

## Silicon NPN Power Transistors

## 2N5758 2N5759 2N5760

## DESCRIPTION

- With TO-3 package
- Low collector saturation voltage
- Excellent safe operating area

## APPLICATIONS

- For use in high power audio amplifier applications and high voltage switching regulator circuits

## PINNING

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

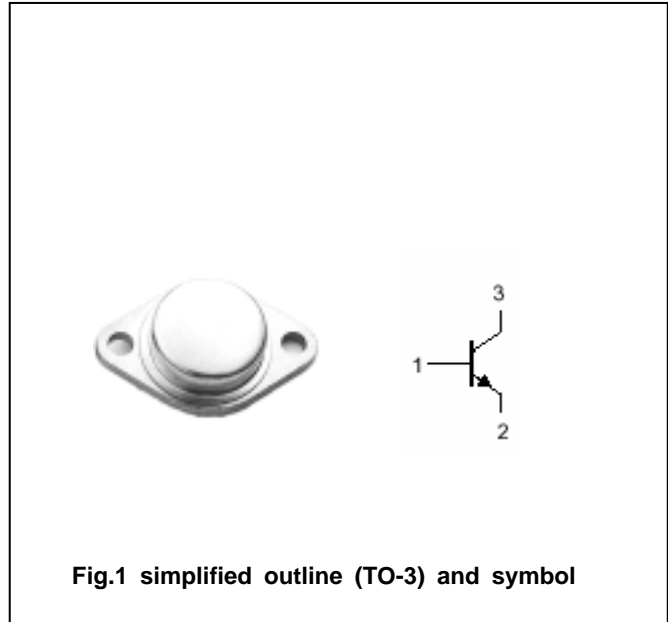


Fig.1 simplified outline (TO-3) and symbol

## Absolute maximum ratings(Ta= )

| SYMBOL           | PARAMETER                 | CONDITIONS         | VALUE   | UNIT |
|------------------|---------------------------|--------------------|---------|------|
| V <sub>CBO</sub> | Collector-base voltage    | 2N5758             | 100     | V    |
|                  |                           | 2N5759             | 120     |      |
|                  |                           | 2N5760             | 140     |      |
| V <sub>CEO</sub> | Collector-emitter voltage | 2N5758             | 100     | V    |
|                  |                           | 2N5759             | 120     |      |
|                  |                           | 2N5760             | 140     |      |
| V <sub>EBO</sub> | Emitter-base voltage      | Open collector     | 7       | V    |
| I <sub>C</sub>   | Collector current         |                    | 6       | A    |
| I <sub>CM</sub>  | Collector current-peak    |                    | 10      | A    |
| I <sub>B</sub>   | Base current              |                    | 4       | A    |
| P <sub>D</sub>   | Total Power Dissipation   | T <sub>C</sub> =25 | 150     | W    |
| T <sub>j</sub>   | Junction temperature      |                    | 150     |      |
| T <sub>stg</sub> | Storage temperature       |                    | -65~200 |      |

## THERMAL CHARACTERISTICS

| SYMBOL              | PARAMETER                           | VALUE | UNIT |
|---------------------|-------------------------------------|-------|------|
| R <sub>th j-c</sub> | Thermal resistance junction to case | 1.17  | /W   |

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## CHARACTERISTICS

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

| SYMBOL                | PARAMETER                            |        | CONDITIONS  | MIN | TYP. | MAX        | UNIT |
|-----------------------|--------------------------------------|--------|---|-----|------|------------|------|
| V <sub>CE0(SUS)</sub> | Collector-emitter sustaining voltage | 2N5758 | I <sub>C</sub> =0.2A ; I <sub>B</sub> =0  | 100 |      |            | V    |
|                       |                                      | 2N5759 |   | 120 |      |            |      |
|                       |                                      | 2N5760 |   | 140 |      |            |      |
| V <sub>CEsat-1</sub>  | Collector-emitter saturation voltage |        | I <sub>C</sub> =3A ; I <sub>B</sub> =0.3A   |     |      | 1.0        | V    |
| V <sub>CEsat-2</sub>  | Collector-emitter saturation voltage |        | I <sub>C</sub> =6A ; I <sub>B</sub> =1.2A   |     |      | 2.0        | V    |
| V <sub>BE</sub>       | Base-emitter on voltage              |        | I <sub>C</sub> =3A ; V <sub>CE</sub> =2V  |     |      | 1.5        | V    |
| I <sub>CEO</sub>      | Collector cut-off current            | 2N5758 | V <sub>CE</sub> =50V ; I <sub>B</sub> =0  |     |      | 1.0        | mA   |
|                       |                                      | 2N5759 | V <sub>CE</sub> =60V ; I <sub>B</sub> =0  |     |      |            |      |
|                       |                                      | 2N5760 | V <sub>CE</sub> =70V ; I <sub>B</sub> =0  |     |      |            |      |
| I <sub>CEX</sub>      | Collector cut-off current            |        | V <sub>CE</sub> =ratedV <sub>CB</sub> ; V <sub>BE(off)</sub> =1.5V<br>T <sub>C</sub> =150 |     |      | 1.0<br>5.0 | mA   |
| I <sub>CBO</sub>      | Collector cut-off current            |        | V <sub>CE</sub> =ratedV <sub>CB</sub> ; I <sub>B</sub> =0                                 |     |      | 1.0        | mA   |
| I <sub>EBO</sub>      | Emitter cut-off current              |        | V <sub>EB</sub> =7V ; I <sub>C</sub> =0   |     |      | 1.0        | mA   |
| h <sub>FE-1</sub>     | DC current gain                      | 2N5758 | I <sub>C</sub> =3A ; V <sub>CE</sub> =2V  | 25  |      | 100        |      |
|                       |                                      | 2N5759 |   | 20  | 80   |            |      |
|                       |                                      | 2N5760 |   | 15  | 60   |            |      |
| h <sub>FE-2</sub>     | DC current gain                      |        | I <sub>C</sub> =6A ; V <sub>CE</sub> =2V  | 5.0 |      |            |      |
| C <sub>OB</sub>       | Output capacitance                   |        | I <sub>E</sub> =0 ; V <sub>CB</sub> =10V ; f=0.1MHz                                       |     |      | 300        | pF   |
| f <sub>T</sub>        | Transition frequency                 |        | I <sub>C</sub> =0.5A ; V <sub>CE</sub> =20V   | 1.0 |      |            | MHz  |

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PACKAGE OUTLINE

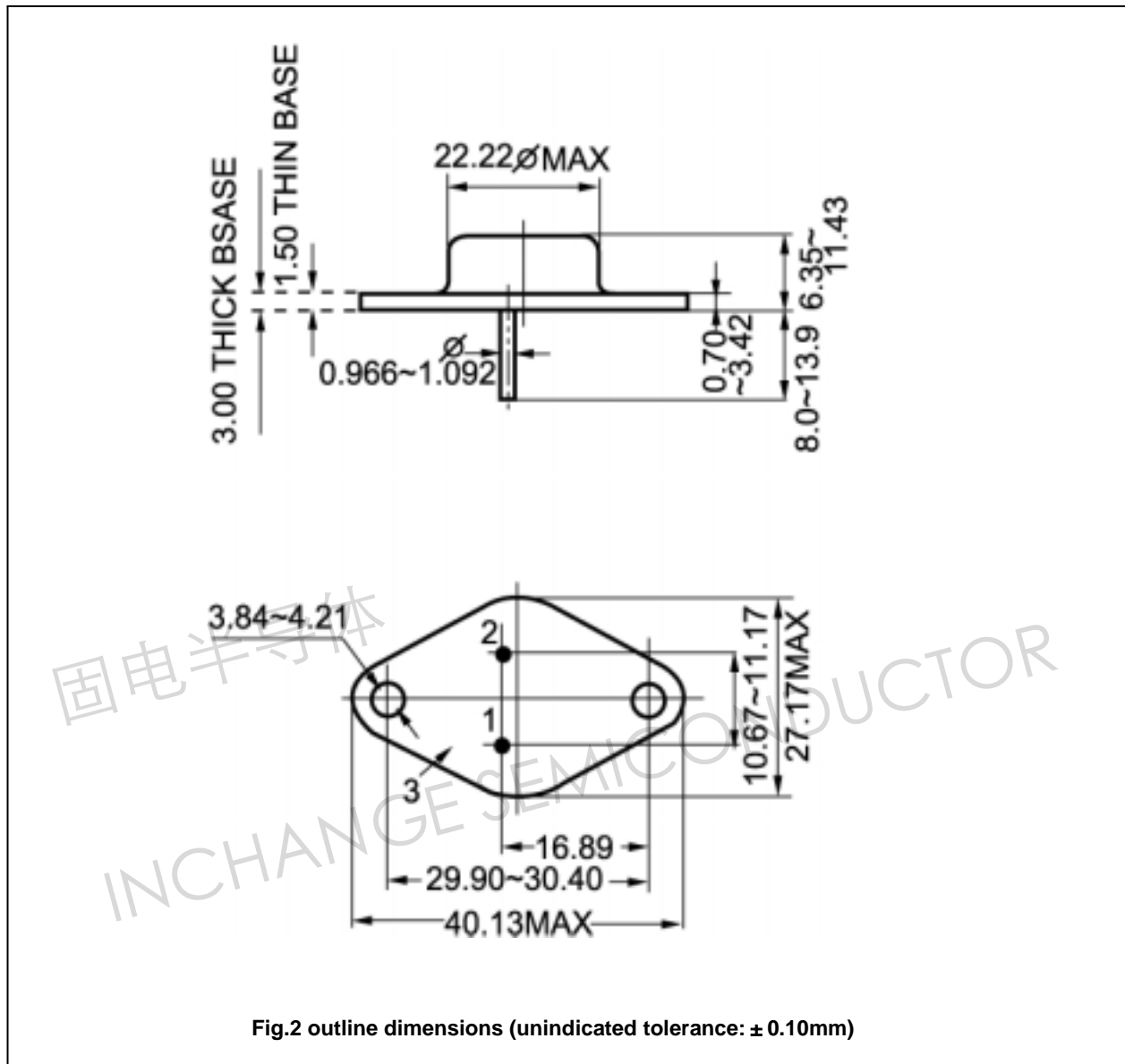


Fig.2 outline dimensions (unindicated tolerance: ± 0.10mm)