# Silicon PNP Power Transistors 2SA968 2SA968A 2SA968B

## DESCRIPTION

- With TO-220 package
- Complement to type 2SC2238
- High breakdown votage

## APPLICATIONS

- Power amplifier applications
- Driver stage amplifier applications

**PINNING**

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

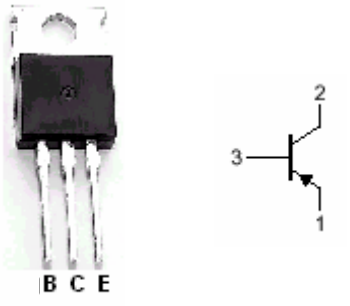



**Fig.1 simplified outline (TO-220) and symbol**

## Absolute maximum ratings(Ta=25℃)

| SYMBOL | PARAMETER | | CONDITIONS | VALUE | UNIT |
|---|---|---|---|---|---|
| $V_{CBO}$ | Collector-base voltage | 2SA968 | Open emitter | -160 | V |
| | | 2SA968A | | -180 | |
| | | 2SA968B | | -200 | |
| $V_{CEO}$ | Collector-emitter voltage | 2SA968 | Open base | -160 | V |
| | | 2SA968A | | -180 | |
| | | 2SA968B | | -200 | |
| $V_{EBO}$ | Emitter-base voltage | | Open collector | -5 | V |
| $I_C$ | Collector current | | | -1.5 | A |
| $I_E$ | Emitter current | | | 1.5 | A |
| $P_T$ | Total power dissipation | | $T_C$=25℃ | 25 | W |
| $T_j$ | Junction temperature | | | 150 | ℃ |
| $T_{stg}$ | Storage temperature | | | -55~150 | ℃ |

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## CHARACTERISTICS

**Tj=25℃ unless otherwise specified**

| SYMBOL | PARAMETER | | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|---|
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage | 2SA968 | $I_C$=-10mA; $I_B$=0 | -160 | | | V |
| | | 2SA968A | | -180 | | | |
| | | 2SA968B | | -200 | | | |
| $V_{(BR)EBO}$ | Emitter-base breakdown voltage | | $I_E$=-1mA; $I_C$=0 | -5 | | | V |
| $V_{CEsat}$ | Collector-emitter saturation voltage | | $I_C$=-0.5A; $I_B$=-50mA | | | -1.5 | V |
| $V_{BE}$ | Base-emitter on voltage | | $I_C$=-500mA ; $V_{CE}$=-5V | | | -1.0 | V |
| $I_{CBO}$ | Collector cut-off current | | $V_{CB}$=-160V ;$I_E$=0 | | | -1.0 | μA |
| $I_{EBO}$ | Emitter cut-off current | | $V_{EB}$=-5V; $I_C$=0 | | | -1.0 | μA |
| $h_{FE}$ | DC current gain | | $I_C$=-100mA ; $V_{CE}$=-5V | 70 | | 240 | |
| $C_{ob}$ | Output capacitance | | $I_E$=0 ; $V_{CB}$=-10V,f=1MHz | | 30 | | pF |
| $f_T$ | Transition frequency | | $I_C$=-100mA ; $V_{CE}$=10V | | 100 | | MHz |

### ◆ $h_{FE}$ Classifications

| O | Y |
|---|---|
| 70-140 | 120-240 |

**PACKAGE OUTLINE**

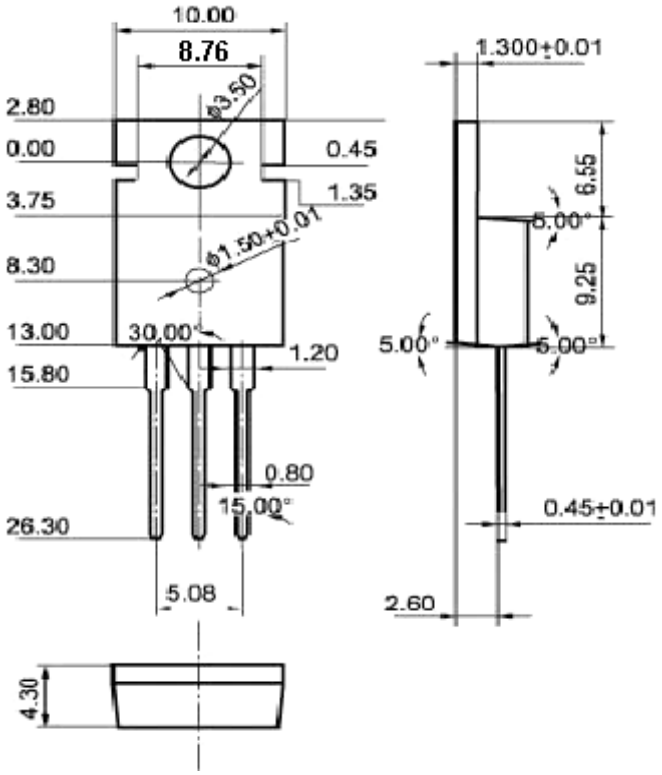



**Fig.2 Outline dimensions(unindicated tolerance:±0.10 mm)**