

Silicon NPN Power Transistors

2SD1407

DESCRIPTION

- With TO-220Fa package
- High breakdown voltage
- Low collector saturation voltage
- Complement to type 2SB1016

APPLICATIONS

- Power amplifier applications

PINNING

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

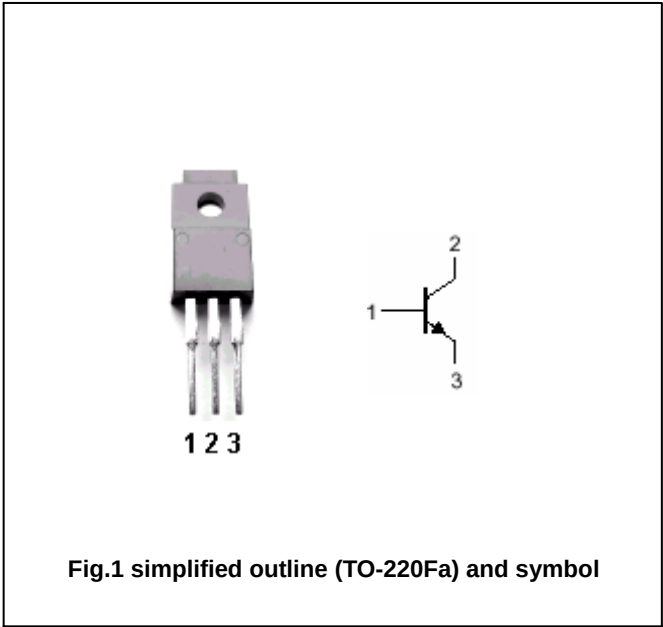


Fig.1 simplified outline (TO-220Fa) and symbol

Absolute maximum ratings(Ta=25°C)

| SYMBOL           | PARAMETER                   | CONDITIONS           | VALUE   | UNIT |
|------------------|-----------------------------|----------------------|---------|------|
| V <sub>CBO</sub> | Collector-base voltage      | Open emitter         | 100     | V    |
| V <sub>CEO</sub> | Collector -emitter voltage  | Open base            | 100     | V    |
| V <sub>EBO</sub> | Emitter-base voltage        | Open collector       | 5       | V    |
| I <sub>C</sub>   | Collector current           |                      | 5       | A    |
| I <sub>B</sub>   | Base current                |                      | 0.5     | A    |
| P <sub>C</sub>   | Collector power dissipation | T <sub>C</sub> =25°C | 30      | W    |
| T <sub>j</sub>   | Junction temperature        |                      | 150     | °C   |
| T <sub>stg</sub> | Storage temperature         |                      | -55~150 | °C   |

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## CHARACTERISTICS

Tj=25°C unless otherwise specified

| SYMBOL        | PARAMETER                            | CONDITIONS                  | MIN | TYP. | MAX | UNIT    |
|---------------|--------------------------------------|-----------------------------|-----|------|-----|---------|
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage  | $I_C=50mA; I_B=0$           | 100 |      |     | V       |
| $V_{CEsat}$   | Collector-emitter saturation voltage | $I_C=4A; I_B=0.4A$          |     |      | 2.0 | V       |
| $V_{BE}$      | Base-emitter voltage                 | $I_C=1A; V_{CE}=5V$         |     |      | 1.5 | V       |
| $I_{CBO}$     | Collector cut-off current            | $V_{CB}=100V; I_E=0$        |     |      | 100 | $\mu A$ |
| $I_{EBO}$     | Emitter cut-off current              | $V_{EB}=5V; I_C=0$          |     |      | 1.0 | mA      |
| $h_{FE-1}$    | DC current gain                      | $I_C=1A; V_{CE}=5V$         | 40  |      | 240 |         |
| $h_{FE-2}$    | DC current gain                      | $I_C=4A; V_{CE}=5V$         | 20  |      |     |         |
| $f_T$         | Transition frequency                 | $I_C=1A; V_{CE}=5V$         |     | 12   |     | MHz     |
| $C_{OB}$      | Collector output capacitance         | $f=1MHz; V_{CB}=10V; I_E=0$ |     | 100  |     | pF      |

◆  $h_{FE-1}$  Classifications

| R     | O      | Y       |
|-------|--------|---------|
| 40-80 | 70-140 | 120-240 |

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PACKAGE OUTLINE

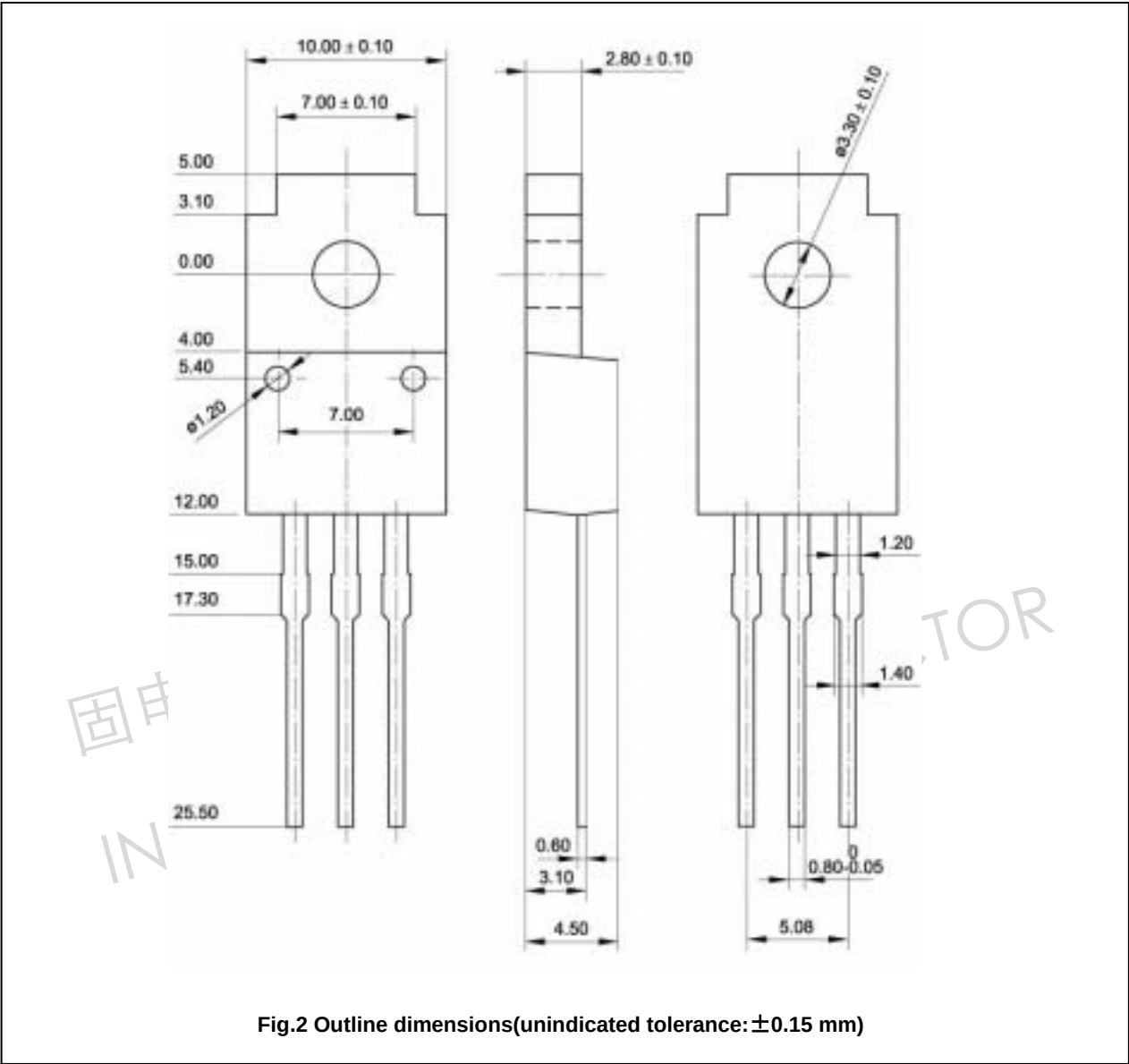


Fig.2 Outline dimensions(unindicated tolerance:  $\pm 0.15$  mm)

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