

Silicon NPN Power Transistors

2SC3686

**DESCRIPTION**

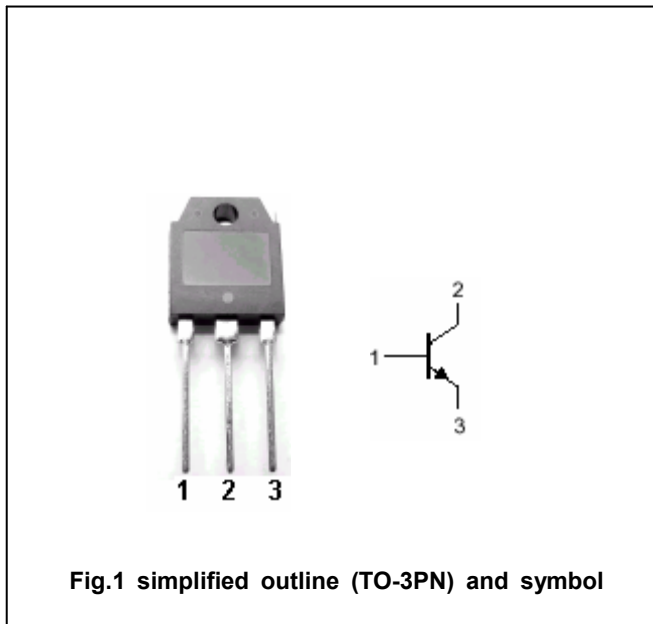
- With TO-3PN package
- High breakdown voltage
- High reliability
- Fast speed

**APPLICATIONS**

- Ultrahigh-definition CRT display horizontal deflection output applications

**PINNING**

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



**Absolute maximum ratings(Ta=□)**

| SYMBOL           | PARAMETER                   | CONDITIONS          | VALUE   | UNIT |
|------------------|-----------------------------|---------------------|---------|------|
| V <sub>CBO</sub> | Collector-base voltage      | Open emitter        | 1500    | V    |
| V <sub>CEO</sub> | Collector-emitter voltage   | Open base           | 800     | V    |
| V <sub>EBO</sub> | Emitter-base voltage        | Open collector      | 6       | V    |
| I <sub>C</sub>   | Collector current           |                     | 7       | A    |
| I <sub>CP</sub>  | Collector current-pulse     |                     | 16      | A    |
| P <sub>C</sub>   | Collector power dissipation | T <sub>C</sub> =25□ | 120     | W    |
| T <sub>j</sub>   | Junction temperature        |                     | 150     | □    |
| T <sub>stg</sub> | Storage temperature         |                     | -55~150 | □    |

## Silicon NPN Power Transistors

## 2SC3686

## CHARACTERISTICS

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

| SYMBOL                | PARAMETER                            | CONDITIONS                                 | MIN | TYP. | MAX | UNIT |
|-----------------------|--------------------------------------|--|-----|------|-----|------|
| V <sub>CEO(SUS)</sub> | Collector-emitter sustaining voltage | I <sub>C</sub> =100mA; I <sub>B</sub> =0   | 800 |      |     | V    |
| V <sub>CEsat</sub>    | Collector-emitter saturation voltage | I <sub>C</sub> =5A; I <sub>B</sub> =1.2A   |     |      | 5   | V    |
| V <sub>BEsat</sub>    | Base-emitter saturation voltage      | I <sub>C</sub> =5A; I <sub>B</sub> =1.2A   |     |      | 1.5 | V    |
| I <sub>CES</sub>      | Collector cut-off current            | V <sub>CE</sub> =1500V; R <sub>BE</sub> =0 |     |      | 1   | mA   |
| I <sub>EBO</sub>      | Emitter cut-off current              | V <sub>EB</sub> =4V; I <sub>C</sub> =0     |     |      | 1   | mA   |
| h <sub>FE</sub>       | DC current gain                      | I <sub>C</sub> =1A; V <sub>CE</sub> =5V    | 8   |      |     |      |

## Switching times

|                  |              |  |  |     |     |    |
|------------------|--------------|--|--|-----|-----|----|
| t <sub>stg</sub> | Storage time | I <sub>C</sub> =4A; V <sub>CC</sub> =5V<br>I <sub>B1</sub> =0.8A; I <sub>B2</sub> =-1.6A |  |     | 3   | μs |
| t <sub>f</sub>   | Fall time    |  |  | 0.1 | 0.2 | μs |

Silicon NPN Power Transistors

2SC3686

PACKAGE OUTLINE

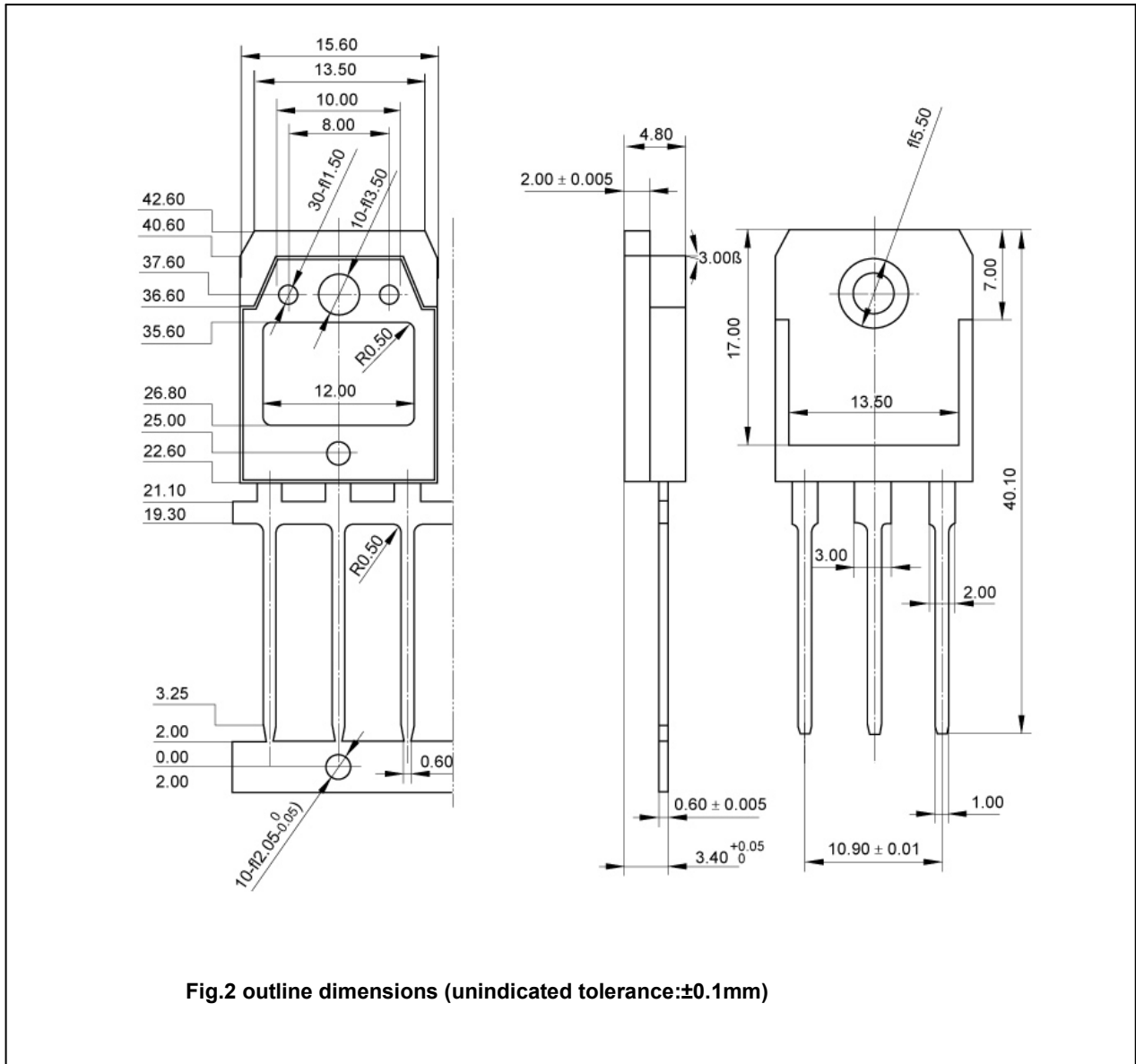


Fig.2 outline dimensions (unindicated tolerance:±0.1mm)

Silicon NPN Power Transistors

2SC3686

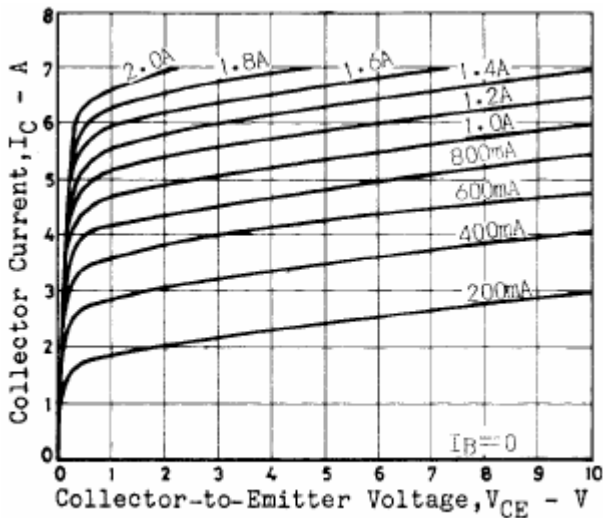


Fig.3 Static Characteristic

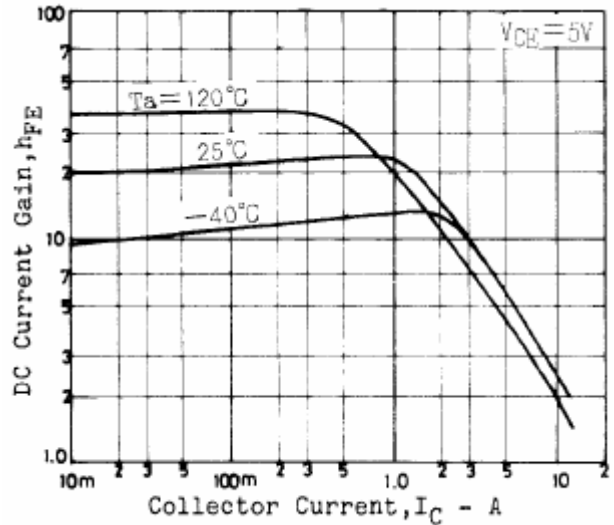


Fig.4 DC current Gain

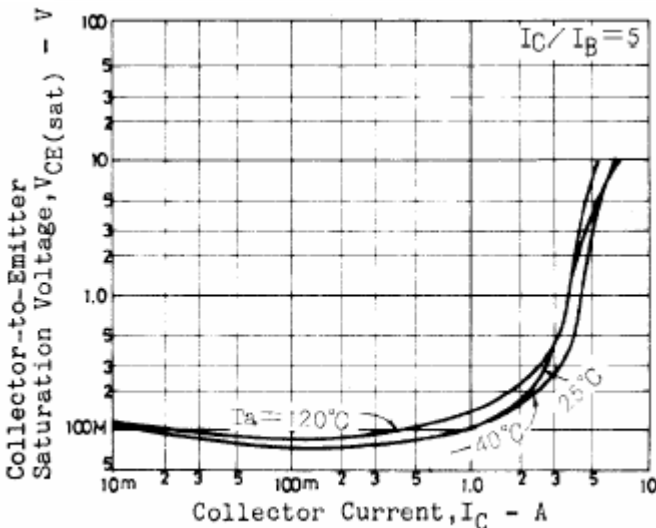


Fig.5 Collector-Emitter Saturation Voltage

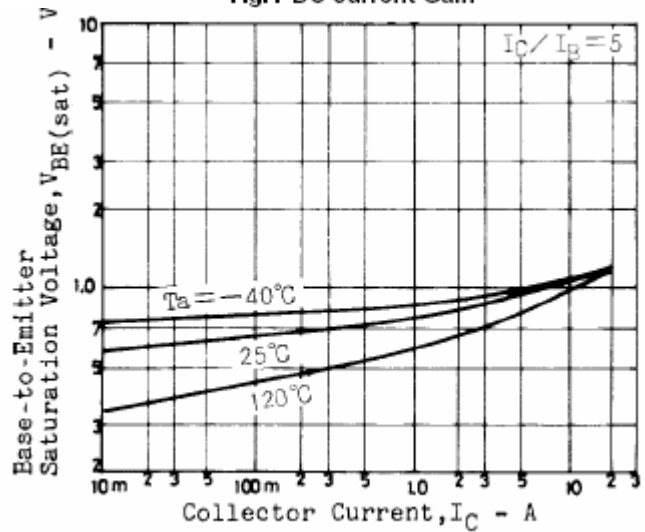


Fig.6 Base-Emitter Saturation Voltage

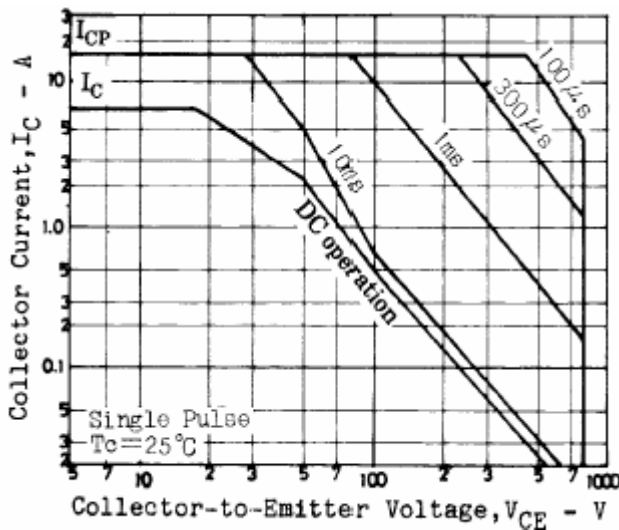


Fig.7 Safe Operating Area