

## Silicon NPN Power Transistors

2SC3157

## DESCRIPTION

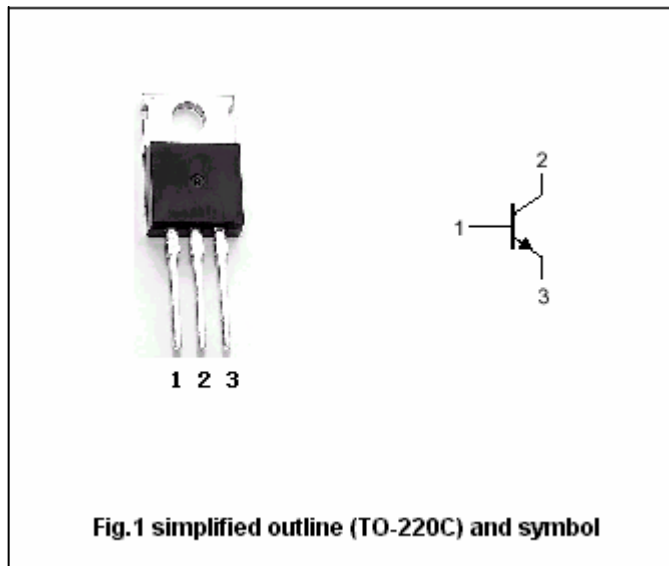
- With TO-220 package
- High switching speed
- Low collector saturation voltage
- Complement to type 2SA1261

## APPLICATIONS

- For high voltage ,high speed and power switching applications

## PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | Base        |
| 2   | Collector   |
| 3   | Emitter     |

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

| SYMBOL    | PARAMETER                 | CONDITIONS             | VALUE   | UNIT             |
|-----------|---------------------------|------------------------|---------|------------------|
| $V_{CBO}$ | Collector-base voltage    | Open emitter           | 150     | V                |
| $V_{CEO}$ | Collector-emitter voltage | Open base              | 100     | V                |
| $V_{EBO}$ | Emitter-base voltage      | Open collector         | 7       | V                |
| $I_C$     | Collector current         |                        | 10      | A                |
| $I_{CM}$  | Collector current-Peak    |                        | 20      | A                |
| $I_B$     | Base current              |                        | 3.5     | A                |
| $P_T$     | Total power dissipation   | $T_a=25^\circ\text{C}$ | 1.5     | W                |
|           |                           | $T_C=25^\circ\text{C}$ | 60      |                  |
| $T_j$     | Junction temperature      |                        | 150     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage temperature       |                        | -55~150 | $^\circ\text{C}$ |

## Silicon NPN Power Transistors

## 2SC3157

## 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> =5A ; I <sub>B1</sub> =0.5A; L=1mH                     | 100 |      |             | V    |
| V <sub>CEsat</sub>    | Collector-emitter saturation voltage | I <sub>C</sub> =5A; I <sub>B</sub> =0.5A                              |     |      | 0.6         | V    |
| V <sub>BEsat</sub>    | Base-emitter saturation voltage      | I <sub>C</sub> =5A; I <sub>B</sub> =0.5A                              |     |      | 1.5         | V    |
| I <sub>CBO</sub>      | Collector cut-off current            | V <sub>CB</sub> =100V; I <sub>E</sub> =0                              |     |      | 0.01        | mA   |
| I <sub>CEX</sub>      | Collector cut-off current            | V <sub>CE</sub> =100V; V <sub>BE</sub> =1.5V<br>T <sub>a</sub> =125°C |     |      | 0.01<br>1.0 | mA   |
| I <sub>EBO</sub>      | Emitter cut-off current              | V <sub>EB</sub> =5V; I <sub>C</sub> =0                                |     |      | 0.01        | mA   |
| h <sub>FE-1</sub>     | DC current gain                      | I <sub>C</sub> =0.5A ; V <sub>CE</sub> =5V                            | 40  |      |             |      |
| h <sub>FE-2</sub>     | DC current gain                      | I <sub>C</sub> =3A ; V <sub>CE</sub> =5V                              | 40  |      | 200         |      |
| h <sub>FE-3</sub>     | DC current gain                      | I <sub>C</sub> =5A ; V <sub>CE</sub> =5V                              | 20  |      |             |      |

## Switching times

|                 |              |  |  |  |     |    |
|-----------------|--------------|--|--|--|-----|----|
| t <sub>on</sub> | Turn-on time | I <sub>C</sub> =5A; I <sub>B1</sub> =-I <sub>B2</sub> =0.5A ,<br>R <sub>L</sub> =10Ω; V <sub>CC</sub> ≈50V |  |  | 0.5 | μs |
| t <sub>s</sub>  | Storage time |  |  |  | 1.5 | μs |
| t <sub>f</sub>  | Fall time    |  |  |  | 0.5 | μs |

◆ h<sub>FE-2</sub> classifications

| M     | L      | K       |
|-------|--------|---------|
| 40-80 | 60-120 | 100-200 |

## Silicon NPN Power Transistors

2SC3157

## PACKAGE OUTLINE



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

This datasheet has been downloaded from:

[www.DatasheetCatalog.com](http://www.DatasheetCatalog.com)

Datasheets for electronic components.