

## SavantIC Semiconductor

## Product Specification

## Silicon NPN Power Transistors

## 2SD797

## DESCRIPTION

- With TO-3 package
- High current capability
- High power dissipation

## APPLICATIONS

- High power amplifier applications
- High power switching applications
- DC-DC converter applications
- Regulator applications

## PINNING(see Fig.2)

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

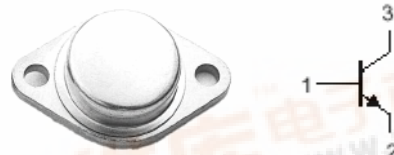


Fig.1 simplified outline (TO-3) and symbol

Absolute maximum ratings( $T_a = \square$ )

| SYMBOL    | PARAMETER                   | CONDITIONS        | VALUE   | UNIT      |
|-----------|-----------------------------|-------------------|---------|-----------|
| $V_{CBO}$ | Collector-base voltage      | Open emitter      | 100     | V         |
| $V_{CEO}$ | Collector-emitter voltage   | Open base         | 80      | V         |
| $V_{EBO}$ | Emitter-base voltage        | Open collector    | 7       | V         |
| $I_C$     | Collector current           |                   | 30      | A         |
| $I_B$     | Base current                |                   | 8       | A         |
| $P_C$     | Collector power dissipation | $T_C = 25\square$ | 200     | W         |
| $T_j$     | Junction temperature        |                   | 175     | $\square$ |
| $T_{stg}$ | Storage temperature         |                   | -65~175 | $\square$ |

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## CHARACTERISTICS

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

| SYMBOL               | PARAMETER                            | CONDITIONS                                         | MIN | TYP. | MAX | UNIT |
|----------------------|--------------------------------------|----------------------------------------------------|-----|------|-----|------|
| V <sub>(BR)CEO</sub> | Collector-emitter breakdown voltage  | I <sub>C</sub> =50mA ; I <sub>B</sub> =0           | 80  |      |     | V    |
| V <sub>CEsat</sub>   | Collector-emitter saturation voltage | I <sub>C</sub> =15A; I <sub>B</sub> =3A            |     |      | 1.5 | V    |
| V <sub>BEsat</sub>   | Base-emitter saturation voltage      | I <sub>C</sub> =15A; I <sub>B</sub> =3A            |     |      | 2.5 | V    |
| I <sub>CBO</sub>     | Collector cut-off current            | V <sub>CB</sub> =100V; I <sub>E</sub> =0           |     |      | 0.1 | mA   |
| I <sub>EBO</sub>     | Emitter cut-off current              | V <sub>EB</sub> =7V; I <sub>C</sub> =0             |     |      | 0.1 | mA   |
| h <sub>FE-1</sub>    | DC current gain                      | I <sub>C</sub> =1A ; V <sub>CE</sub> =5V           | 60  |      | 200 |      |
| h <sub>FE-2</sub>    | DC current gain                      | I <sub>C</sub> =15A ; V <sub>CE</sub> =5V          | 10  |      |     |      |
| C <sub>OB</sub>      | Output capacitance                   | I <sub>E</sub> =0 ; V <sub>CB</sub> =10V; f=1.0MHz |     | 400  |     | pF   |
| f <sub>T</sub>       | Transition frequency                 | I <sub>C</sub> =1A ; V <sub>CE</sub> =5V           |     | 1.5  |     | MHz  |

## Switching times

|                  |              |                                                                                       |  |     |  |    |
|------------------|--------------|---------------------------------------------------------------------------------------|--|-----|--|----|
| t <sub>on</sub>  | Turn-on time | R <sub>L</sub> =10Ω; I <sub>B1</sub> =-I <sub>B2</sub> =0.5A;<br>V <sub>CC</sub> =50V |  | 2.5 |  | μs |
| t <sub>stg</sub> | Storage time |                                                                                       |  | 6.0 |  | μs |
| t <sub>f</sub>   | Fall time    |                                                                                       |  | 1.5 |  | μs |

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PACKAGE OUTLINE

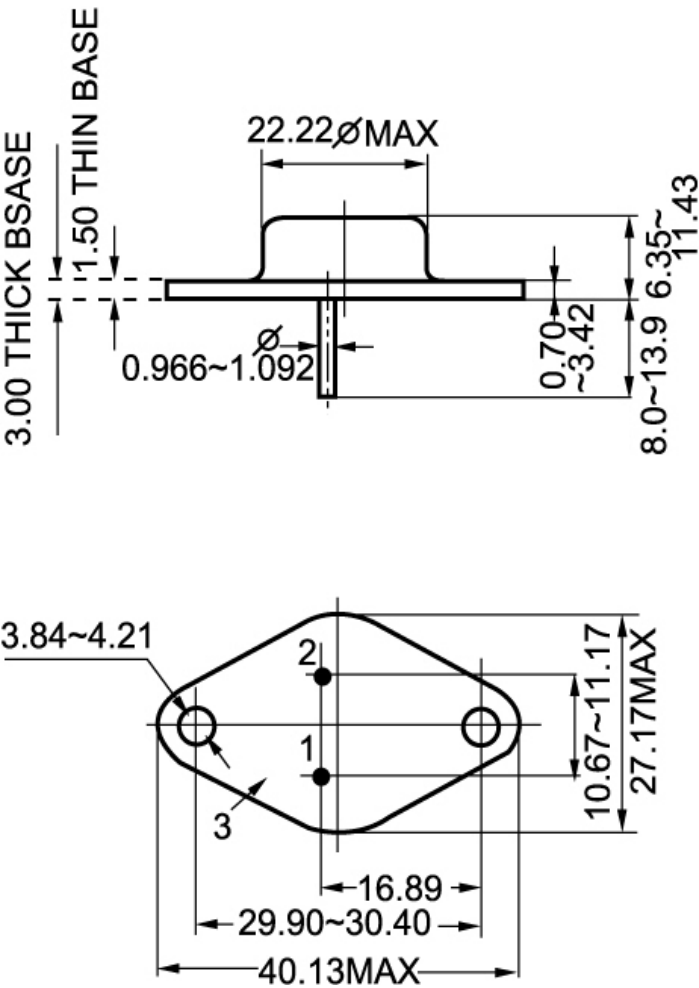


Fig.2 outline dimensions (unindicated tolerance:±0.1mm)