

Silicon PNP Power Transistors

2SA1294

DESCRIPTION

- With TO-3PN package
- Complement to type 2SC3263

APPLICATIONS

- Audio and general purpose

PINNING

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

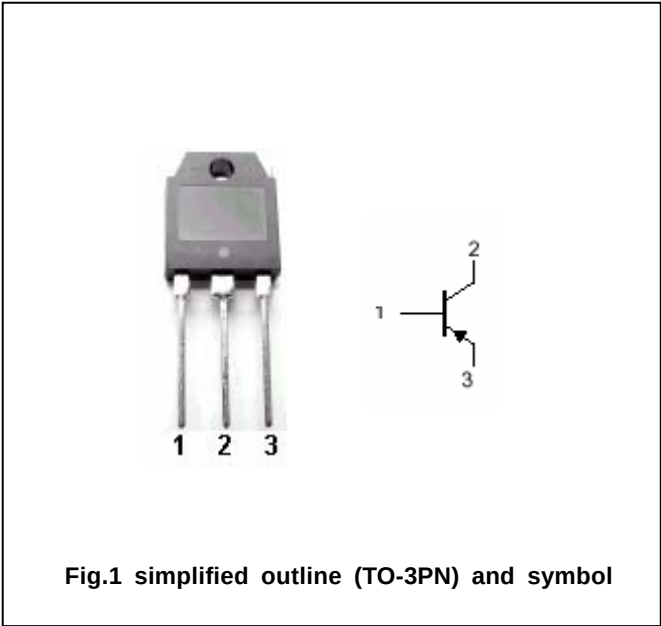


Fig.1 simplified outline (TO-3PN) and symbol

Absolute maximum ratings(Ta=°C)

| SYMBOL           | PARAMETER                   | CONDITIONS           | VALUE   | UNIT |
|------------------|-----------------------------|----------------------|---------|------|
| V <sub>CBO</sub> | Collector-base voltage      | Open emitter         | -230    | V    |
| V <sub>CEO</sub> | Collector-emitter voltage   | Open base            | -230    | V    |
| V <sub>EBO</sub> | Emitter-base voltage        | Open collector       | -5      | V    |
| I <sub>C</sub>   | Collector current           |                      | -15     | A    |
| I <sub>B</sub>   | Base current                |                      | -4      | A    |
| P <sub>C</sub>   | Collector power dissipation | T <sub>C</sub> =25°C | 130     | W    |
| T <sub>j</sub>   | Junction temperature        |                      | 150     | °C   |
| T <sub>stg</sub> | Storage temperature         |                      | -55~150 | °C   |

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## CHARACTERISTICS

Tj=25°C unless otherwise specified

| SYMBOL      | PARAMETER                            | CONDITIONS                         | MIN  | TYP. | MAX  | UNIT    |
|-------------|--------------------------------------|------------------------------------|------|------|------|---------|
| $V_{CEO}$   | Collector-emitter breakdown voltage  | $I_C=-25mA$ ; $I_B=0$              | -230 |      |      | V       |
| $V_{CEsat}$ | Collector-emitter saturation voltage | $I_C=-5A$ ; $I_B=-0.5A$            |      |      | -2.0 | V       |
| $I_{CBO}$   | Collector cut-off current            | $V_{CB}=-230V$ ; $I_E=0$           |      |      | -100 | $\mu A$ |
| $I_{EBO}$   | Emitter cut-off current              | $V_{EB}=-5V$ ; $I_C=0$             |      |      | -100 | $\mu A$ |
| $h_{FE}$    | DC current gain                      | $I_C=-5A$ ; $V_{CE}=4V$            | 50   |      | 140  |         |
| $C_{ob}$    | Output capacitance                   | $I_E=0$ ; $V_{CB}=-10V$ ; $f=1MHz$ |      | 500  |      | pF      |
| $f_T$       | Transition frequency                 | $I_E=2A$ ; $V_{CE}=-12V$           |      | 35   |      | MHz     |

## Switching times

|          |              |                                                                       |  |      |  |         |
|----------|--------------|-----------------------------------------------------------------------|--|------|--|---------|
| $t_{on}$ | Turn-on time | $I_C=-5A$ ; $R_L=12\Omega$<br>$I_{B1}=-I_{B2}=-0.5A$<br>$V_{CC}=-60V$ |  | 0.35 |  | $\mu s$ |
| $t_s$    | Storage time |                                                                       |  | 1.5  |  | $\mu s$ |
| $t_f$    | Fall time    |                                                                       |  | 0.3  |  | $\mu s$ |

◆  $h_{FE}$  Classifications

|        |        |
|--------|--------|
| O      | Y      |
| 50-100 | 70-140 |

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PACKAGE OUTLINE

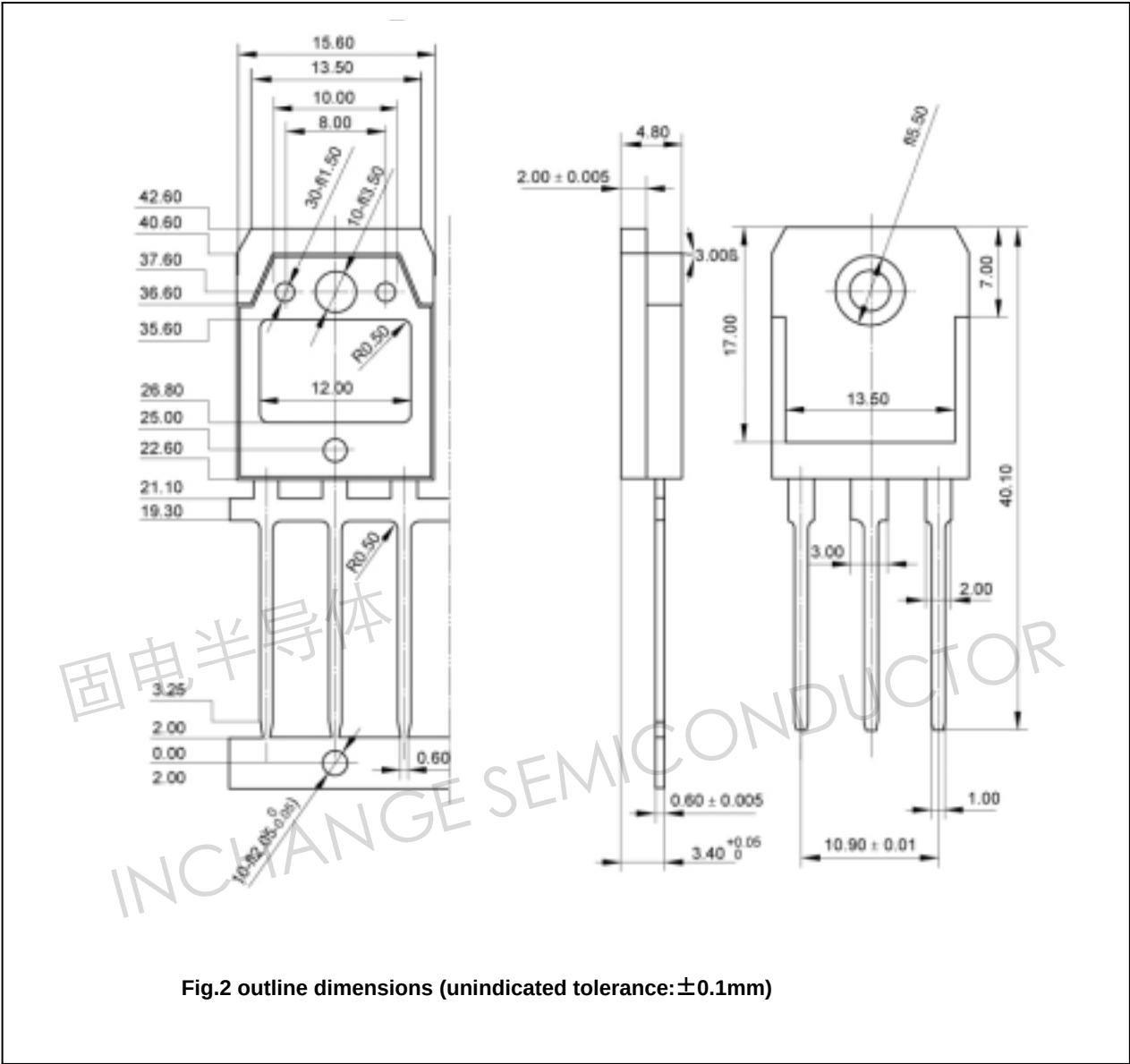


Fig.2 outline dimensions (unindicated tolerance:  $\pm 0.1\text{mm}$ )

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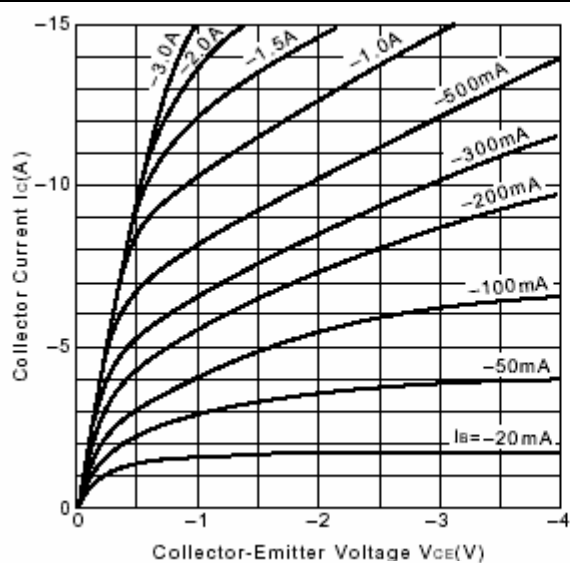


Fig.3 Static Characteristic

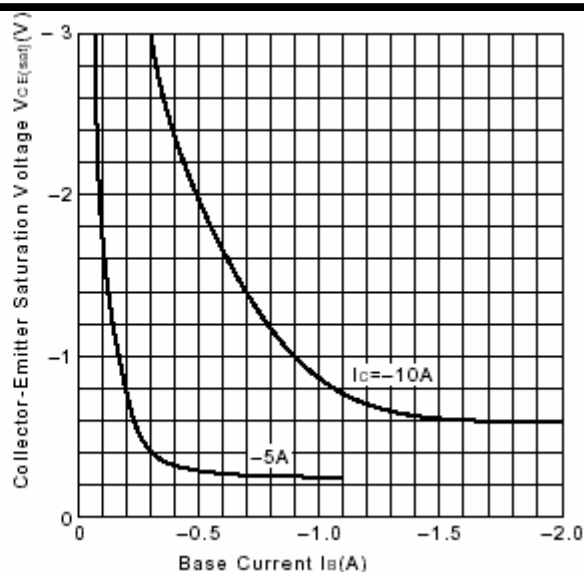
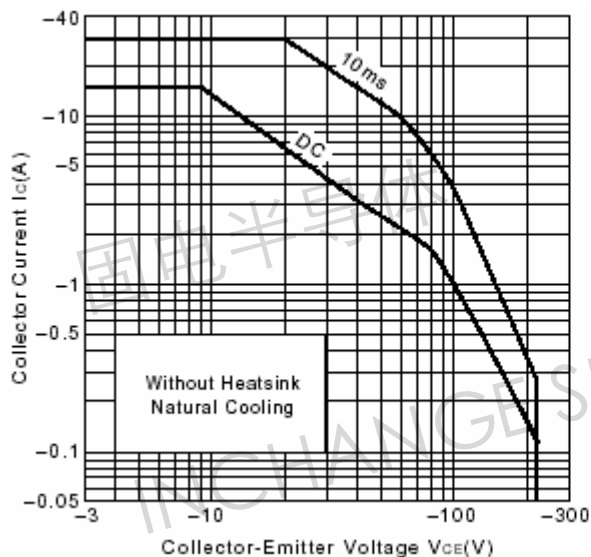
Fig.4  $V_{CE(sat)}$  -  $I_B$  Characteristics

Fig.5 Safe Operating Area

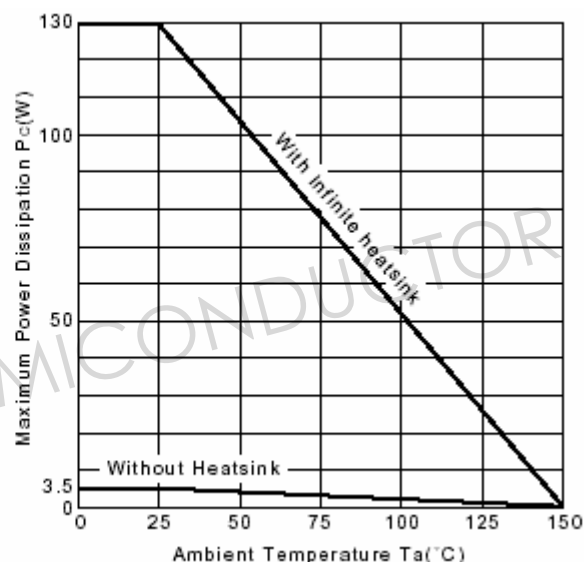
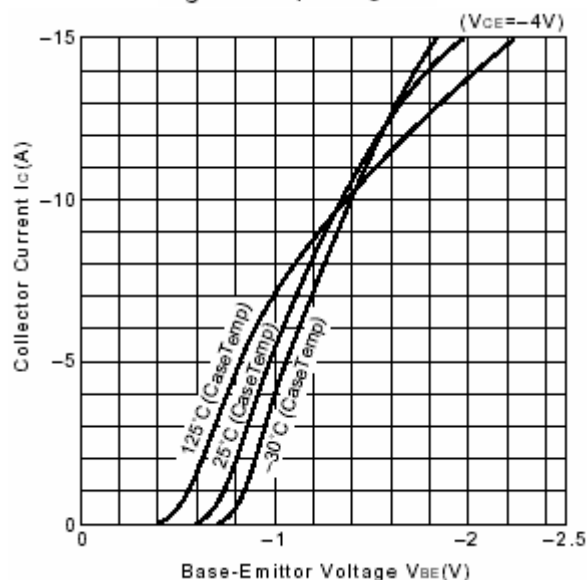
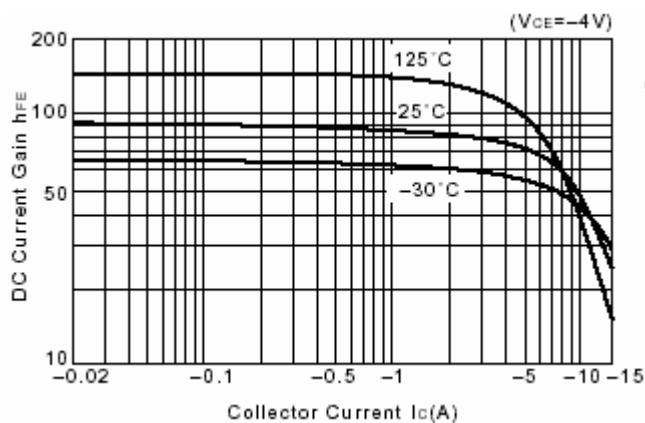
Fig.6  $P_C$  -  $T_a$  DeratingFig.7  $I_C$  -  $V_{BE}$ 

Fig.8 DC current Gain