

Silicon PNP Power Transistors

2SB1069 2SB1069A

DESCRIPTION

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

APPLICATIONS

- For low-voltage switching applications

PINNING

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

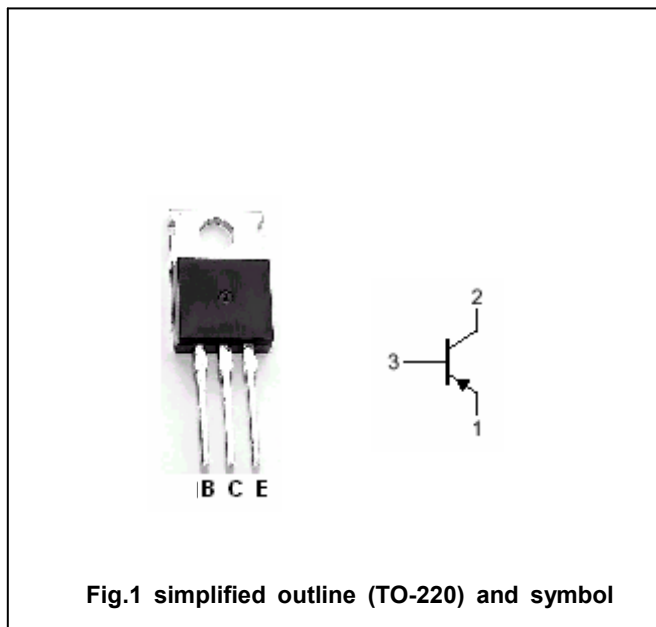


Fig.1 simplified outline (TO-220) and symbol

Absolute maximum ratings(Ta=25°C)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|-----------------------------|----------------------|---------|------|
| V _{CBO} | Collector-base voltage | 2SB1069 | -40 | V |
| | | 2SB1069A | -50 | |
| V _{CEO} | Collector-emitter voltage | 2SB1069 | -20 | V |
| | | 2SB1069A | -40 | |
| V _{EBO} | Emitter-base voltage | Open collector | -5 | V |
| I _C | Collector current | | -4 | A |
| I _{CM} | Collector current-peak | | -8 | A |
| P _C | Collector power dissipation | T _a =25°C | 1.4 | W |
| | | T _C =25°C | 25 | |
| 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 _{(BR)CEO} | Collector-emitter breakdown voltage | 2SB1069 | I _C =-10mA, I _B =0 | -20 | | | V |
| | | 2SB1069A | | -40 | | | |
| V _{CEsat} | Collector-emitter saturation voltage | | I _C =-2A; I _B =-0.1A | | | -0.5 | V |
| V _{BEsat} | Base-emitter saturation voltage | | I _C =-2A; I _B =-0.1A | | | -1.5 | V |
| I _{CBO} | Collector cut-off current | | V _{CB} =-40V; I _E =0 | | | -50 | μA |
| I _{EBO} | Emitter cut-off current | | V _{EB} =-5V; I _C =0 | | | -50 | μA |
| h _{FE-1} | DC current gain | | I _C =-0.1A; V _{CE} =-2V | 45 | | | |
| h _{FE-2} | DC current gain | | I _C =-1A; V _{CE} =-2V | 60 | | 260 | |
| f _T | Transition frequency | | I _C =-0.5A; V _{CE} =-5V | | 150 | | MHz |

Switching times

| | | | | | | |
|------------------|--------------|---|--|-----|--|----|
| t _{on} | Turn-on time | I _C =-2A; I _{B1} =-I _{B2} =-0.2A | | 0.3 | | μs |
| t _{stg} | Storage time | | | 0.4 | | μs |
| t _f | Fall time | | | 0.1 | | μs |

◆ h_{FE-2} classifications

| R | Q | P |
|--------|--------|---------|
| 60-120 | 90-180 | 130-260 |

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PACKAGE OUTLINE

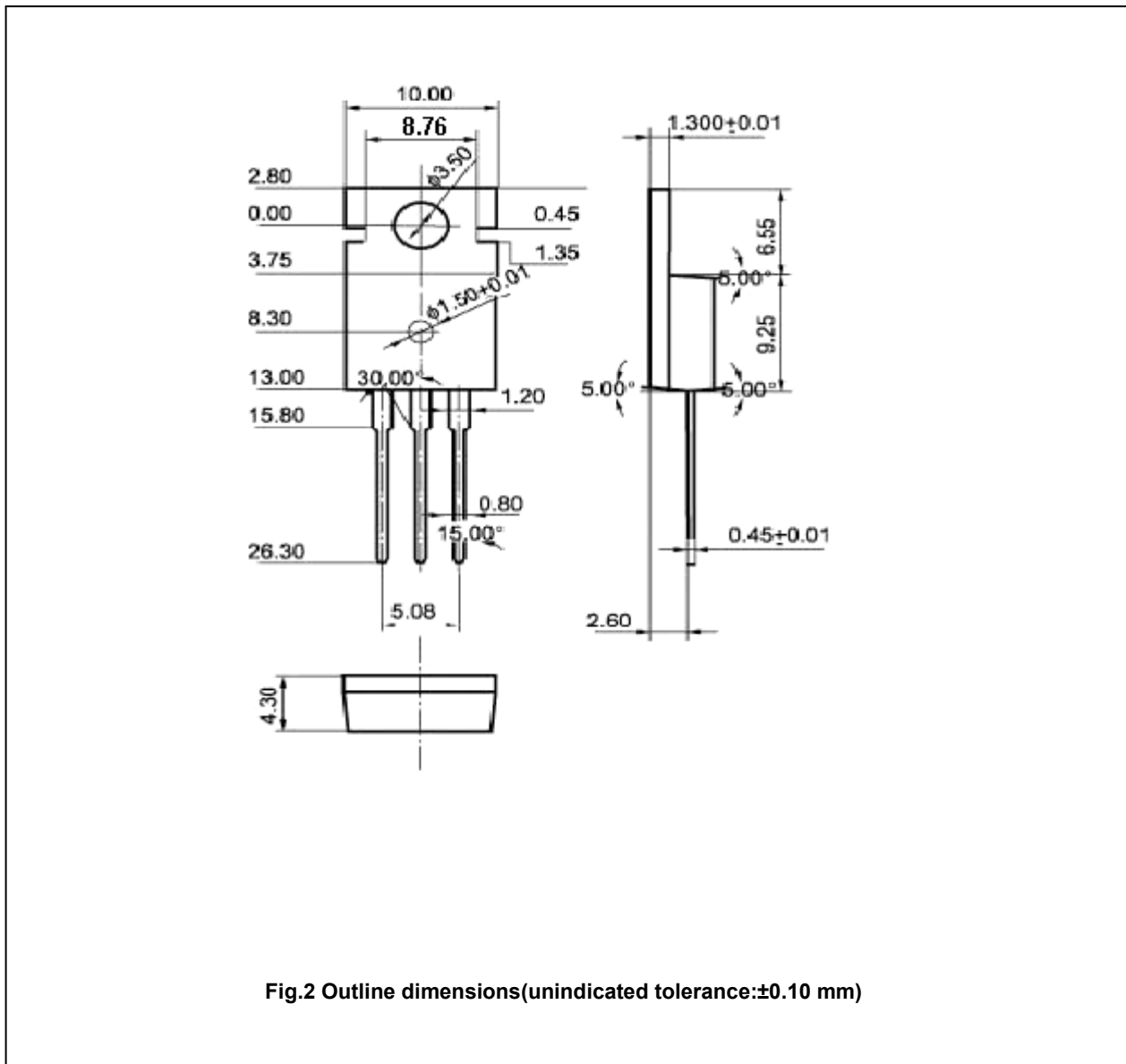


Fig.2 Outline dimensions(unindicated tolerance:±0.10 mm)