

Silicon NPN Power Transistors

2SC4020

DESCRIPTION

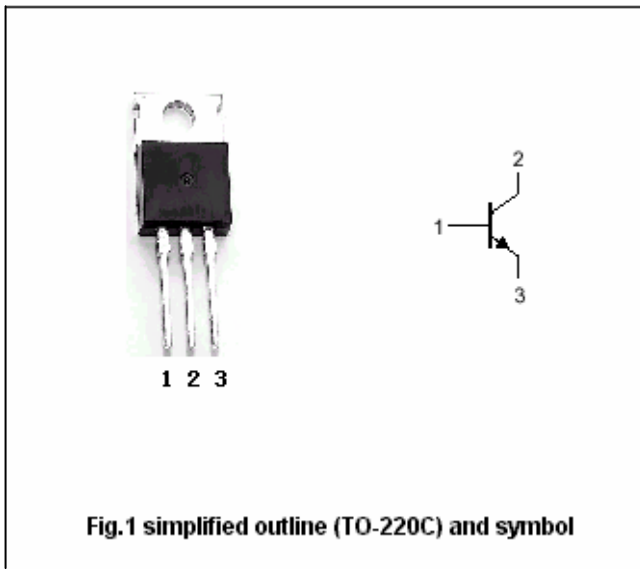
- With TO-220C package
- High breakdown voltage
: $V_{CBO}=900V(\text{Min})$
- Wide area of safe operation

APPLICATIONS

- For switching regulator and general purpose applications

PINNING

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



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

| 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 power dissipation | $T_C=25^\circ\text{C}$ | 50 | W |
| T_j | Junction temperature | | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage temperature | | -55~150 | $^\circ\text{C}$ |

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CHARACTERISTICS

T_j=25°C unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|----------------------|--------------------------------------|--|-----|------|-----|------|
| V _{(BR)CEO} | Collector-emitter breakdown voltage | I _C =10mA ; I _B =0 | 800 | | | V |
| V _{CEsat} | Collector-emitter saturation voltage | I _C =0.7A ; I _B =0.14A | | | 0.5 | V |
| V _{BEsat} | Base-emitter saturation voltage | I _C =0.7A ; I _B =0.14A | | | 1.2 | V |
| I _{CBO} | Collector cut-off current | V _{CB} =800V ; I _E =0 | | | 100 | μA |
| I _{EBO} | Emitter cut-off current | V _{EB} =7V ; I _C =0 | | | 100 | μA |
| h _{FE} | DC current gain | I _C =0.7A ; V _{CE} =4V | 10 | | 30 | |
| f _T | Transition frequency | I _E =-0.3A ; V _{CE} =12V | | 6 | | MHz |
| C _{OB} | Output capacitance | f=1MHz ; V _{CB} =10V | | 40 | | pF |

Switching times

| | | | | | | |
|------------------|--------------|---|--|--|-----|----|
| t _{on} | Turn-on time | V _{CC} =250V ; I _C =0.7A I _{B1} =0.1A ; I _{B2} =-0.35A ; R _L =357Ω | | | 1.0 | μs |
| t _{stg} | Storage time | | | | 5.0 | μs |
| t _f | Fall time | | | | 1.0 | μs |

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PACKAGE OUTLINE

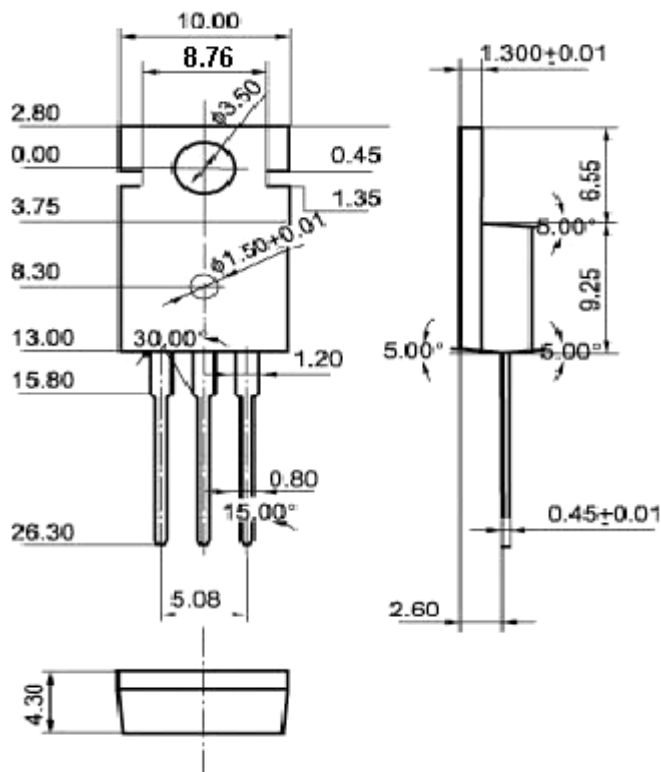


Fig.2 Outline dimensions (unindicated tolerance:±0.10 mm)