

**Silicon NPN Power Transistors**

**BD175 BD177 BD179**

**DESCRIPTION**

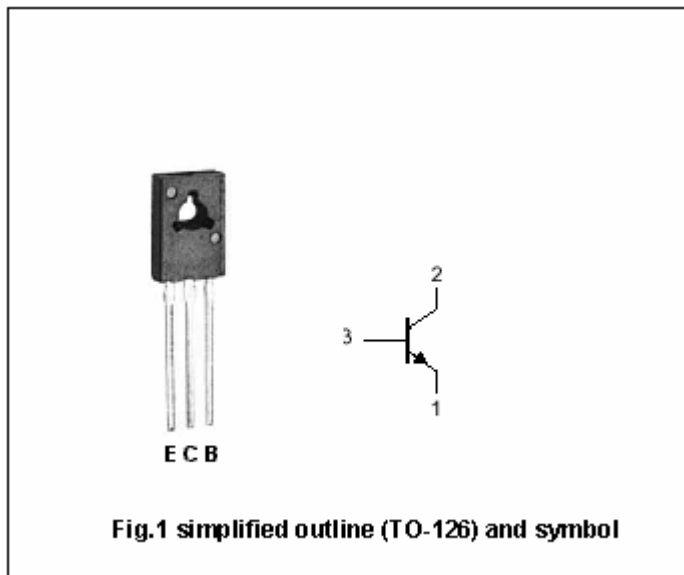
- With TO-126 package
- Complement to type BD176/178 /180

**APPLICATIONS**

- For medium power linear and switching applications

**PINNING**

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



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

| SYMBOL           | PARAMETER                   | CONDITIONS           | VALUE   | UNIT |
|------------------|-----------------------------|----------------------|---------|------|
| V <sub>CB0</sub> | Collector-base voltage      | BD175                | 45      | V    |
|                  |                             | BD177                | 60      |      |
|                  |                             | BD179                | 80      |      |
| V <sub>CEO</sub> | Collector-emitter voltage   | BD175                | 45      | V    |
|                  |                             | BD177                | 60      |      |
|                  |                             | BD179                | 80      |      |
| V <sub>EBO</sub> | Emitter -base voltage       | Open collector       | 5       | V    |
| I <sub>C</sub>   | Collector current (DC)      |                      | 3       | A    |
| I <sub>CM</sub>  | Collector current-Peak      |                      | 7       | 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         |                      | -65~150 | °C   |

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## BD175 BD177 BD179

## CHARACTERISTICS

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

| SYMBOL                | PARAMETER                            | CONDITIONS                                  | MIN                                     | TYP. | MAX | UNIT |   |
|-----------------------|--------------------------------------|---|---|------|-----|------|---|
| V <sub>CEsat</sub>    | Collector-emitter saturation voltage | I <sub>C</sub> =1A; I <sub>B</sub> =0.1A    |   |      | 0.8 | V    |   |
| V <sub>BE</sub>       | Base-emitter on voltage              | I <sub>C</sub> =1A; V <sub>CE</sub> =2V     |   |      | 1.3 | V    |   |
| V <sub>CEO(SUS)</sub> | Collector-emitter sustaining voltage | BD175                                       | I <sub>C</sub> =0.1A; I <sub>B</sub> =0 |      |     | V    |   |
|                       |                                      | BD177                                       |   |      |     |      | 45                                      |
|                       |                                      | BD179                                       |   |      |     |      | 60                                      |
| I <sub>CBO</sub>      | Collector cut-off current            | BD175                                       | V <sub>CB</sub> =45V; I <sub>E</sub> =0 |      |     | μA   |   |
|                       |                                      | BD177                                       |   |      |     |      | V <sub>CB</sub> =60V; I <sub>E</sub> =0 |
|                       |                                      | BD179                                       |   |      |     |      | V <sub>CB</sub> =80V; I <sub>E</sub> =0 |
| I <sub>EBO</sub>      | Emitter cut-off current              | V <sub>EB</sub> =5V; I <sub>C</sub> =0      |   |      | 1   | mA   |   |
| h <sub>FE-1</sub>     | DC current gain                      | I <sub>C</sub> =150mA; V <sub>CE</sub> =2V  | 40                                      |      | 250 |      |   |
| h <sub>FE-2</sub>     | DC current gain                      | I <sub>C</sub> =1A; V <sub>CE</sub> =2V     | 15                                      |      |     |      |   |
| f <sub>T</sub>        | Transition frequency                 | I <sub>C</sub> =250mA; V <sub>CE</sub> =10V | 3                                       |      |     | MHz  |   |

◆ h<sub>FE-1</sub> Classifications

|        |        |         |
|--------|--------|---------|
| 6      | 10     | 16      |
| 40-100 | 63-160 | 100-250 |

□ classification 16 :only BD175

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PACKAGE OUTLINE

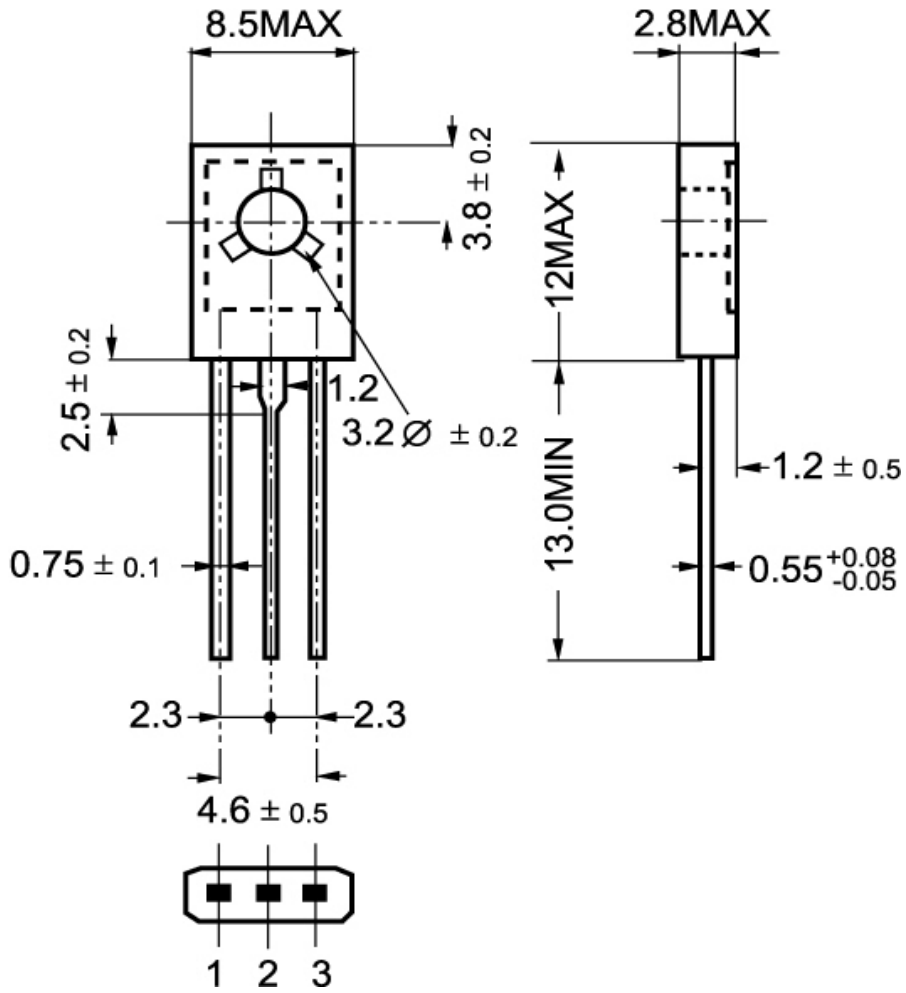


Fig.2 Outline dimensions