

Silicon NPN Power Transistors

2SC3969

DESCRIPTION

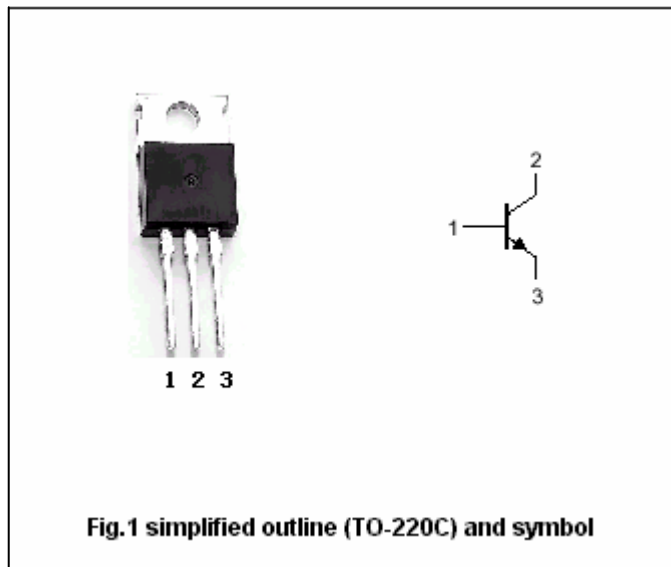
- With TO-220C package
- Low collector saturation voltage
- High breakdown voltage
- Fast switching speed

APPLICATIONS

- For high voltage switching applications

PINNING

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



Absolute maximum ratings (Tc=25°C)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|-----------------------------|----------------------|---------|------|
| V _{CBO} | Collector-base voltage | Open emitter | 400 | V |
| V _{CEO} | Collector-emitter voltage | Open base | 400 | V |
| V _{EBO} | Emitter-base voltage | Open collector | 7 | V |
| I _C | Collector current -DC | | 2 | A |
| I _{CM} | Collector current-Peak | | 4 | A |
| P _C | Collector power dissipation | T _a =25°C | 2 | W |
| | | T _C =25°C | 40 | |
| T _j | Junction temperature | | 150 | °C |
| T _{stg} | Storage temperature | | -55~150 | °C |

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CHARACTERISTICS

T_j=25°C unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|-----------------------|--------------------------------------|--|-----|------|-----|------|
| V _{CE0(SUS)} | Collector-emitter sustaining voltage | I _C =1.0A ; I _{B1} =0.1A, L=1mH | 400 | | | V |
| V _{(BR)CEO} | Collector-emitter breakdown voltage | I _C =1mA ; I _B =0 | 400 | | | V |
| V _{(BR)CBO} | Collector-base breakdown voltage | I _C =50μA ; I _E =0 | 400 | | | V |
| V _{(BR)EBO} | Emitter-base breakdown voltage | I _E =50μA ; I _C =0 | 7 | | | V |
| V _{CEsat} | Collector-emitter saturation voltage | I _C =1A; I _B =0.2A | | | 1.0 | V |
| V _{BEsat} | Base-emitter saturation voltage | I _C =1A; I _B =0.2A | | | 1.5 | V |
| I _{CBO} | Collector cut-off current | V _{CB} =400V; I _E =0 | | | 10 | μA |
| I _{EBO} | Emitter cut-off current | V _{EB} =7V; I _C =0 | | | 10 | μA |
| h _{FE} | DC current gain | I _C =0.1A ; V _{CE} =5V | 25 | | 50 | |
| f _T | Transition frequency | I _E =-0.1A ; V _{CE} =10V; f=5MHz | | 10 | | MHz |
| C _{OB} | Collector outoput capacitance | I _E =0; f=1MHz ; V _{CB} =10V | | 30 | | pF |

Switching times

| | | | | | | |
|-----------------|--------------|--|--|--|-----|----|
| t _{on} | Turn-on time | V _{CC} ≈200V , I _C =0.8A I _{B1} =-I _{B2} =0.08A; R _L =250Ω | | | 1.0 | μs |
| t _s | Storage time | | | | 2.5 | μs |
| t _f | Fall time | | | | 1.0 | μs |

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PACKAGE OUTLINE

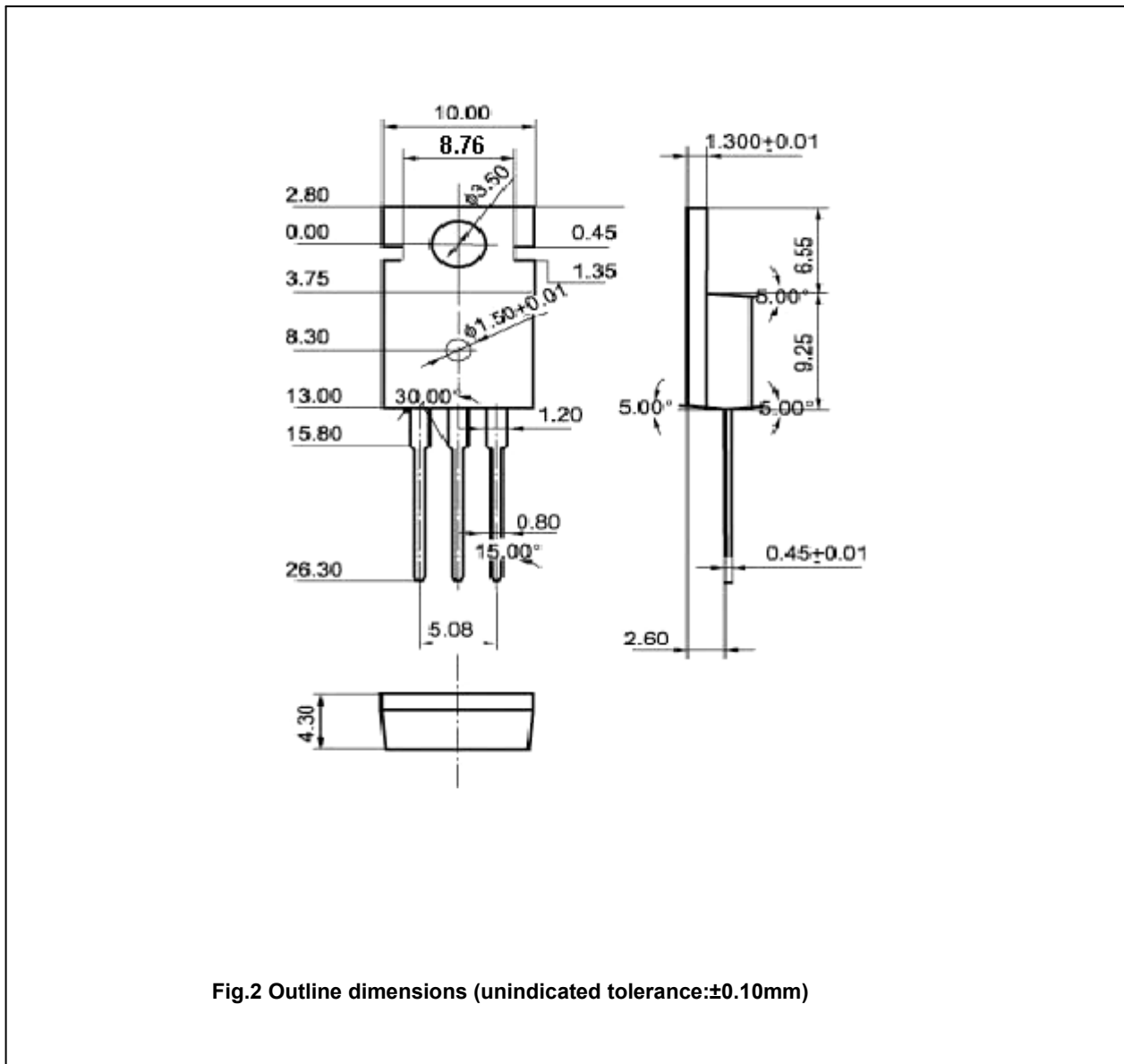


Fig.2 Outline dimensions (unindicated tolerance: $\pm 0.10\text{mm}$)