

Silicon NPN Power Transistors

2N3447

DESCRIPTION

- With TO-3 package
- Excellent safe operating area

APPLICATIONS

- Designed for medium-switching and amplifier applications.

PINNING

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

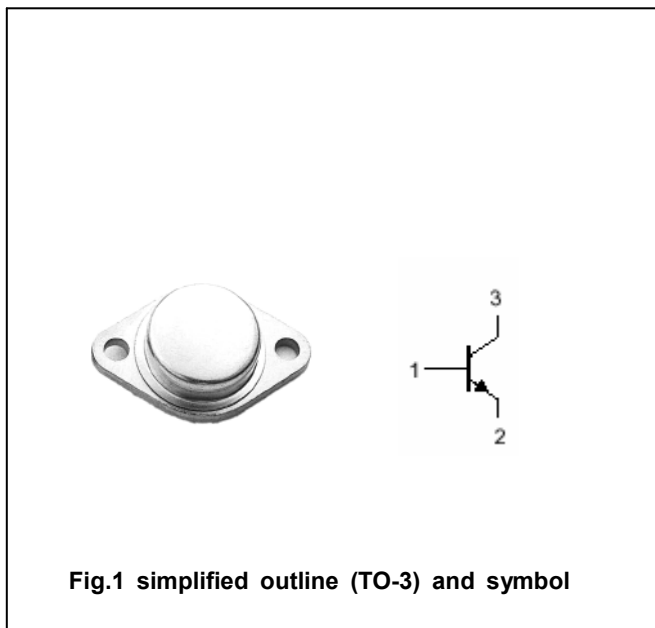


Fig.1 simplified outline (TO-3) and symbol

ABSOLUTE MAXIMUM RATINGS(Ta=25°C)

| SYMBOL           | PARAMETER                   | CONDITIONS           | VALUE   | UNIT |
|------------------|-----------------------------|----------------------|---------|------|
| V <sub>CBO</sub> | Collector-base voltage      | Open emitter         | 80      | V    |
| V <sub>CEO</sub> | Collector-emitter voltage   | Open base            | 60      | V    |
| V <sub>EBO</sub> | Emitter-base voltage        | Open collector       | 7       | V    |
| I <sub>C</sub>   | Collector current           |                      | 7.5     | A    |
| P <sub>C</sub>   | Collector power dissipation | T <sub>C</sub> =25°C | 115     | W    |
| T <sub>j</sub>   | Junction temperature        |                      | 150     | °C   |
| T <sub>stg</sub> | Storage temperature         |                      | -65~200 | °C   |

THERMAL CHARACTERISTICS

| SYMBOL               | PARAMETER                           | VALUE | UNIT |
|----------------------|-------------------------------------|-------|------|
| R <sub>(th) jc</sub> | Thermal resistance junction to case | 1.17  | °C/W |

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## CHARACTERISTICS

 $T_j=25^\circ\text{C}$  unless otherwise specified

| SYMBOL          | PARAMETER                            | CONDITIONS                        | MIN | TYP. | MAX | UNIT |
|-----------------|--------------------------------------|-----------------------------------|-----|------|-----|------|
| $V_{(BR)CEO}$   | Collector-emitter breakdown voltage  | $I_C=30\text{mA}; I_B=0$          | 60  |      |     | V    |
| $V_{CE(sat)-1}$ | Collector-emitter saturation voltage | $I_C=5\text{A}; I_B=0.5\text{A}$  |     |      | 1.5 | V    |
| $V_{CE(sat)-2}$ | Collector-emitter saturation voltage | $I_C=7\text{A}; I_B=1.5\text{A}$  |     |      | 3.0 | V    |
| $V_{BE(on)}$    | Base-emitter on voltage              | $I_C=5\text{A}; V_{CE}=5\text{V}$ |     |      | 1.5 | V    |
| $I_{CEO}$       | Collector cut-off current            | $V_{CE}=60\text{V}; I_B=0$        |     |      | 0.7 | mA   |
| $I_{CBO}$       | Collector cut-off current            | $V_{CB}=80\text{V}; I_E=0$        |     |      | 0.1 | mA   |
| $I_{EBO}$       | Emitter cut-off current              | $V_{EB}=7\text{V}; I_C=0$         |     |      | 0.1 | mA   |
| $h_{FE}$        | DC current gain                      | $I_C=5\text{A}; V_{CE}=5\text{V}$ | 40  |      | 120 |      |

PACKAGE OUTLINE

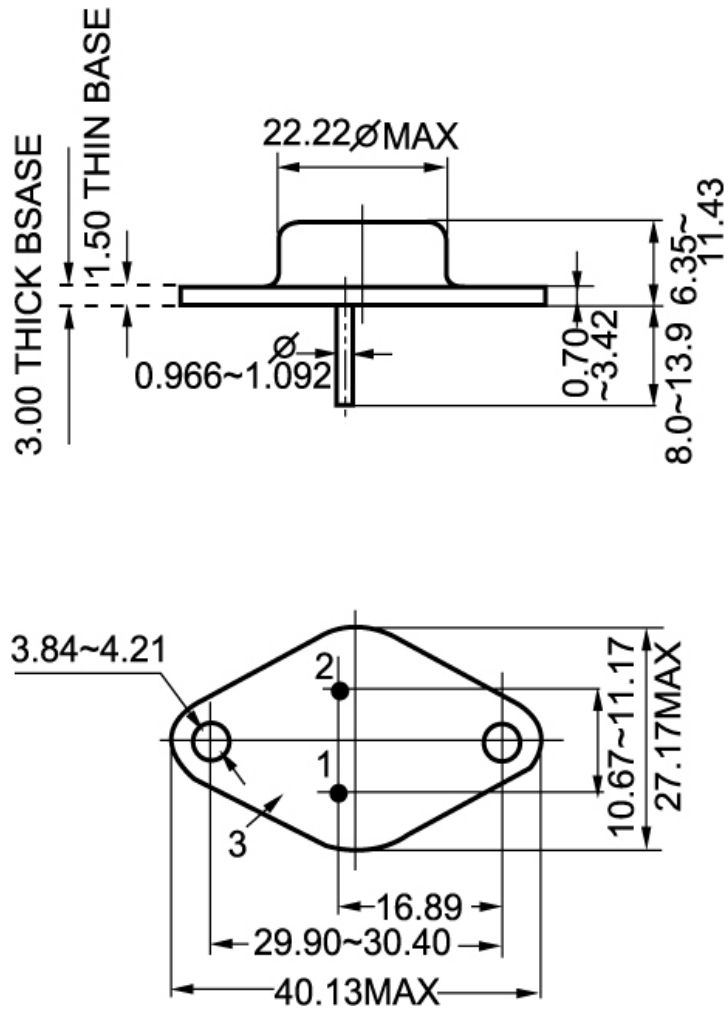


Fig.2 outline dimensions (unindicated tolerance:±0.1mm)