

Silicon NPN Power Transistors

2SD1351

**DESCRIPTION**

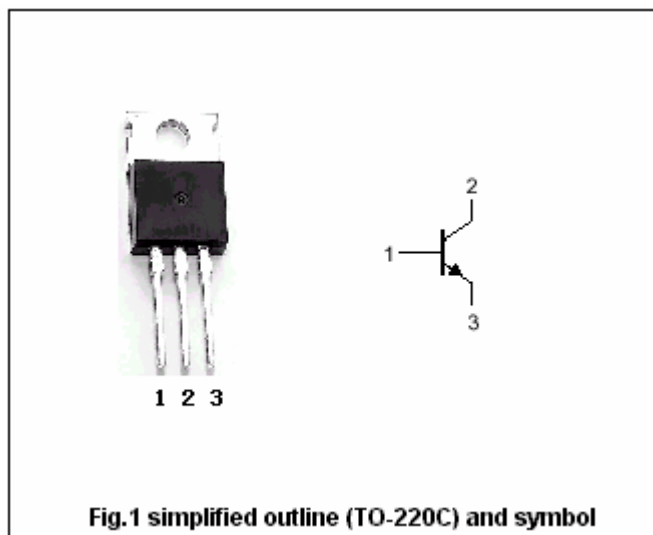
- With TO-220C package
- Complement to type 2SB988
- Low collector saturation voltage

**APPLICATIONS**

- For general purpose application

**PINNING**

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



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

| SYMBOL           | PARAMETER                 | CONDITIONS           | VALUE   | UNIT |
|------------------|---------------------------|----------------------|---------|------|
| V <sub>CBO</sub> | Collector-base voltage    | Open emitter         | 60      | 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         |                      | 3       | A    |
| I <sub>B</sub>   | Base current              |                      | 0.5     | A    |
| P <sub>C</sub>   | Collector dissipation     | T <sub>a</sub> =25°C | 2       | W    |
|                  |                           | T <sub>C</sub> =25°C | 30      |      |
| T <sub>j</sub>   | Junction temperature      |                      | 150     | °C   |
| T <sub>stg</sub> | Storage temperature       |                      | -50~150 | °C   |

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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  | I <sub>C</sub> =50mA; I <sub>B</sub> =0         | 60  |      |     | V    |
| V <sub>CEsat</sub>   | Collector-emitter saturation voltage | I <sub>C</sub> =2A; I <sub>B</sub> =0.2A        |     | 0.25 | 1.0 | V    |
| V <sub>BE</sub>      | Base-emitter on voltage              | I <sub>C</sub> =0.5A; V <sub>CE</sub> =5V       |     | 0.7  | 1.0 | V    |
| I <sub>CBO</sub>     | Collector cut-off current            | V <sub>CB</sub> =60V; I <sub>E</sub> =0         |     |      | 0.1 | mA   |
| I <sub>EBO</sub>     | Emitter cut-off current              | V <sub>EB</sub> =7V; I <sub>C</sub> =0          |     |      | 0.1 | mA   |
| h <sub>FE</sub>      | DC current gain                      | I <sub>C</sub> =0.5A; V <sub>CE</sub> =5V       | 60  |      | 300 |      |
| C <sub>ob</sub>      | Output capacitance                   | I <sub>E</sub> =0; V <sub>CB</sub> =10V; f=1MHz |     | 35   |     | pF   |
| f <sub>T</sub>       | Transition frequency                 | I <sub>C</sub> =0.5A; V <sub>CE</sub> =5V       |     | 3.0  |     | MHz  |

## Switching times

|                  |              |   |  |      |  |    |
|------------------|--------------|---|--|------|--|----|
| t <sub>on</sub>  | Turn-on time | I <sub>B1</sub> =-I <sub>B2</sub> =0.2A<br>V <sub>CC</sub> =30V; R <sub>L</sub> =15Ω<br>Duty cycle≤1% |  | 0.65 |  | μs |
| t <sub>stg</sub> | Storage time |   |  | 1.30 |  | μs |
| t <sub>f</sub>   | Fall time    |   |  | 0.65 |  | μs |

◆ h<sub>FE</sub> Classifications

| O      | Y       | GR      |
|--------|---------|---------|
| 60-120 | 100-200 | 150-300 |

