

**Silicon PNP Power Transistors**

**2SB713**

**DESCRIPTION**

- With TO-3PN package
- Wide area of safe operation
- Excellent good linearity of  $h_{FE}$

**APPLICATIONS**

- For high power amplifier applications

**PINNING**

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

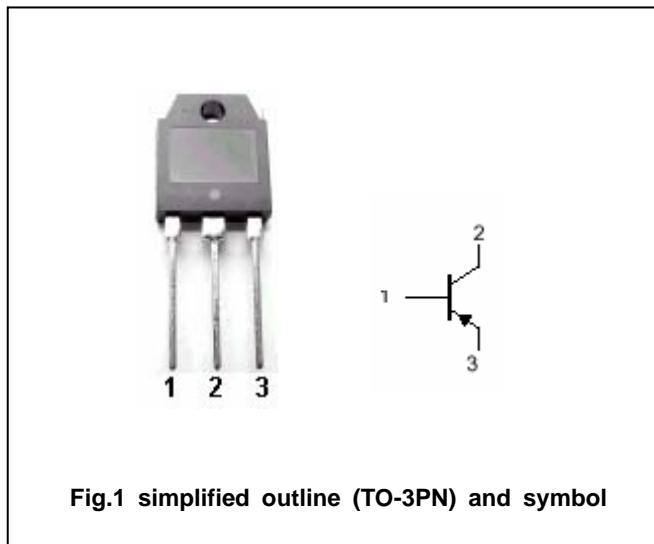


Fig.1 simplified outline (TO-3PN) and symbol

**Absolute maximum ratings( $T_c=25$  )**

| SYMBOL    | PARAMETER                   | CONDITIONS     | VALUE   | UNIT |
|-----------|-----------------------------|----------------|---------|------|
| $V_{CBO}$ | Collector-base voltage      | Open emitter   | -200    | V    |
| $V_{CEO}$ | Collector-emitter voltage   | Open base      | -140    | V    |
| $V_{EBO}$ | Emitter-base voltage        | Open collector | -5      | V    |
| $I_C$     | Collector current (DC)      |                | -9      | A    |
| $I_{CP}$  | Collector current (Pulse)   |                | -15     | A    |
| $P_C$     | Collector power dissipation | $T_c=25$       | 100     | W    |
| $T_j$     | 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>CEsat</sub> | Collector-emitter saturation voltage | I <sub>C</sub> =-7A; I <sub>B</sub> =-0.7A  |     |      | -2.0 | V    |
| V <sub>BE</sub>    | Base-emitter on voltage              | I <sub>C</sub> =-7A; V <sub>CE</sub> =-5V   |     |      | -1.8 | V    |
| I <sub>CBO</sub>   | Collector cut-off current            | V <sub>CB</sub> =-140V; I <sub>E</sub> =0   |     |      | -50  | μA   |
| I <sub>EBO</sub>   | Emitter cut-off current              | V <sub>EB</sub> =-3V; I <sub>C</sub> =0     |     |      | -50  | μA   |
| h <sub>FE-1</sub>  | DC current gain                      | I <sub>C</sub> =-20mA; V <sub>CE</sub> =-5V | 20  |      |      |      |
| h <sub>FE-2</sub>  | DC current gain                      | I <sub>C</sub> =-1A; V <sub>CE</sub> =-5V   | 40  |      | 200  |      |
| h <sub>FE-3</sub>  | DC current gain                      | I <sub>C</sub> =-7A; V <sub>CE</sub> =-5V   | 15  |      |      |      |
| f <sub>T</sub>     | Transition frequency                 | I <sub>C</sub> =-0.5A; V <sub>CE</sub> =-5V |     | 7    |      | MHz  |
| C <sub>OB</sub>    | Collector output capacitance         | f=1MHz; V <sub>CB</sub> =-10V               |     | 220  |      | pF   |

◆ h<sub>FE-2</sub> Classifications

| R     | Q      | P       |
|-------|--------|---------|
| 40-80 | 60-120 | 100-200 |

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PACKAGE OUTLINE

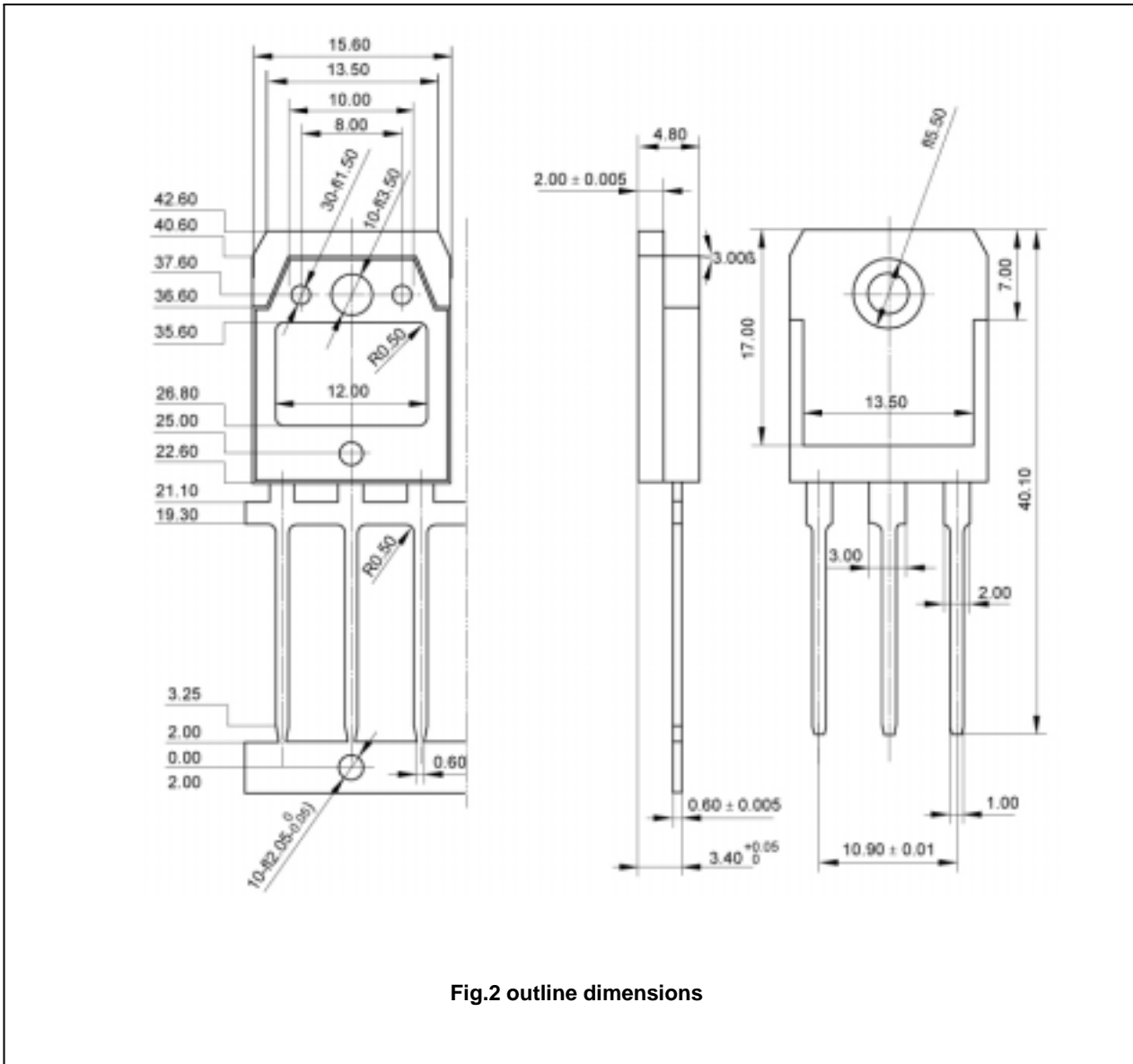


Fig.2 outline dimensions