

Silicon PNP Power Transistors

2SA957 2SA958

DESCRIPTION

- With TO-220 package
- High breakdown voltage
- High power dissipation

APPLICATIONS

- For general purpose applications

PINNING

| PIN | DESCRIPTION                          |
|-----|--------------------------------------|
| 1   | Emitter                              |
| 2   | Collector;connected to mounting base |
| 3   | Base                                 |

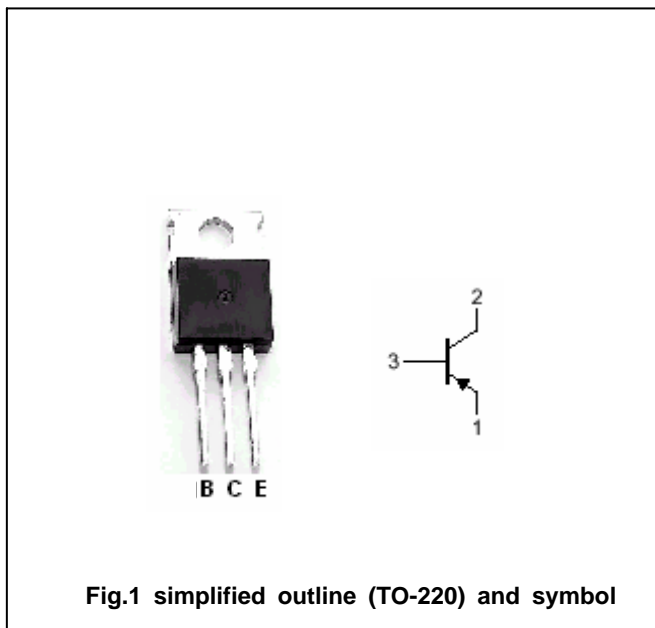


Fig.1 simplified outline (TO-220) and symbol

Absolute maximum ratings(Ta=25°C)

| SYMBOL           | PARAMETER                 | CONDITIONS           | VALUE   | UNIT |
|------------------|---------------------------|----------------------|---------|------|
| V <sub>CBO</sub> | Collector-base voltage    | 2SA957               | -150    | V    |
|                  |                           | 2SA958               | -200    |      |
| V <sub>CEO</sub> | Collector-emitter voltage | 2SA957               | -150    | V    |
|                  |                           | 2SA958               | -200    |      |
| V <sub>EBO</sub> | Emitter-base voltage      | Open collector       | -6      | V    |
| I <sub>C</sub>   | Collector current         |                      | -2.0    | A    |
| I <sub>B</sub>   | Base current              |                      | -1.0    | A    |
| P <sub>T</sub>   | Total 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

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

| SYMBOL               | PARAMETER                            | CONDITIONS                                    | MIN                                      | TYP. | MAX  | UNIT |                                           |
|----------------------|--------------------------------------|-----------------------------------------------|------------------------------------------|------|------|------|-------------------------------------------|
| V <sub>CEO(BR)</sub> | Collector-emitter breakdown voltage  | 2SA957                                        | I <sub>C</sub> =-25mA, I <sub>B</sub> =0 | -150 |      |      | V                                         |
|                      |                                      | 2SA958                                        |                                          | -200 |      |      |                                           |
| V <sub>CEsat</sub>   | Collector-emitter saturation voltage | I <sub>C</sub> =-0.7A; I <sub>B</sub> =-0.07A |                                          |      | -1.5 | V    |                                           |
| I <sub>CBO</sub>     | Collector cut-off current            | 2SA957                                        |                                          |      | -100 | μ A  |                                           |
|                      |                                      | 2SA958                                        |                                          |      |      |      | V <sub>CB</sub> =-200V; I <sub>E</sub> =0 |
| I <sub>EBO</sub>     | Emitter cut-off current              | V <sub>EB</sub> =-6V; I <sub>C</sub> =0       |                                          |      | -1.0 | mA   |                                           |
| h <sub>FE</sub>      | DC current gain                      | I <sub>C</sub> =-0.7A; V <sub>CE</sub> =-10V  | 40                                       |      |      |      |                                           |
| f <sub>T</sub>       | Transition frequency                 | I <sub>C</sub> =-0.2A; V <sub>CE</sub> =-12V  |                                          | 20   |      | MHz  |                                           |

Switching times resistive load

|                |              |                                                                                                                |  |     |  |     |
|----------------|--------------|----------------------------------------------------------------------------------------------------------------|--|-----|--|-----|
| t <sub>r</sub> | Rise time    | I <sub>C</sub> =-1.0A I <sub>B1</sub> =- I <sub>B2</sub> =-0.1A<br>R <sub>L</sub> =20 Ω ;V <sub>CC</sub> =-20V |  | 0.4 |  | μ s |
| t <sub>s</sub> | Storage time |                                                                                                                |  | 1.5 |  | μ s |
| t <sub>f</sub> | Fall time    |                                                                                                                |  | 0.5 |  | μ s |

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PACKAGE OUTLINE

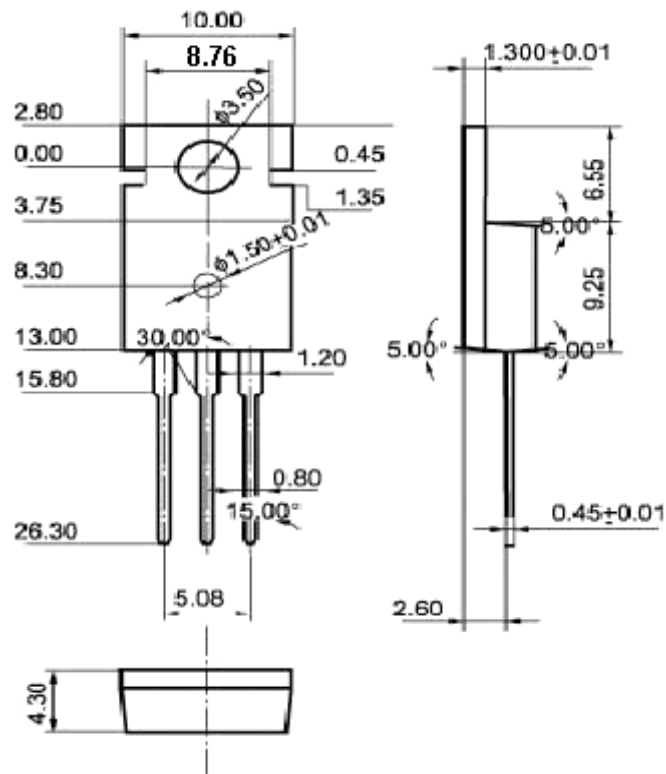


Fig.2 Outline dimensions(unindicated tolerance:  $\pm 0.10$  mm)