

Silicon NPN Power Transistors

2SC2837

DESCRIPTION

- With TO-3PN package
- Complement to type 2SA1186

APPLICATIONS

- For audio and general purpose applications

PINNING

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

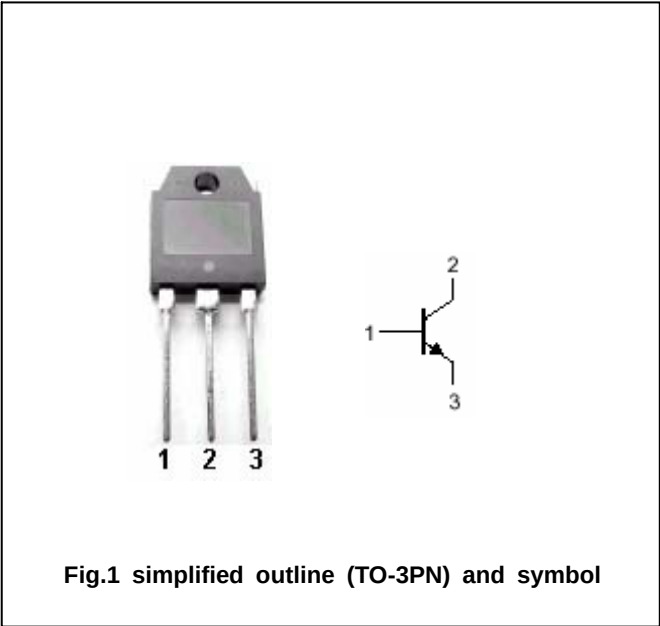


Fig.1 simplified outline (TO-3PN) and symbol

Absolute maximum ratings (Ta=25°C)

| SYMBOL           | PARAMETER                   | CONDITIONS           | VALUE   | UNIT |
|------------------|-----------------------------|----------------------|---------|------|
| V <sub>CBO</sub> | Collector-base voltage      | Open emitter         | 150     | V    |
| V <sub>CEO</sub> | Collector-emitter voltage   | Open base            | 150     | V    |
| V <sub>EBO</sub> | Emitter-base voltage        | Open collector       | 5       | V    |
| I <sub>C</sub>   | Collector current           |                      | 10      | A    |
| I <sub>B</sub>   | Base current                |                      | 2       | A    |
| P <sub>C</sub>   | Collector power dissipation | T <sub>C</sub> =25°C | 100     | 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 |
|---------------|--------------------------------------|--------------------------|-----|------|-----|------|
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage  | $I_C=25mA$ ; $I_B=0$     | 150 |      |     | V    |
| $V_{CEsat}$   | Collector-emitter saturation voltage | $I_C=5A$ ; $I_B=0.5A$    |     |      | 2.0 | V    |
| $I_{CBO}$     | Collector cut-off current            | $V_{CB}=150V$ ; $I_E=0$  |     |      | 0.1 | mA   |
| $I_{EBO}$     | Emitter cut-off current              | $V_{EB}=5V$ ; $I_C=0$    |     |      | 0.1 | mA   |
| $h_{FE}$      | DC current gain                      | $I_C=3A$ ; $V_{CE}=4V$   | 50  |      |     |      |
| $f_T$         | Transition frequency                 | $I_E=-1A$ ; $V_{CE}=12V$ |     | 70   |     | MHz  |
| $C_{OB}$      | Collector output capacitance         | $f=1MHz$ ; $V_{CB}=80V$  |     | 60   |     | pF   |

## Switching times

|          |              |                                                                    |  |      |  |         |
|----------|--------------|--------------------------------------------------------------------|--|------|--|---------|
| $t_{on}$ | Turn-on time | $I_C=5A$<br>$I_{B1}=-I_{B2}=0.5A$<br>$V_{CC}=60V$ , $R_L=12\Omega$ |  | 0.2  |  | $\mu s$ |
| $t_s$    | Storage time |                                                                    |  | 1.4  |  | $\mu s$ |
| $t_f$    | Fall time    |                                                                    |  | 0.35 |  | $\mu s$ |

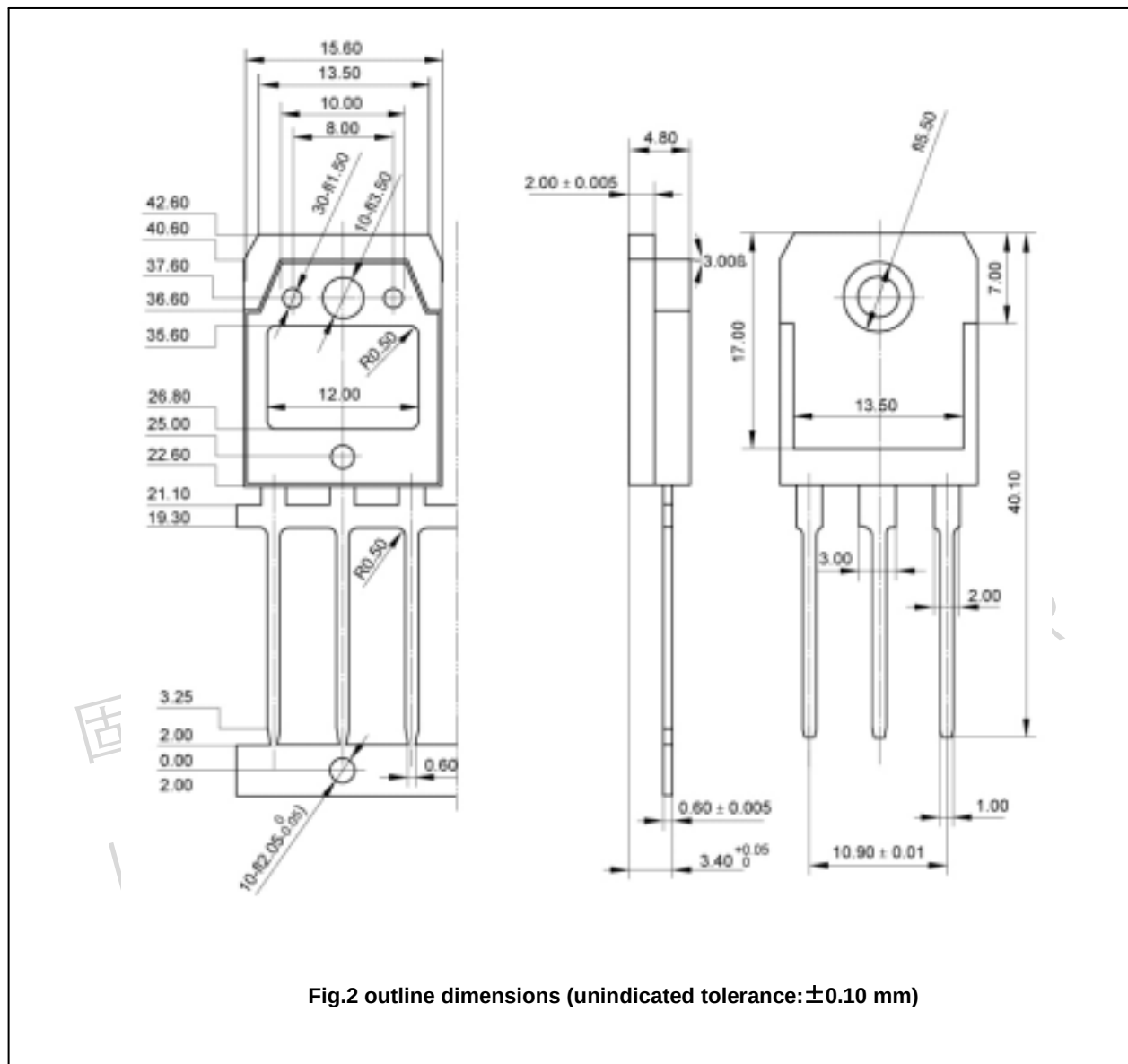
◆  $h_{FE}$  Classifications

| O      | P      | Y      |
|--------|--------|--------|
| 50-100 | 70-140 | 90-180 |

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## PACKAGE OUTLINE



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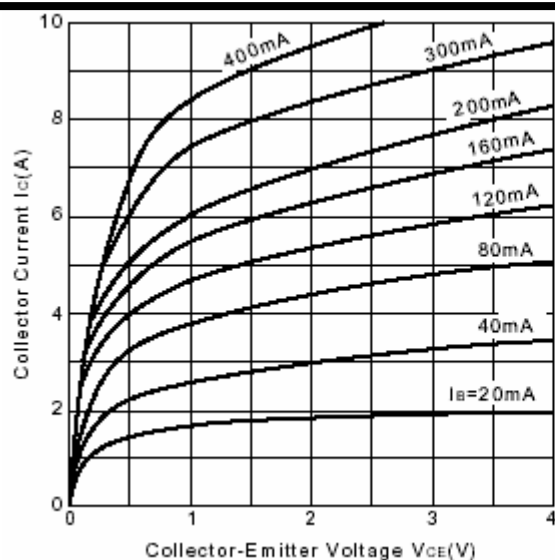


Fig.3 Static Characteristic

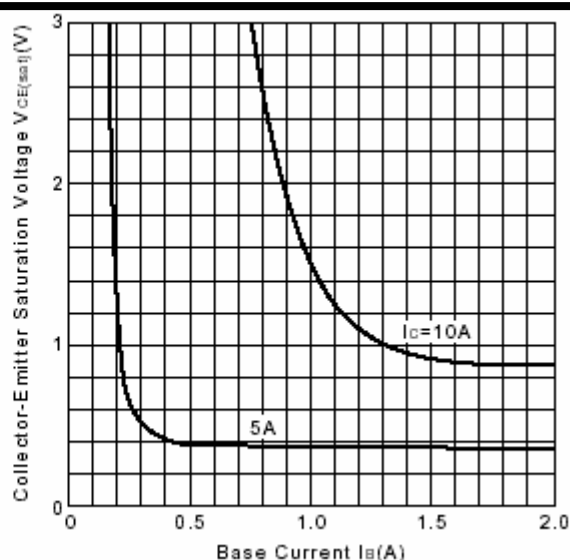
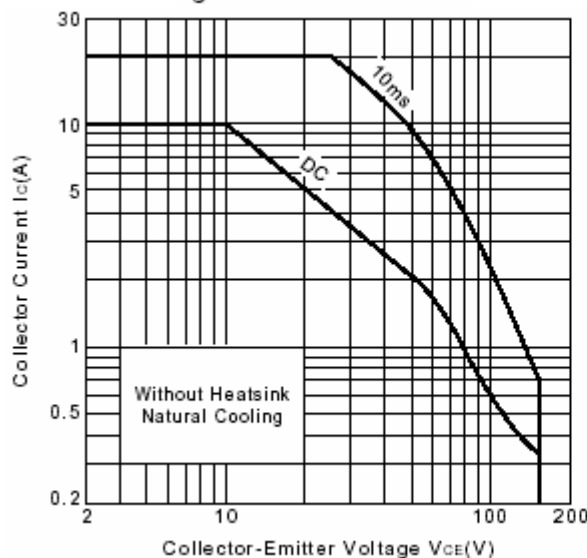
Fig.4  $V_{CE(sat)}-I_B$ 

Fig.5 Safe Operating Area

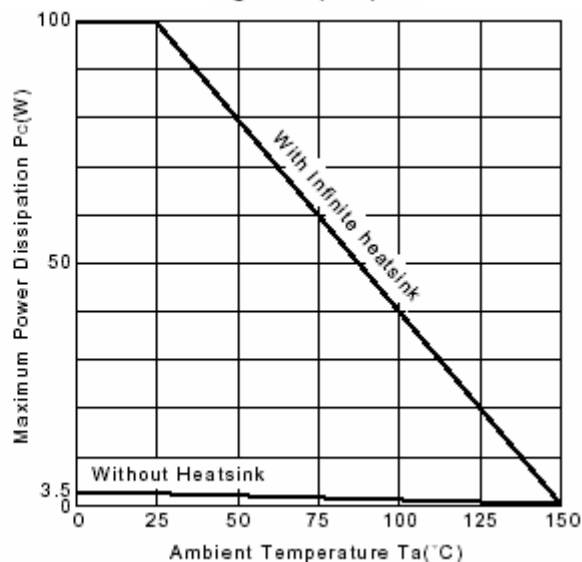


Fig.6 Power Derating

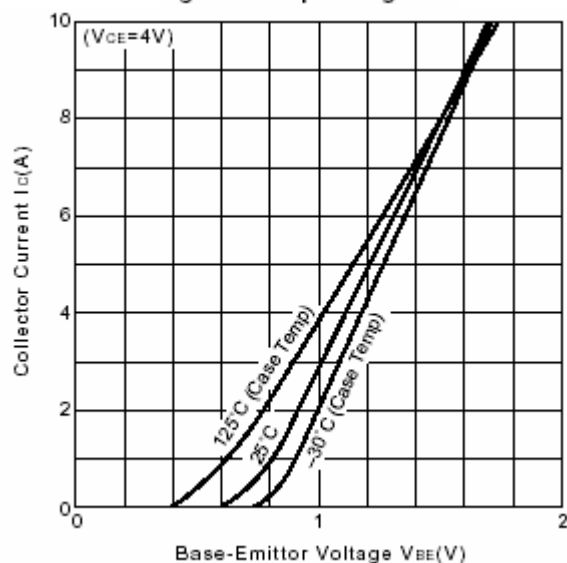
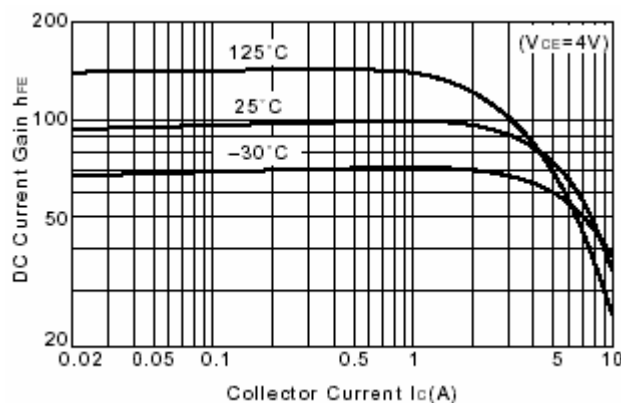
Fig.7  $I_C-V_{BE}$ 

Fig.8 DC current Gain