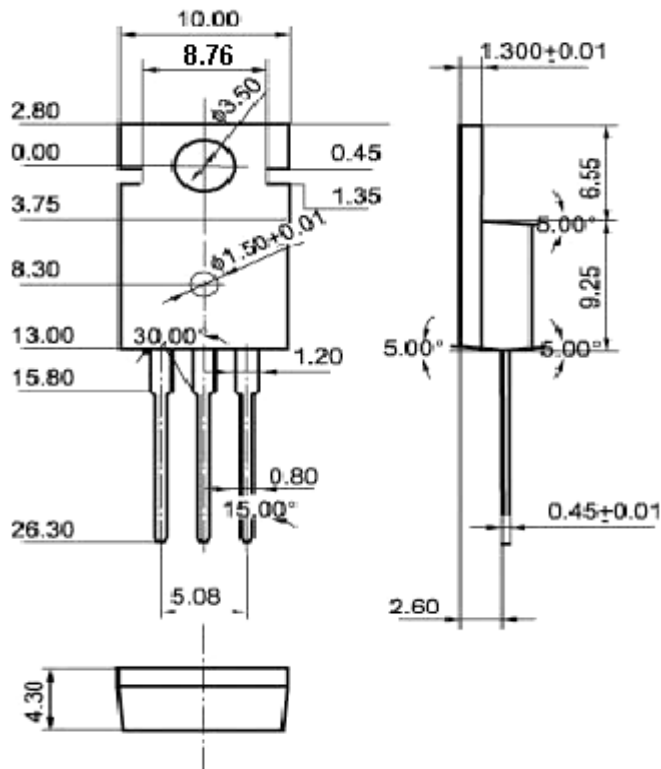


Fig.2 outline dimensions (unindicated tolerance:±0.10 mm)

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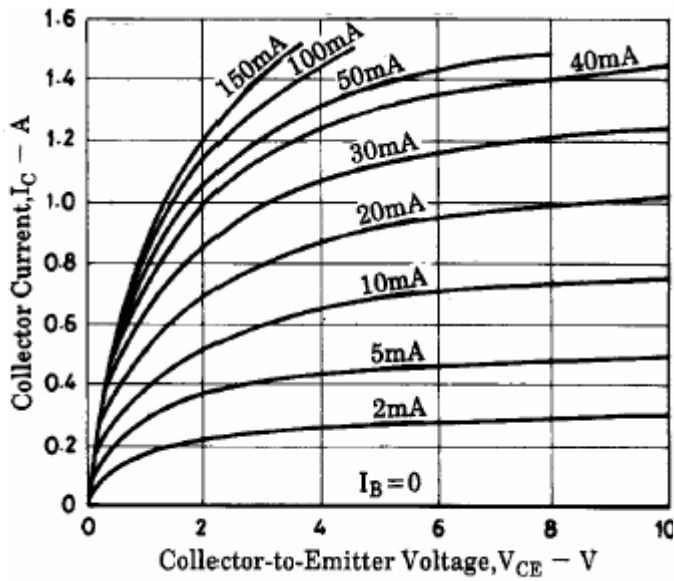


Fig.3 Static Characteristic

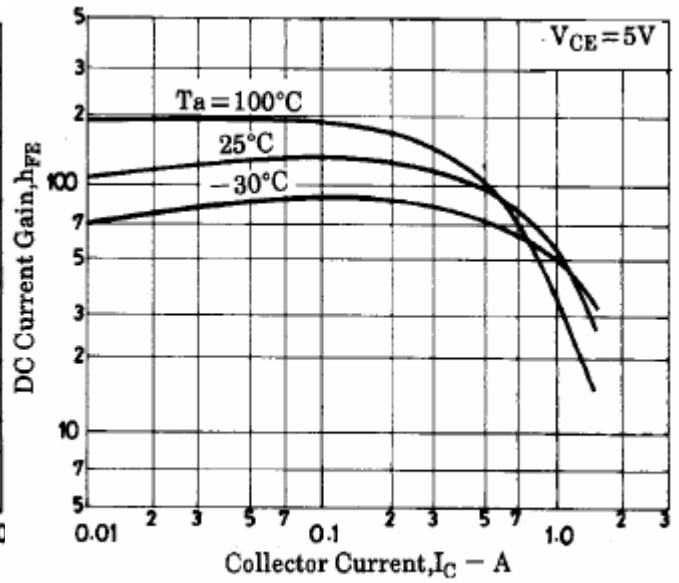


Fig.4 DC current Gain

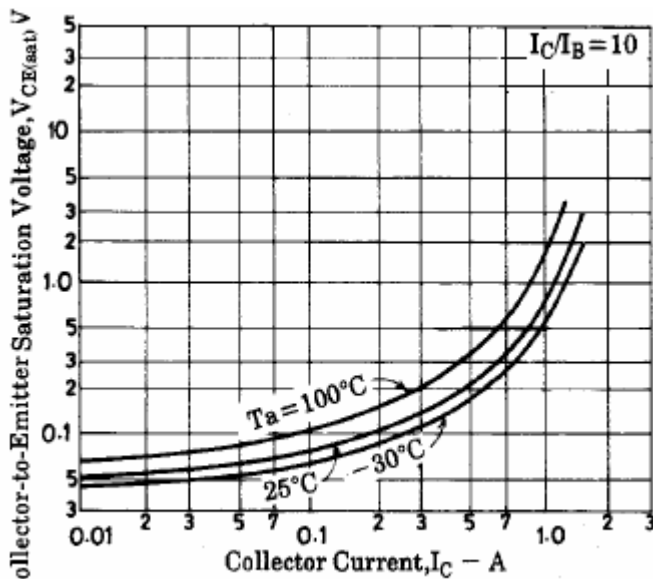


Fig.5 Collector-Emitter Saturation Voltage

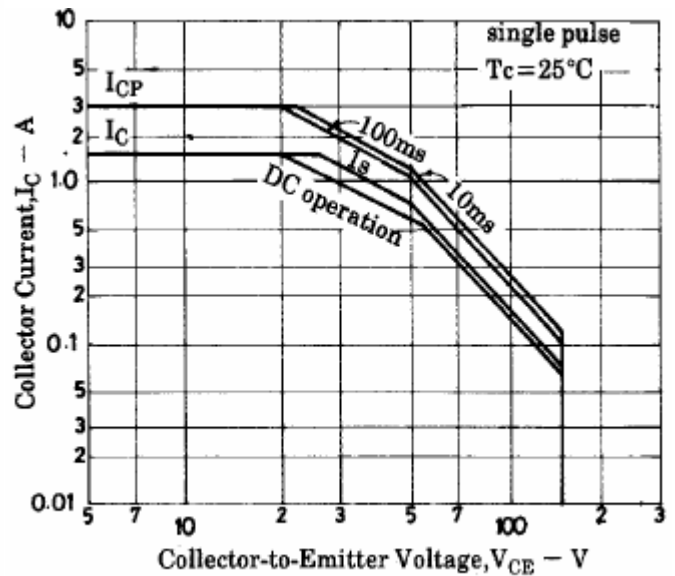


Fig.6 Safe Operating Area