

**Silicon NPN Power Transistors****2SC2336 2SC2336A 2SC2336B****DESCRIPTION**

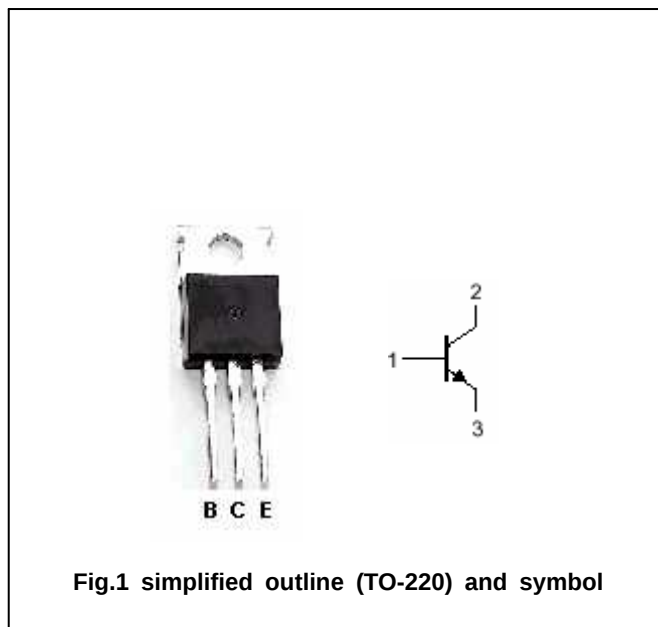
- With TO-220 package
- Complement to type 2SA1006, 2SA1006A, 2SA1006B

**APPLICATIONS**

- Audio frequency power amplifier
- High frequency power amplifier

**PINNING**

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

**Fig.1 simplified outline (TO-220) and symbol****Absolute maximum ratings( $T_a=25^\circ\text{C}$ )**

| SYMBOL    | PARAMETER                 | CONDITIONS     | VALUE   | UNIT |
|-----------|---------------------------|----------------|---------|------|
| $V_{CBO}$ | Collector-base voltage    | 2SC2336        | 180     | V    |
|           |                           | 2SC2336A       | 200     |      |
|           |                           | 2SC2336B       | 250     |      |
| $V_{CEO}$ | Collector-emitter voltage | 2SC2336        | 180     | V    |
|           |                           | 2SC2336A       | 200     |      |
|           |                           | 2SC2336B       | 250     |      |
| $V_{EBO}$ | Emitter-base voltage      | Open collector | 5       | V    |
| $I_C$     | Collector current         |                | 1.5     | A    |
| $I_{CM}$  | Collector current-peak    |                | 3.0     | A    |
| $P_T$     | Total power dissipation   | $T_a=25$       | 1.5     | W    |
|           |                           | $T_c=25$       | 25      |      |
| $T_j$     | Junction temperature      |                | 150     |      |
| $T_{stg}$ | Storage temperature       |                | -55~150 |      |

**Silicon NPN Power Transistors****2SC2336 2SC2336A 2SC2336B****CHARACTERISTICS****T<sub>j</sub>=25** unless otherwise specified

| SYMBOL             | PARAMETER                            | CONDITIONS                                      | MIN | TYP. | MAX | UNIT |
|--------------------|--------------------------------------|-------------------------------------------------|-----|------|-----|------|
| V <sub>CEsat</sub> | Collector-emitter saturation voltage | I <sub>C</sub> =0.5A; I <sub>B</sub> =50mA      |     |      | 1.0 | V    |
| V <sub>BEsat</sub> | Base-emitter saturation voltage      | I <sub>C</sub> =0.5A; I <sub>B</sub> =50mA      |     |      | 1.5 | V    |
| I <sub>CBO</sub>   | Collector cut-off current            | V <sub>CB</sub> =150V; I <sub>E</sub> =0        |     |      | 1   | μA   |
| I <sub>EBO</sub>   | Emitter cut-off current              | V <sub>EB</sub> =3V; I <sub>C</sub> =0          |     |      | 1   | μA   |
| h <sub>FE-1</sub>  | DC current gain                      | I <sub>C</sub> =5mA; V <sub>CE</sub> =5V        | 30  |      |     |      |
| h <sub>FE-2</sub>  | DC current gain                      | I <sub>C</sub> =150mA; V <sub>CE</sub> =5V      | 60  |      | 320 |      |
| C <sub>ob</sub>    | Output capacitance                   | I <sub>E</sub> =0; V <sub>CB</sub> =10V, f=1MHz |     | 30   |     | pF   |
| f <sub>T</sub>     | Transition frequency                 | I <sub>C</sub> =100mA; V <sub>CE</sub> =10V     |     | 95   |     | MHz  |

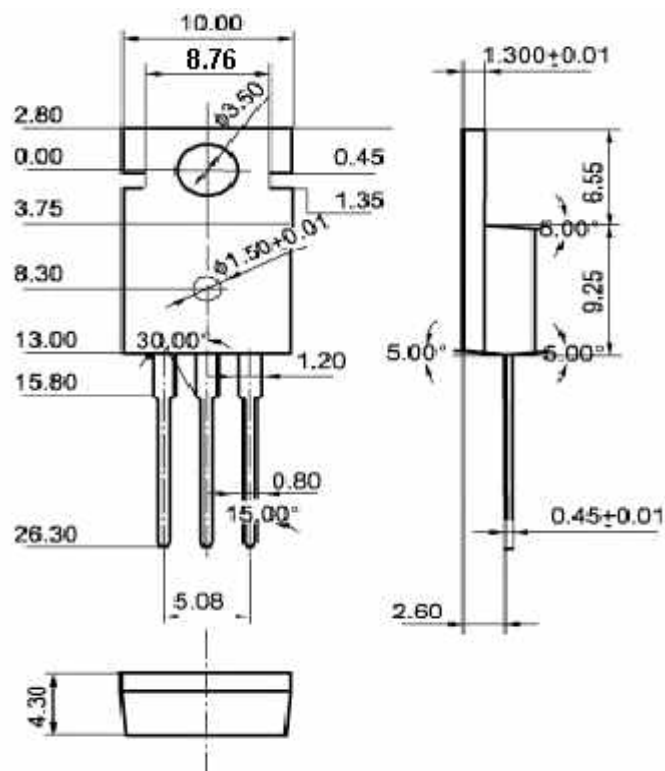
**◆ h<sub>FE-2</sub> Classifications**

| R      | Q       | P       |
|--------|---------|---------|
| 60-120 | 100-200 | 160-320 |

## Silicon NPN Power Transistors

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## PACKAGE OUTLINE

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

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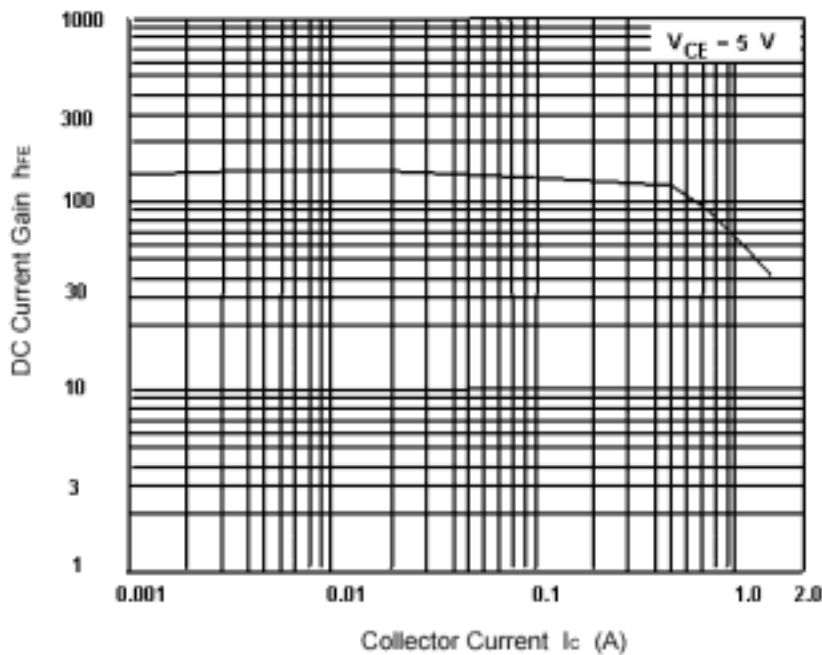


Fig.3 DC current Gain

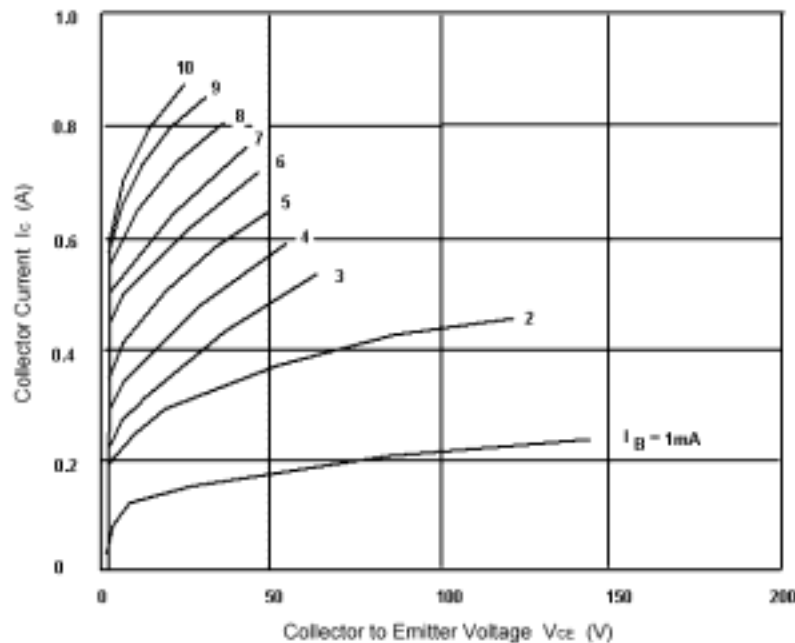


Fig.4 Static Characteristic

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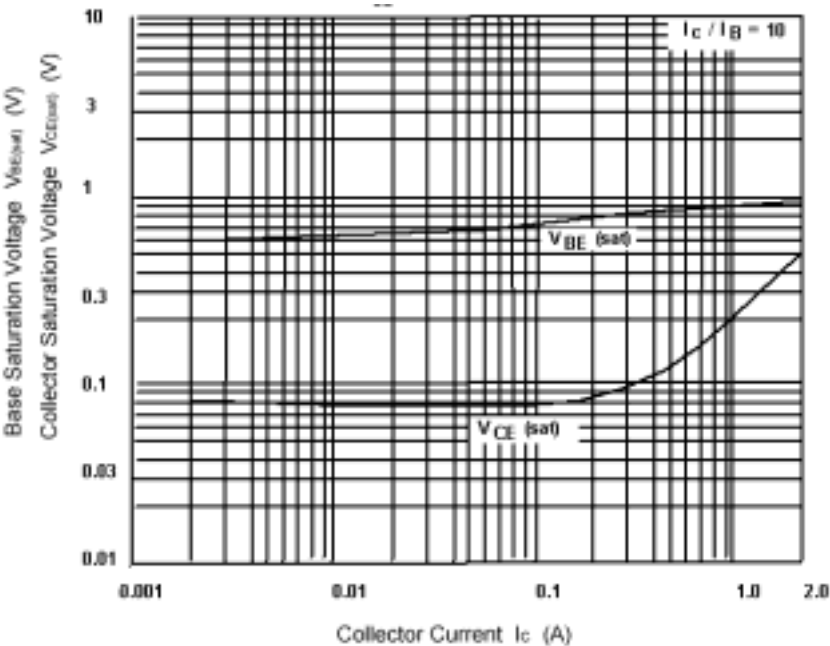


Fig.5 Base-Emitter Saturation Voltage  
Collector-Emmitter Saturation Voltage

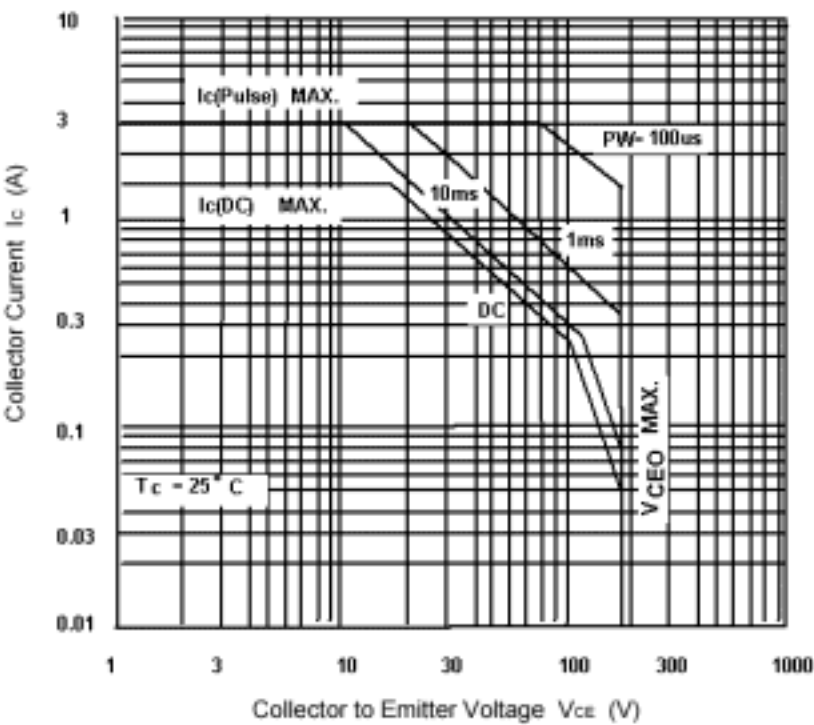


Fig.6 Safe Operating Area