

**Silicon PNP Power Transistors**

**2SA814 2SA815**

**DESCRIPTION**

- With TO-220 package
- Complement to type 2SC1624/1625
- High breakdown voltage

**APPLICATIONS**

- Medium power amplifier applications
- Driver stage amplifier applications

**PINNING**

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

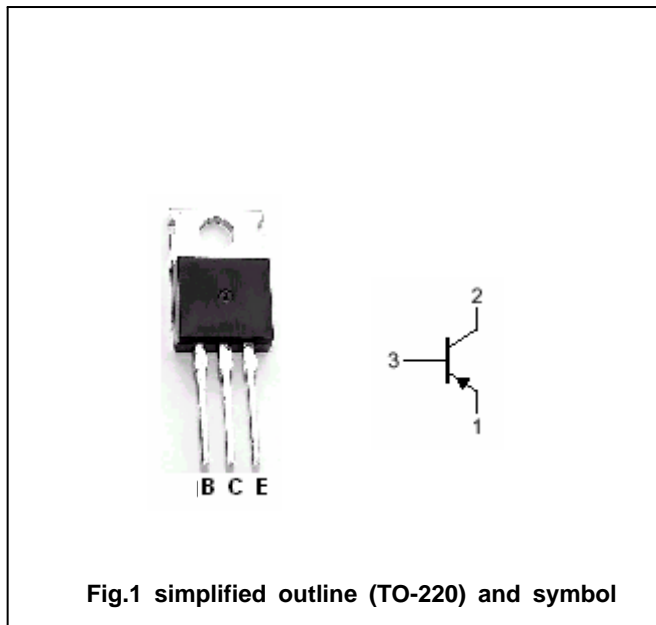


Fig.1 simplified outline (TO-220) and symbol

**Absolute maximum ratings(Ta=25 )**

| SYMBOL           | PARAMETER                   | CONDITIONS         | VALUE   | UNIT |
|------------------|-----------------------------|--------------------|---------|------|
| V <sub>CBO</sub> | Collector-base voltage      | 2SA814             | -120    | V    |
|                  |                             | 2SA815             | -100    |      |
| V <sub>CEO</sub> | Collector-emitter voltage   | 2SA814             | -120    | V    |
|                  |                             | 2SA815             | -100    |      |
| V <sub>EBO</sub> | Emitter-base voltage        | Open collector     | -5      | V    |
| I <sub>C</sub>   | Collector current           |                    | -1      | A    |
| I <sub>E</sub>   | Emitter current             |                    | 1       | A    |
| P <sub>C</sub>   | Collector power dissipation | T <sub>C</sub> =25 | 15      | W    |
| T <sub>j</sub>   | Junction temperature        |                    | 150     |      |
| T <sub>stg</sub> | Storage temperature         |                    | -55~150 |      |

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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  | 2SA814   | I <sub>C</sub> =-10mA, I <sub>B</sub> =0 | -120 |      |      | V |
|                      |                                      | 2SA815   |  | -100 |      |      |   |
| V <sub>(BR)EBO</sub> | Emitter-base breakdown voltage       | I <sub>E</sub> =-1.0mA, I <sub>C</sub> =0        | -5                                       |      |      | V    |   |
| V <sub>CEsat</sub>   | Collector-emitter saturation voltage | I <sub>C</sub> =-500mA; I <sub>B</sub> =-50mA    |  |      | -0.5 | V    |   |
| V <sub>BE</sub>      | Base-emitter on voltage              | I <sub>C</sub> =-500mA; V <sub>CE</sub> =-5V     |  |      | -1.0 | V    |   |
| I <sub>CBO</sub>     | Collector cut-off current            | V <sub>CB</sub> =-50V; I <sub>E</sub> =0         |  |      | -1.0 | μA   |   |
| I <sub>EBO</sub>     | Emitter cut-off current              | V <sub>EB</sub> =-5V; I <sub>C</sub> =0          |  |      | -1.0 | μA   |   |
| h <sub>FE-1</sub>    | DC current gain                      | I <sub>C</sub> =-150mA; V <sub>CE</sub> =-5V     | 70                                       |      | 240  |      |   |
| h <sub>FE-2</sub>    | DC current gain                      | I <sub>C</sub> =-500mA; V <sub>CE</sub> =-5V     | 40                                       |      |      |      |   |
| C <sub>OB</sub>      | Collector output capacitance         | I <sub>E</sub> =0; V <sub>CB</sub> =-10V; f=1MHz |  | 30   |      | pF   |   |
| f <sub>T</sub>       | Transition frequency                 | I <sub>C</sub> =-150mA; V <sub>CE</sub> =-5V     | 10                                       | 30   |      | MHz  |   |

◆ h<sub>FE-1</sub> Classifications

| O      | Y       |
|--------|---------|
| 70-140 | 120-240 |

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PACKAGE OUTLINE



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