

Silicon PNP Power Transistors

2SA2031

DESCRIPTION

- With TO-3PN package
- Complement to type 2SC5669
- Wide area of safe operation
- Large current capacitance

APPLICATIONS

- For audio frequency output applications

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | Base |
| 2 | Collector |
| 3 | Emitter |

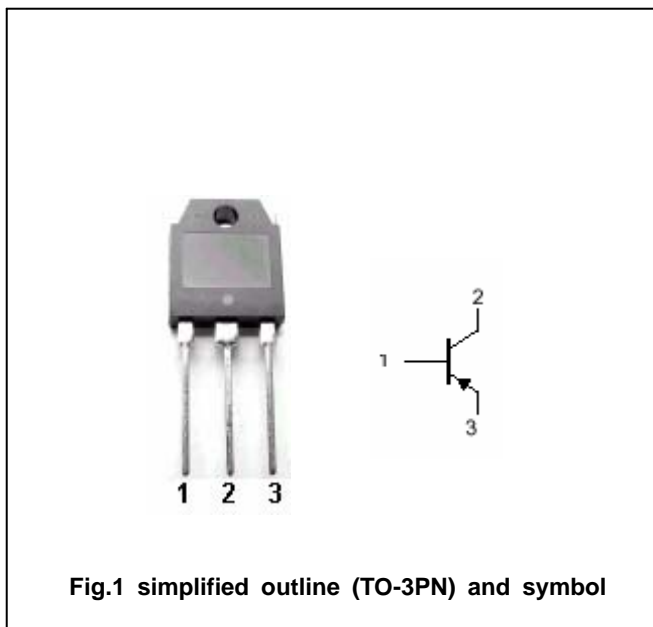


Fig.1 simplified outline (TO-3PN) and symbol

Absolute maximum ratings(Ta=25)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|-----------------------------|--------------------|---------|------|
| V _{CBO} | Collector-base voltage | Open emitter | -250 | V |
| V _{CEO} | Collector-emitter voltage | Open base | -230 | V |
| V _{EBO} | Emitter-base voltage | Open collector | -6 | V |
| I _C | Collector current | | -15 | A |
| I _{CM} | Collector current-peak | | -30 | A |
| P _C | Collector power dissipation | T _a =25 | 2.5 | W |
| | | T _C =25 | 140 | |
| T _j | Junction temperature | | 150 | |
| T _{stg} | Storage temperature | | -55~150 | |

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CHARACTERISTICS

T_j=25 unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|----------------------|--------------------------------------|--|------|------|------|------|
| V _{(BR)CEO} | Collector-emitter breakdown voltage | I _C =-50mA; R _{BE} = | -230 | | | V |
| V _{(BR)CBO} | Collector-base breakdown voltage | I _C =-5mA; I _E =0 | -250 | | | V |
| V _(BREBO) | Emitter-base breakdown voltage | I _E =-5mA; I _C =0 | -6 | | | V |
| V _{CEsat} | Collector-emitter saturation voltage | I _C =-7.5 A; I _B =-0.75A | | -0.3 | -2.0 | V |
| V _{BE} | Base-emitter saturation voltage | I _C =-7.5 A; V _{CE} =-5V | | | -1.5 | V |
| I _{CBO} | Collector cut-off current | V _{CB} =-250V; I _E =0 | | | -100 | μ A |
| I _{EBO} | Emitter cut-off current | V _{EB} =-4V; I _C =0 | | | -100 | μ A |
| h _{FE-1} | DC current gain | I _C =-1A; V _{CE} =-5V | 60 | | 160 | |
| h _{FE-2} | DC current gain | I _C =-7.5 A; V _{CE} =-5V | 35 | | | |
| C _{OB} | Output capacitance | I _E =0; V _{CB} =-10V, f=1MHz | | 400 | | pF |
| f _T | Transition frequency | I _C =-1A; V _{CE} =-5V | | 10 | | MHz |

Switching times

| | | | | | | |
|------------------|--------------|---|--|------|--|-----|
| t _{on} | Turn-on time | I _C =-7.5A; R _L =6.67 I _{B1} =-I _{B2} =-0.75A V _{CC} =-50V | | 0.45 | | μ s |
| t _{stg} | Storage time | | | 1.75 | | μ s |
| t _f | Fall time | | | 0.25 | | μ s |

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PACKAGE OUTLINE

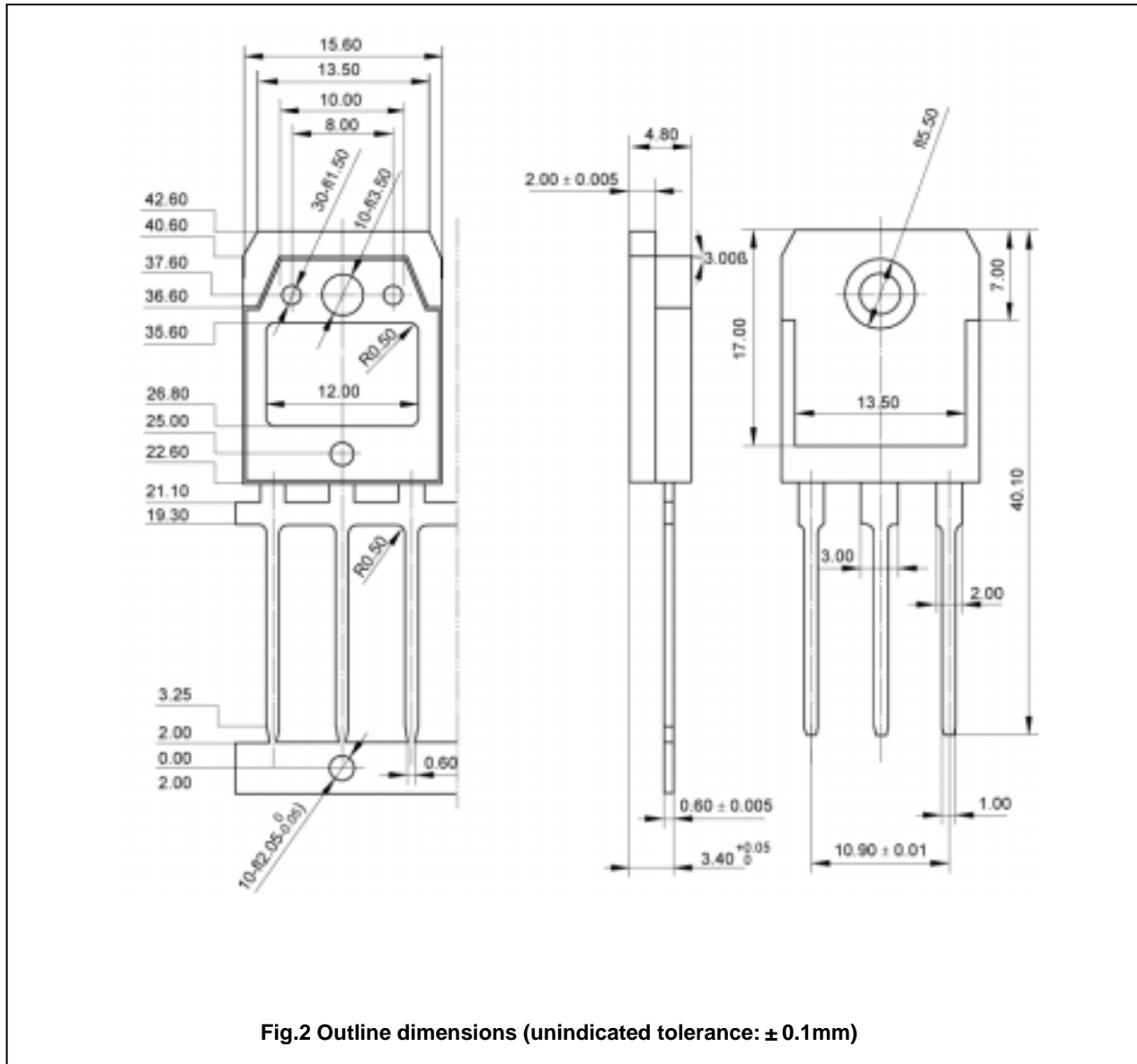


Fig.2 Outline dimensions (unindicated tolerance: ± 0.1mm)

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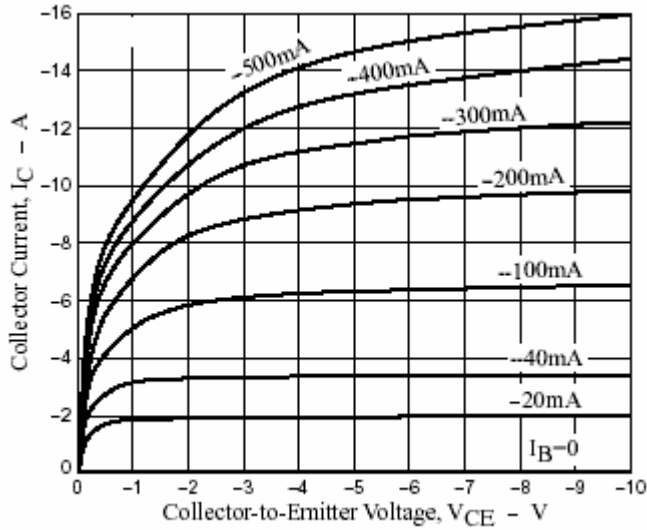


Fig.3 Static Characteristic

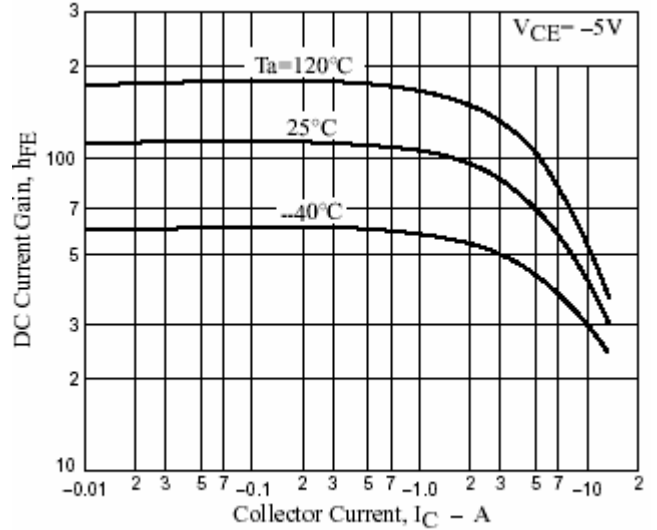


Fig.4 DC current Gain

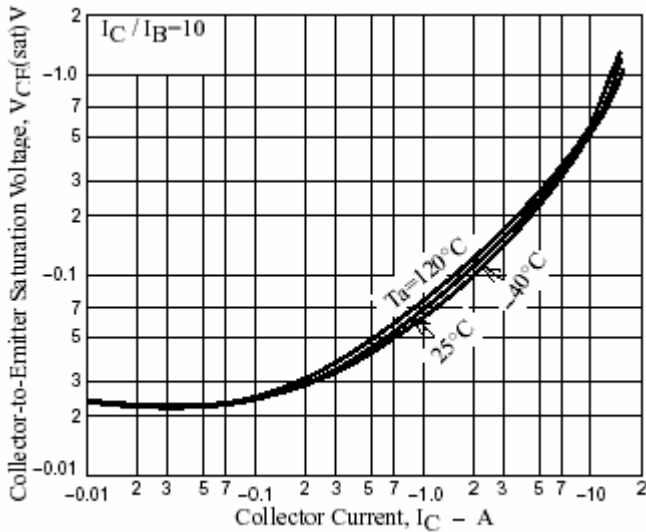


Fig.5 Collector-Emitter Saturation Voltage

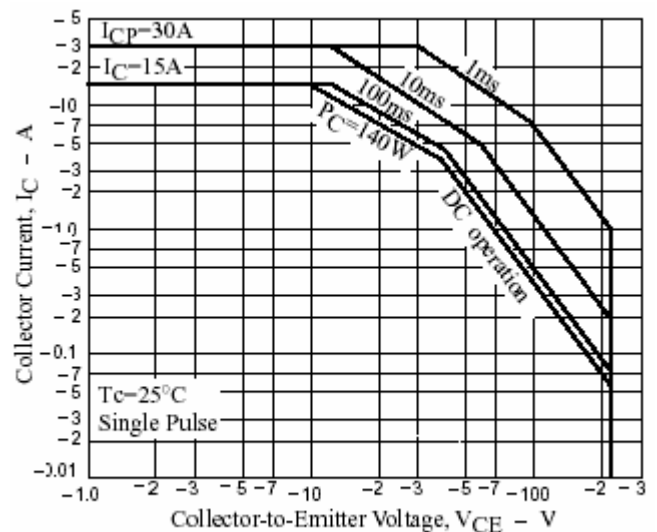


Fig.6 Safe Operating Area