

Silicon PNP Power Transistors

MJ15004

DESCRIPTION

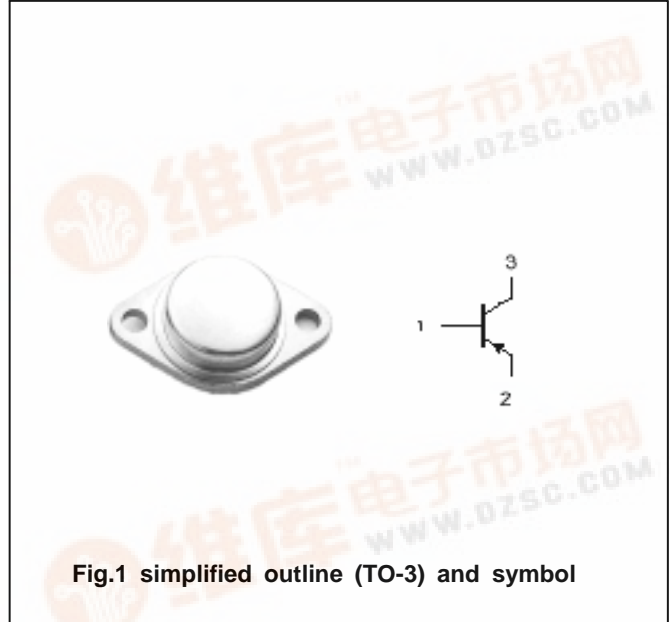
- With TO-3 package
- Complement to type MJ15003
- Excellent safe operating area

APPLICATIONS

- For high power audio, disk head positioners and other linear applications

PINNING(see Fig.2)

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



Absolute maximum ratings(Ta= )

| SYMBOL           | PARAMETER                 | CONDITIONS         | VALUE   | UNIT |
|------------------|---------------------------|--------------------|---------|------|
| V <sub>CBO</sub> | Collector-base voltage    | Open emitter       | -140    | V    |
| V <sub>CEO</sub> | Collector-emitter voltage | Open base          | -140    | V    |
| V <sub>EBO</sub> | Emitter-base voltage      | Open collector     | -5      | V    |
| I <sub>C</sub>   | Collector current         |                    | -20     | A    |
| I <sub>B</sub>   | Base current              |                    | -5      | A    |
| I <sub>E</sub>   | Emitter current           |                    | 25      | A    |
| P <sub>D</sub>   | Total power dissipation   | T <sub>C</sub> =25 | 250     | W    |
| T <sub>j</sub>   | Junction temperature      |                    | 200     |      |
| T <sub>stg</sub> | Storage temperature       |                    | -65~200 |      |

THERMAL CHARACTERISTICS

| SYMBOL              | PARAMETER                           | MAX | UNIT |
|---------------------|-------------------------------------|-----|------|
| R <sub>th j-c</sub> | Thermal resistance junction to case | 0.7 | /W   |

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## CHARACTERISTICS

T<sub>j</sub>=25 unless otherwise specified

| SYMBOL                | PARAMETER  | CONDITIONS  | MIN  | TYP. | MAX          | UNIT |
|-----------------------|--|---|------|------|--------------|------|
| V <sub>CEO(SUS)</sub> | Collector-emitter sustaining voltage                           | I <sub>C</sub> =-0.2A ; I <sub>B</sub> =0                                   | -140 |      |              | V    |
| V <sub>CEsat</sub>    | Collector-emitter saturation voltage                           | I <sub>C</sub> =-5A ; I <sub>B</sub> =-0.5A                                 |      |      | -1.0         | V    |
| V <sub>BE</sub>       | Base-emitter on voltage  | I <sub>C</sub> =-5A ; V <sub>CE</sub> =-2V                                  |      |      | -2.0         | V    |
| I <sub>CEO</sub>      | Collector cut-off current                                      | V <sub>CE</sub> =-140V ; I <sub>B</sub> =0                                  |      |      | -0.25        | mA   |
| I <sub>CEX</sub>      | Collector cut-off current                                      | V <sub>CE</sub> =-140V ; V <sub>BE(off)</sub> =-1.5V<br>T <sub>C</sub> =150 |      |      | -0.1<br>-2.0 | mA   |
| I <sub>EBO</sub>      | Emitter cut-off current  | V <sub>EB</sub> =-5V ; I <sub>C</sub> =0                                    |      |      | -0.1         | mA   |
| h <sub>FE</sub>       | DC current gain  | I <sub>C</sub> =-5A ; V <sub>CE</sub> =-2V                                  | 25   |      | 150          |      |
| I <sub>s/b</sub>      | Second breakdown collector current<br>With base forward biased | V <sub>CE</sub> =-50Vdc,t=1 s, Nonrepetitive                                | -5   |      |              | A    |
|                       |  | V <sub>CE</sub> =-100Vdc,t=1 s, Nonrepetitive                               | -1   |      |              |      |
| C <sub>OB</sub>       | Output capacitance   | I <sub>E</sub> =0 ; V <sub>CB</sub> =-10V ; f=1.0MHz                        |      |      | 1000         | pF   |
| f <sub>T</sub>        | Transition frequency   | I <sub>C</sub> =-0.5A ; V <sub>CE</sub> =-10V ; f=0.5MHz                    | 2    |      |              | MHz  |

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PACKAGE OUTLINE

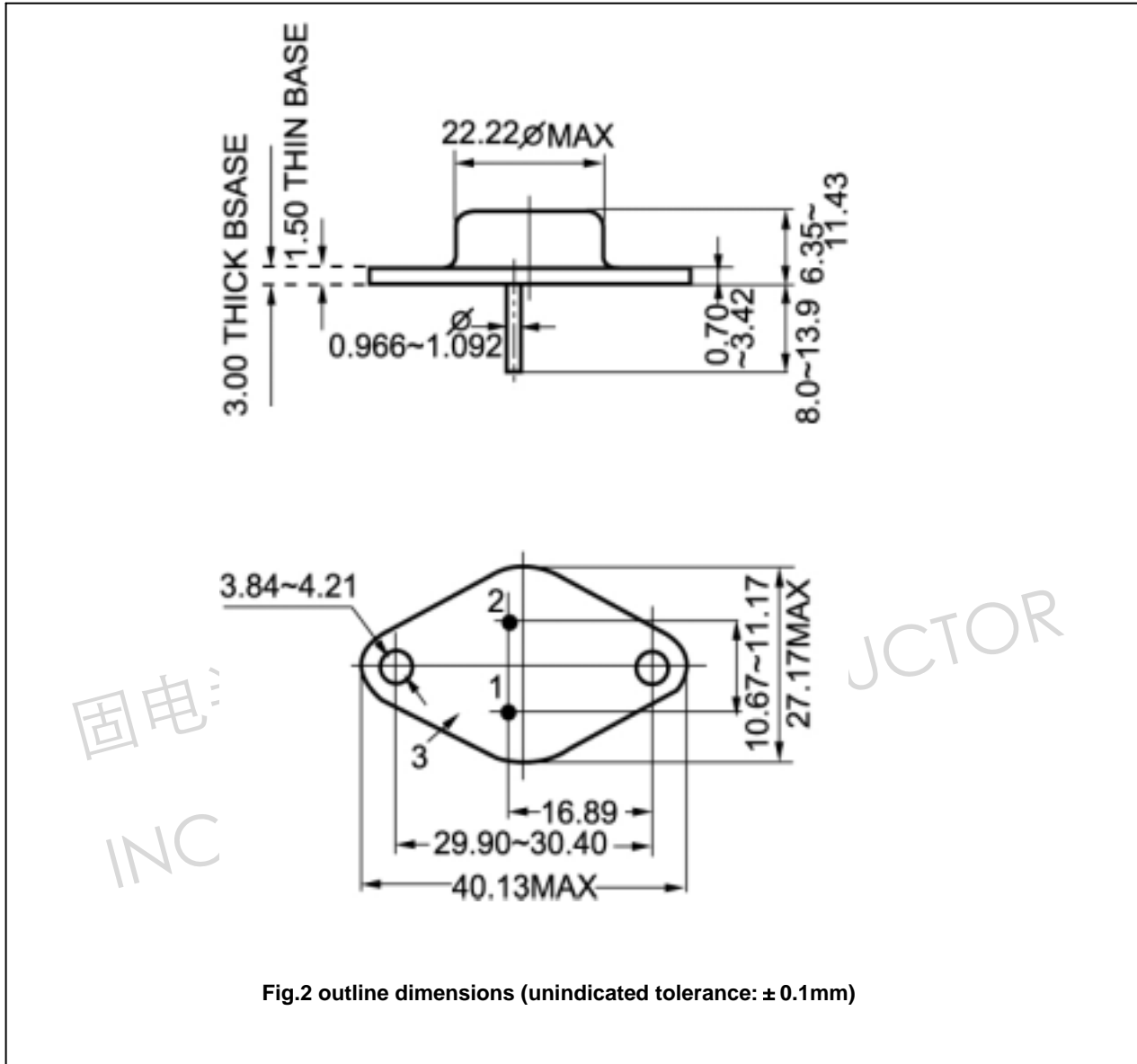


Fig.2 outline dimensions (unindicated tolerance: ± 0.1mm)