

Silicon NPN Power Transistors

2SC2979

DESCRIPTION

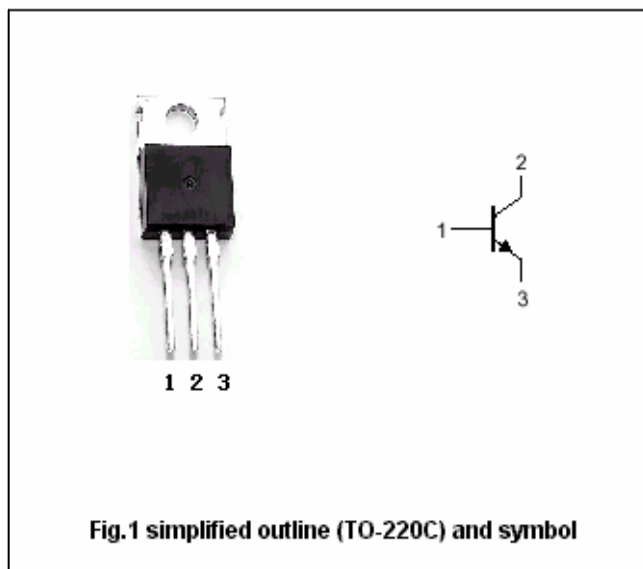
- With TO-220C package
- High  $V_{CBO}$
- Fast switching speed.

APPLICATIONS

- For high voltage ,high speed and high power switching applications

PINNING

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



Absolute maximum ratings( $T_a=25^\circ C$ )

| SYMBOL    | PARAMETER                 | CONDITIONS       | VALUE   | UNIT       |
|-----------|---------------------------|------------------|---------|------------|
| $V_{CBO}$ | Collector-base voltage    | Open emitter     | 900     | V          |
| $V_{CEO}$ | Collector-emitter voltage | Open base        | 800     | V          |
| $V_{EBO}$ | Emitter-base voltage      | Open collector   | 7       | V          |
| $I_C$     | Collector current         |                  | 3       | A          |
| $I_{CM}$  | Collector current-peak    |                  | 6       | A          |
| $I_B$     | Base current              |                  | 1.5     | A          |
| $P_C$     | Collector dissipation     | $T_C=25^\circ C$ | 40      | W          |
| $T_j$     | Junction temperature      |                  | 150     | $^\circ C$ |
| $T_{stg}$ | Storage temperature       |                  | -55~150 | $^\circ C$ |

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## CHARACTERISTICS

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

| SYMBOL                | PARAMETER                            | CONDITIONS                                        | MIN | TYP. | MAX | UNIT |
|-----------------------|--------------------------------------|---------------------------------------------------|-----|------|-----|------|
| V <sub>CEO(SUS)</sub> | Collector-emitter sustaining voltage | I <sub>C</sub> =0.2A; R <sub>BE</sub> =∞, L=100mH | 800 |      |     | V    |
| V <sub>(BR)EBO</sub>  | Base-emitter breakdown voltage       | I <sub>E</sub> =10mA; I <sub>C</sub> =0           | 7   |      |     | V    |
| V <sub>CEsat</sub>    | Collector-emitter saturation voltage | I <sub>C</sub> =0.75A; I <sub>B</sub> =0.15A      |     |      | 1.0 | V    |
| V <sub>BEsat</sub>    | Base-emitter saturation voltage      | I <sub>C</sub> =0.75A; I <sub>B</sub> =0.15A      |     |      | 1.5 | V    |
| I <sub>CBO</sub>      | Collector cut-off current            | V <sub>CB</sub> =750V; I <sub>E</sub> =0          |     |      | 100 | μA   |
| I <sub>CEO</sub>      | Collector cut-off current            | V <sub>CE</sub> =650V; R <sub>BE</sub> =∞         |     |      | 100 | μA   |
| h <sub>FE-1</sub>     | DC current gain                      | I <sub>C</sub> =0.3A; V <sub>CE</sub> =5V         | 15  |      |     |      |
| h <sub>FE-2</sub>     | DC current gain                      | I <sub>C</sub> =1.5A; V <sub>CE</sub> =5V         | 7   |      |     |      |

## Switching times

|                  |              |                                                                                               |  |  |     |    |
|------------------|--------------|-----------------------------------------------------------------------------------------------|--|--|-----|----|
| t <sub>on</sub>  | Turn-on time | V <sub>CC</sub> ≈250V; I <sub>C</sub> =1.5A<br>I <sub>B1</sub> =0.3A; I <sub>B2</sub> =-0.75A |  |  | 1.0 | μs |
| t <sub>stg</sub> | Storage time |                                                                                               |  |  | 3.0 | μs |
| t <sub>f</sub>   | Fall time    |                                                                                               |  |  | 1.0 | μs |

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PACKAGE OUTLINE



Fig.2 Outline dimensions (unindicated tolerance:±0.10 mm)

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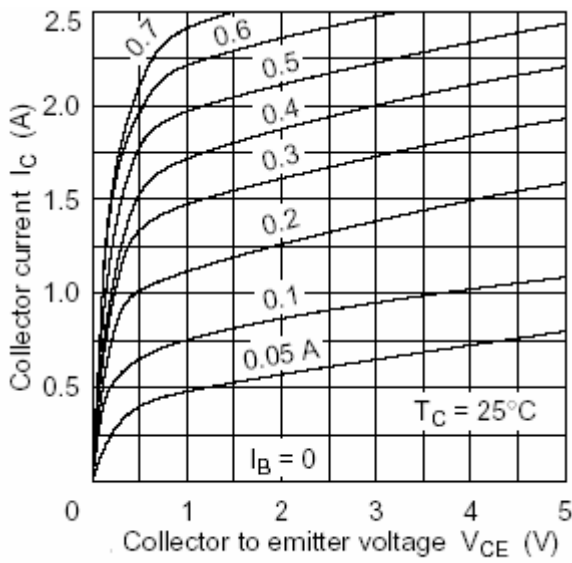


Fig.3 Static Characteristic

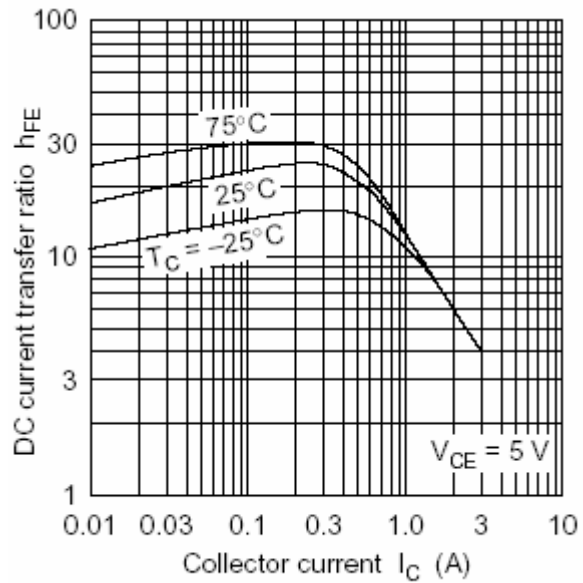


Fig.4 DC current Gain

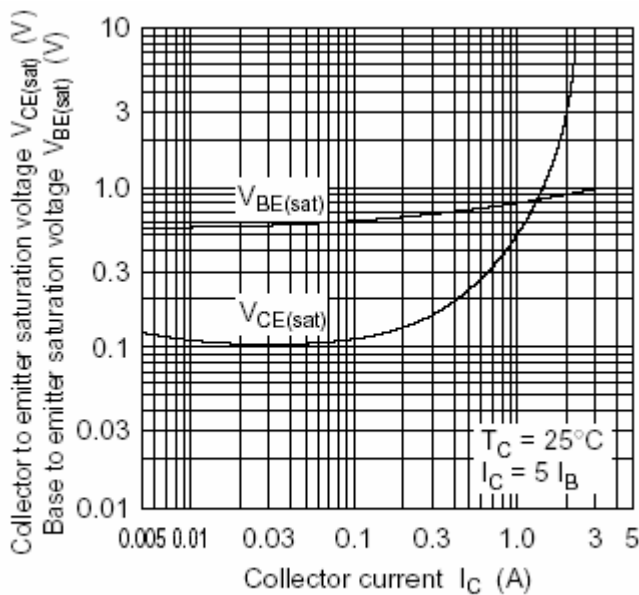


Fig.5 Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

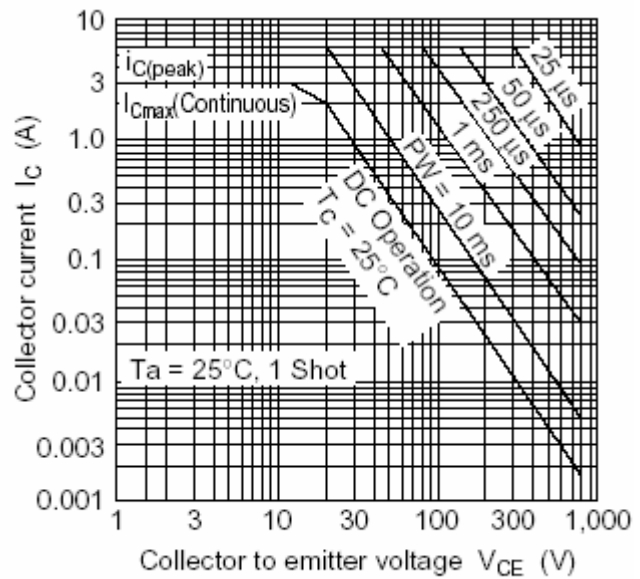


Fig.6 Safe Operating Area