# Silicon PNP Power Transistors 2SA1008



## DESCRIPTION

·With TO-220 package
·Complement to type 2SC2331
·Low collector saturation voltage
·Fast switching speed

## APPLICATIONS

·Switching regulators
·DC/DC converters
·High frequency power amplifiers

**PINNING**

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

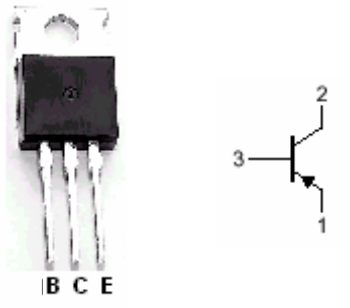


**Fig.1 simplified outline (TO-220) and symbol**

## Absolute maximum ratings(Ta=25□)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---|---|---|---|---|
| $V_{CBO}$ | Collector-base voltage | Open emitter | -100 | V |
| $V_{CEO}$ | Collector-emitter voltage | Open base | -100 | V |
| $V_{EBO}$ | Emitter-base voltage | Open collector | -7 | V |
| $I_C$ | Collector current | | -2.0 | A |
| $I_{CM}$ | Collector current-Peak | | -4.0 | A |
| $I_B$ | Base current | | -1.0 | A |
| $P_T$ | Total power dissipation | $T_a$=25□ | 1.5 | W |
| | | $T_C$=25□ | 15 | |
| $T_j$ | 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 |
|---|---|---|---|---|---|---|
| $V_{CEO(SUS)}$ | Collector-emitter sustaining voltage | $I_C$=-1.0A ,$I_B$=-0.1A,L=1mH | -100 | | | V |
| $V_{CEsat}$ | Collector-emitter saturation voltage | $I_C$=-1A; $I_B$=-0.1A | | | -0.6 | V |
| $V_{BEsat}$ | Base-emitter saturation voltage | $I_C$=-1A ;$I_B$=-0.1A | | | -1.5 | V |
| $I_{CBO}$ | Collector cut-off current | $V_{CB}$=-100V; $I_E$=0 | | | -10 | μA |
| $I_{EBO}$ | Emitter cut-off current | $V_{EB}$=-5V; $I_C$=0 | | | -10 | μA |
| $h_{FE-1}$ | DC current gain | $I_C$=-0.1A ; $V_{CE}$=-5V | 40 | | | |
| $h_{FE-2}$ | DC current gain | $I_C$=-1A ; $V_{CE}$=-5V | 40 | | 200 | |
| Switching times resistive load | | | | | | |
| $t_{on}$ | Turn-on time | $I_C$=-1.0A $I_{B1}$=- $I_{B2}$=-0.1A $R_L$=50Ω;$V_{CC}$≈50V | | | 0.5 | μs |
| $t_s$ | Storage time | | | | 1.5 | μs |
| $t_f$ | Fall time | | | | 0.5 | μs |

◆ **$h_{FE-2}$ Classifications**

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

**PACKAGE OUTLINE**

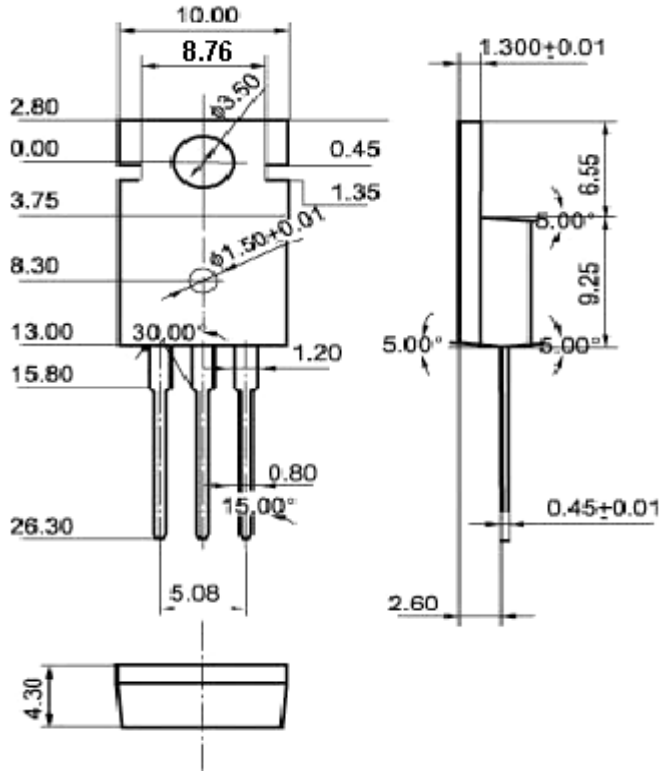


**Fig.2 Outline dimensions(unindicated tolerance:±0.10 mm)**

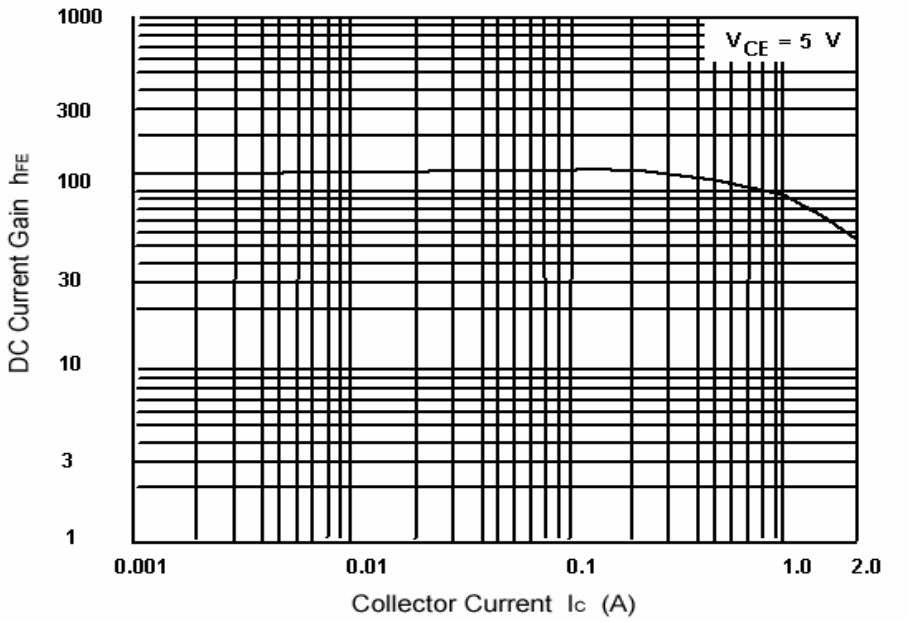


**Fig.3** DC current Gain

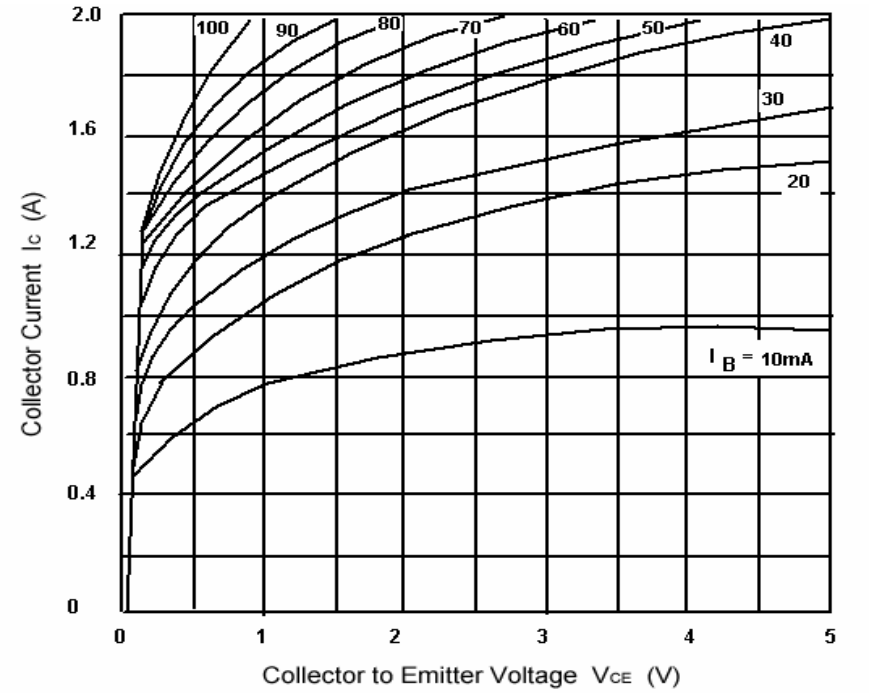


**Fig.4** Static Characteristic

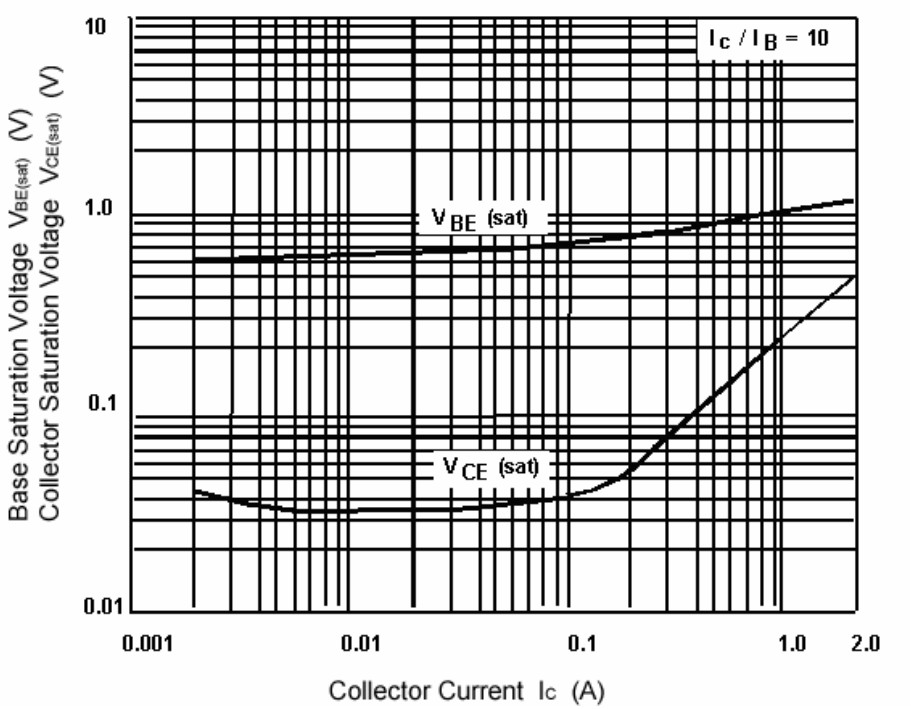


**Fig.5** Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

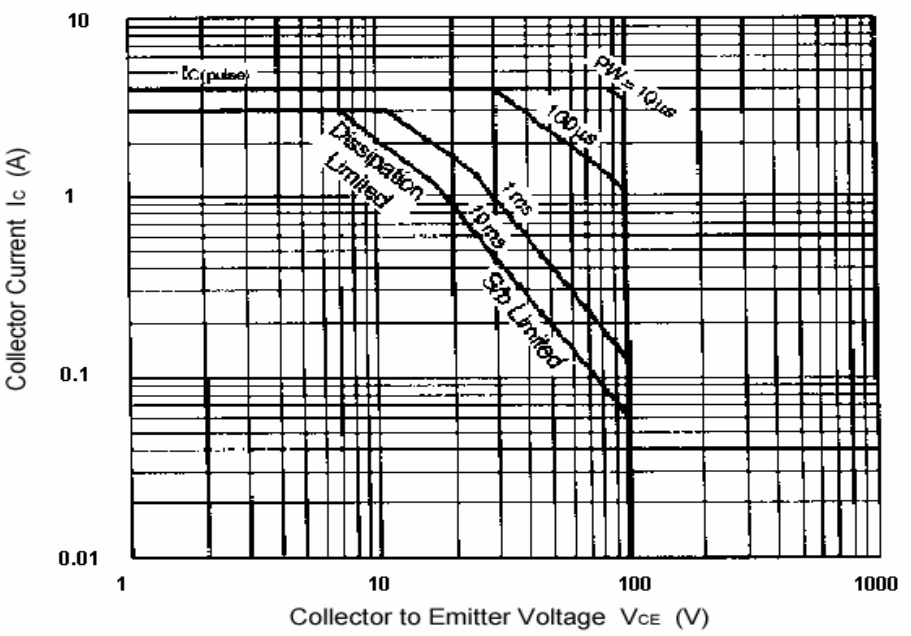


**Fig.6** Safe Operating Area