

## Silicon NPN Power Transistors

## 2SD198

## DESCRIPTION

- With TO-3 package
- High breakdown voltage

## APPLICATIONS

- voltage regulator
- Inverters
- Switching mode power supply

## PINNING(see Fig.2)

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

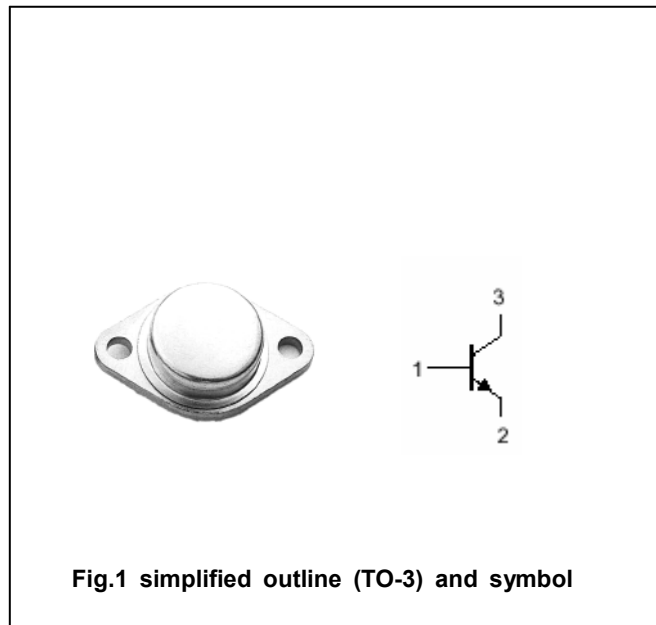


Fig.1 simplified outline (TO-3) and symbol

Absolute maximum ratings( $T_a =$ )

| SYMBOL    | PARAMETER                   | CONDITIONS     | VALUE   | UNIT |
|-----------|-----------------------------|----------------|---------|------|
| $V_{CBO}$ | Collector-base voltage      | Open emitter   | 300     | V    |
| $V_{CEO}$ | Collector-emitter voltage   | Open base      | 300     | V    |
| $V_{EBO}$ | Emitter-base voltage        | Open collector | 6       | V    |
| $I_C$     | Collector current           |                | 1       | A    |
| $P_C$     | Collector power dissipation | $T_C = 75$     | 25      | W    |
| $T_j$     | Junction temperature        |                | 165     |      |
| $T_{stg}$ | Storage temperature         |                | -55~200 |      |

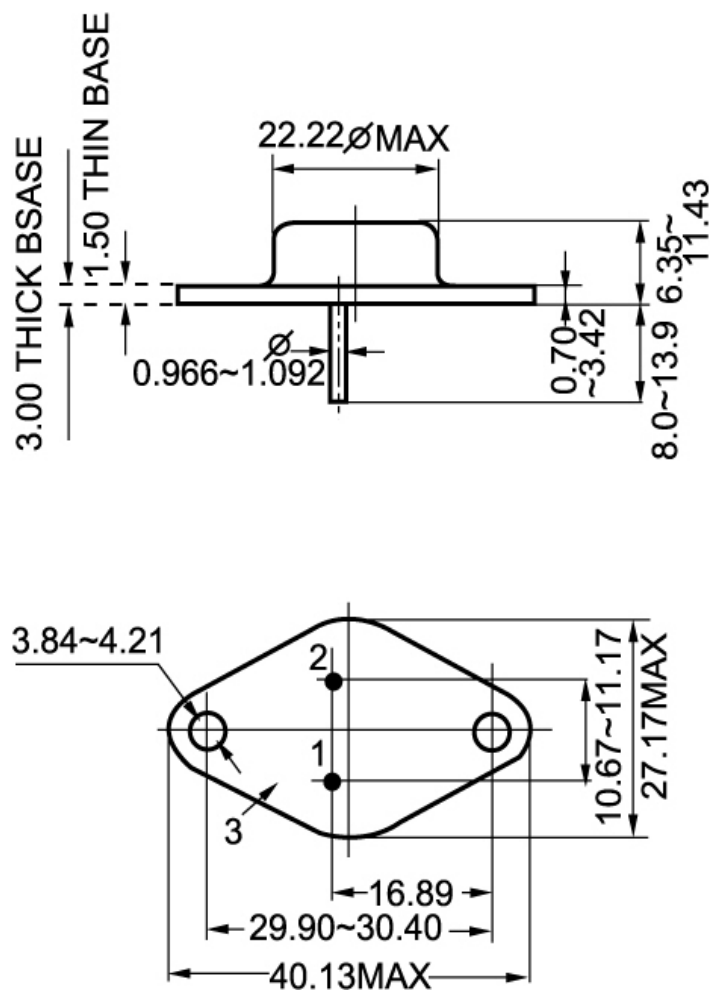
**Silicon NPN Power Transistors****2SD198****CHARACTERISTICS**T<sub>j</sub>=25 unless otherwise specified

| SYMBOL                | PARAMETER                            | CONDITIONS                                  | MIN | TYP. | MAX | UNIT |
|-----------------------|--------------------------------------|---------------------------------------------|-----|------|-----|------|
| V <sub>CEO(SUS)</sub> | Collector-emitter sustaining voltage | I <sub>C</sub> =100mA ; I <sub>B</sub> =0   | 300 |      |     | V    |
| V <sub>(BR)EBO</sub>  | Emitter-base breakdown voltage       | I <sub>E</sub> =1mA ; I <sub>C</sub> =0     | 6   |      |     | V    |
| V <sub>CEsat</sub>    | Collector-emitter saturation voltage | I <sub>C</sub> =1.0A; I <sub>B</sub> =0.1A  |     |      | 1.0 | V    |
| V <sub>BEsat</sub>    | Base-emitter saturation voltage      | I <sub>C</sub> =1.0A; I <sub>B</sub> =0.1A  |     |      | 1.5 | V    |
| I <sub>CBO</sub>      | Collector cut-off current            | V <sub>CB</sub> =300V; I <sub>E</sub> =0    |     |      | 0.1 | mA   |
| I <sub>EBO</sub>      | Emitter cut-off current              | V <sub>EB</sub> =6V; I <sub>C</sub> =0      |     |      | 0.1 | mA   |
| h <sub>FE</sub>       | DC current gain                      | I <sub>C</sub> =0.1A ; V <sub>CE</sub> =5V  | 30  |      | 300 |      |
| f <sub>T</sub>        | Transition frequency                 | I <sub>C</sub> =0.5A ; V <sub>CE</sub> =10V |     | 25   |     | MHz  |

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## PACKAGE OUTLINE

Fig.2 outline dimensions (unindicated tolerance:  $\pm 0.1\text{mm}$ )