

**Silicon Power Transistors**

**2SC5129**

**DESCRIPTION**

- With TO-3P(H)IS package
- High speed
- High voltage
- Low saturation voltage

**APPLICATIONS**

- Horizontal deflection output for high resolution display,colorTV
- High speed switching applications

**PINNING**

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

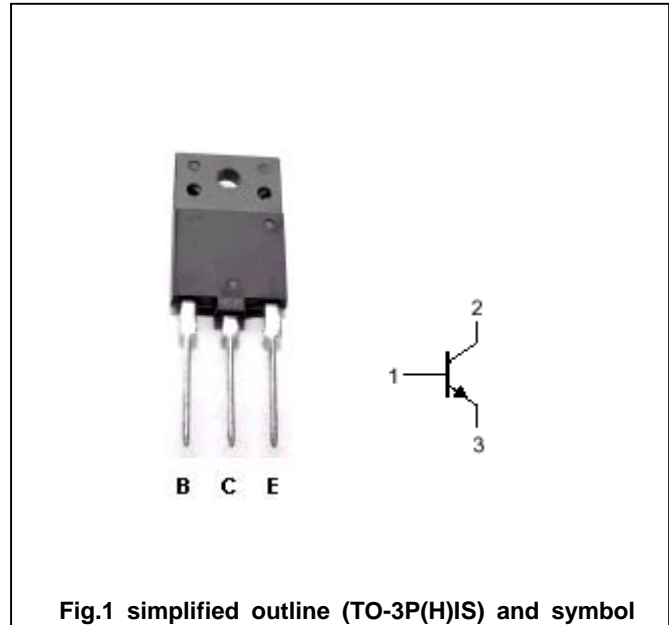


Fig.1 simplified outline (TO-3P(H)IS) and symbol

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

| SYMBOL           | PARAMETER                 | CONDITIONS         | VALUE   | UNIT |
|------------------|---------------------------|--------------------|---------|------|
| V <sub>CB0</sub> | Collector-base voltage    | Open emitter       | 1500    | V    |
| V <sub>CE0</sub> | Collector-emitter voltage | Open base          | 600     | V    |
| V <sub>EBO</sub> | Emitter-base voltage      | Open collector     | 5       | V    |
| I <sub>C</sub>   | Collector current         |                    | 10      | A    |
| I <sub>CM</sub>  | Collector current-Peak    |                    | 20      | A    |
| I <sub>B</sub>   | Base current              |                    | 5       | A    |
| P <sub>T</sub>   | Total power dissipation   | T <sub>C</sub> =25 | 50      | W    |
| 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 unless otherwise specified

| SYMBOL             | PARAMETER                            | CONDITIONS                                       | MIN | TYP. | MAX | UNIT |
|--------------------|--------------------------------------|--|-----|------|-----|------|
| V <sub>CEO</sub>   | Collector-emitter breakdown voltage  | I <sub>C</sub> =10mA ; I <sub>B</sub> =0         | 600 |      |     | V    |
| V <sub>CEsat</sub> | Collector-emitter saturation voltage | I <sub>C</sub> =6A I <sub>B</sub> =1.5A          |     |      | 3.0 | V    |
| V <sub>BEsat</sub> | Base-emitter saturation voltage      | I <sub>C</sub> =6A I <sub>B</sub> =1.5A          |     |      | 1.4 | V    |
| I <sub>CBO</sub>   | Collector cut-off current            | V <sub>CB</sub> =1500V I <sub>E</sub> =0         |     |      | 1   | mA   |
| I <sub>EBO</sub>   | Emitter cut-off current              | V <sub>EB</sub> =5V; I <sub>C</sub> =0           |     |      | 10  | μ A  |
| h <sub>FE-1</sub>  | DC current gain                      | I <sub>C</sub> =1A ; V <sub>CE</sub> =5V         | 10  |      | 30  |      |
| h <sub>FE-2</sub>  | DC current gain                      | I <sub>C</sub> =6A ; V <sub>CE</sub> =5V         | 4   |      | 8   |      |
| C <sub>ob</sub>    | Collector output capacitance         | I <sub>E</sub> =0 ; V <sub>CB</sub> =10V, f=1MHz |     | 135  |     | pF   |
| f <sub>T</sub>     | Transition frequency                 | I <sub>C</sub> =0.1A ; V <sub>CE</sub> =10V      |     | 1.7  |     | MHz  |

Switching times (inductive load)

|                |              |  |  |  |     |     |
|----------------|--------------|--|--|--|-----|-----|
| t <sub>s</sub> | Storage time | I <sub>CP</sub> =5A; I <sub>B1(end)</sub> =2A<br>f <sub>H</sub> =64kHz |  |  | 4.0 | μ s |
| t <sub>f</sub> | Fall time    |  |  |  | 0.3 | μ s |

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PACKAGE OUTLINE

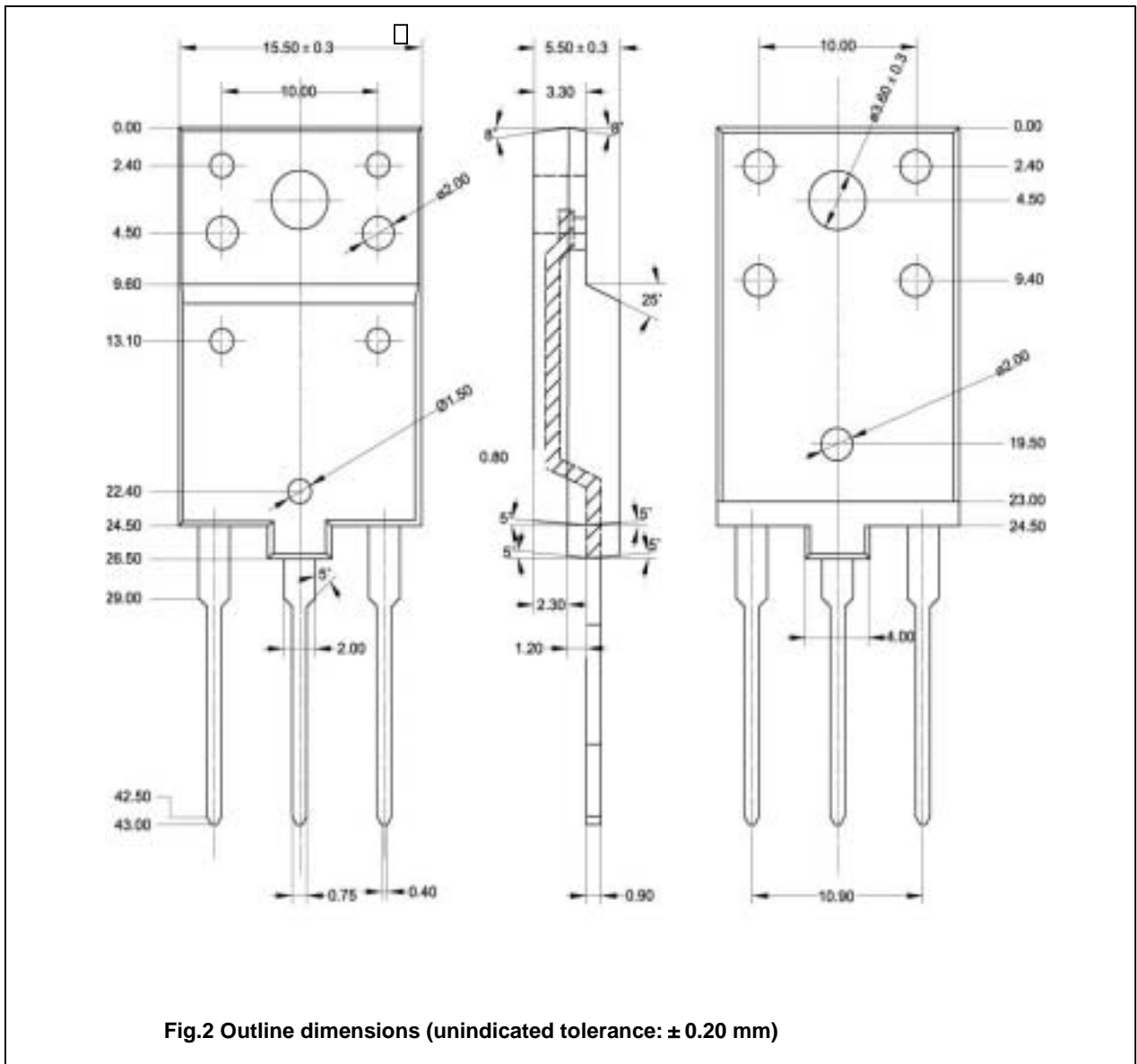


Fig.2 Outline dimensions (unindicated tolerance: ± 0.20 mm)