

Silicon PNP Power Transistors

2SA1307

DESCRIPTION

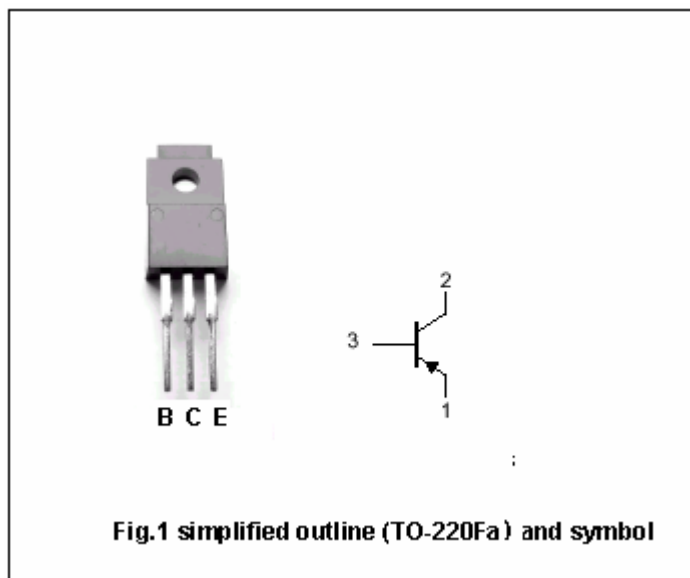
- With TO-220Fa package
- Complement to type 2SC3299
- Low saturation voltage
- High speed switching time

APPLICATIONS

- High current switching applications

PINNING

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



Absolute maximum ratings(Ta=25°C)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|-----------------------------|----------------------|---------|------|
| V _{CBO} | Collector-base voltage | Open emitter | -60 | V |
| V _{CEO} | Collector-emitter voltage | Open base | -50 | V |
| V _{EBO} | Emitter-base voltage | Open collector | -5 | V |
| I _C | Collector current | | -5 | A |
| I _B | Base current | | -1 | A |
| P _C | Collector power dissipation | T _C =25°C | 20 | W |
| | | T _a =25°C | 2 | |
| T _j | Junction temperature | | 150 | °C |
| T _{stg} | Storage temperature | | -55~150 | °C |

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CHARACTERISTICS

T_j=25 °C unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|----------------------|--------------------------------------|--|-----|------|------|------|
| V _{(BR)CEO} | Collector-emitter breakdown voltage | I _C =-10mA, I _B =0 | -50 | | | V |
| V _{CEsat} | Collector-emitter saturation voltage | I _C =-3A; I _B =-0.15A | | | -0.4 | V |
| V _{BEsat} | Base-emitter saturation voltage | I _C =-3A; I _B =-0.15A | | | -1.2 | V |
| I _{CBO} | Collector cut-off current | V _{CB} =-50V; I _E =0 | | | -1.0 | μA |
| I _{EBO} | Emitter cut-off current | V _{EB} =-5V; I _C =0 | | | -1.0 | μA |
| h _{FE-1} | DC current gain | I _C =-1A; V _{CE} =-1V | 70 | | 240 | |
| h _{FE-2} | DC current gain | I _C =-3A; V _{CE} =-1V | 30 | | | |
| C _{ob} | Output capacitance | I _E =0; V _{CB} =-10V, f=1MHz | | 170 | | pF |
| f _T | Transition frequency | I _C =-1A; V _{CE} =-4V | | 60 | | MHz |

Switching times

| | | | | | | |
|-----------------|--------------|--|--|-----|--|----|
| t _{on} | Turn-on time | I _{B1} =-I _{B2} =-0.15A, V _{CC} =30V R _L =10Ω | | 0.1 | | μs |
| t _s | Storage time | | | 1.0 | | μs |
| t _f | Fall time | | | 0.1 | | μs |

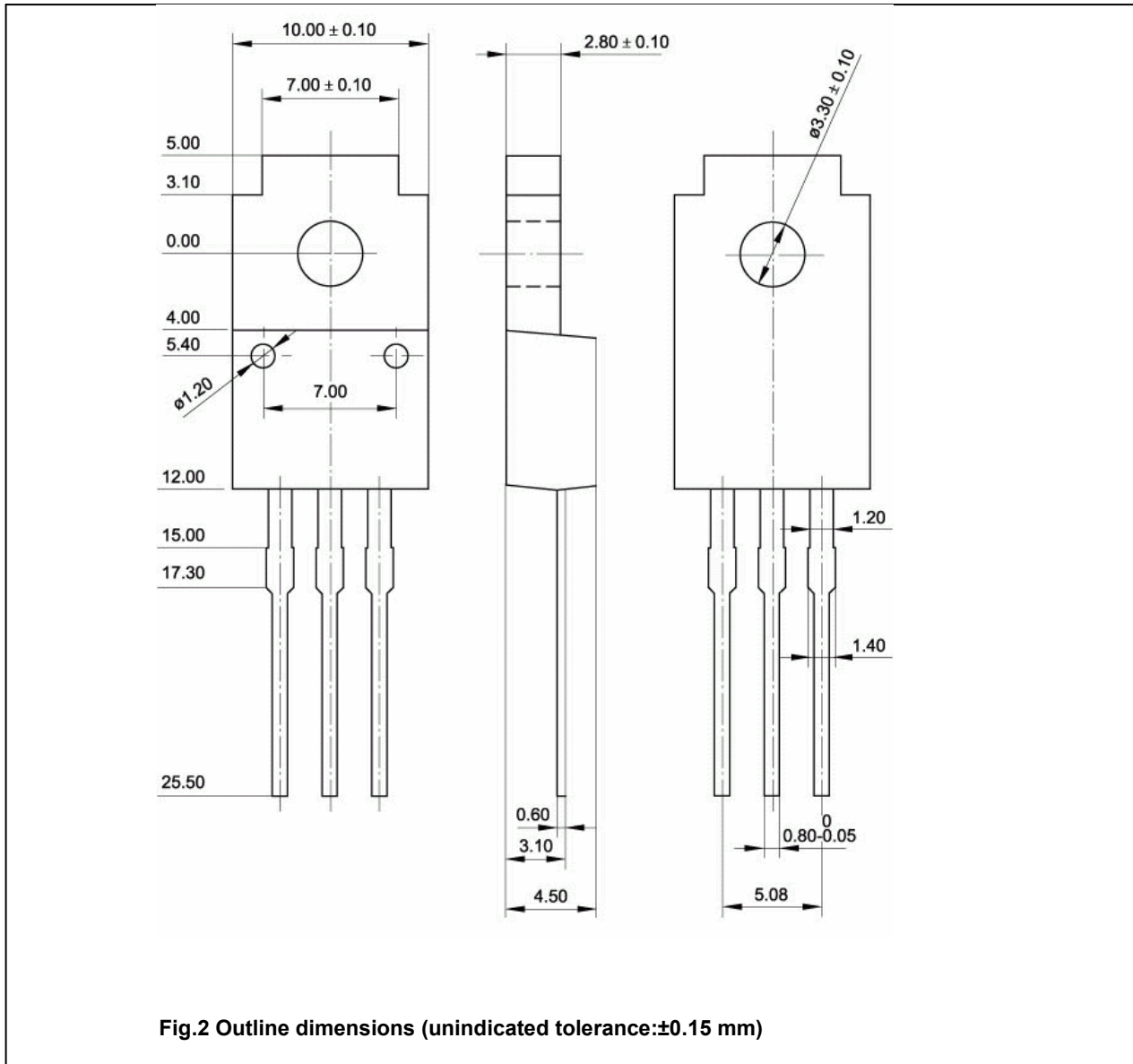
◆ h_{FE-1} Classifications

| O | Y |
|--------|---------|
| 70-140 | 120-240 |

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PACKAGE OUTLINE



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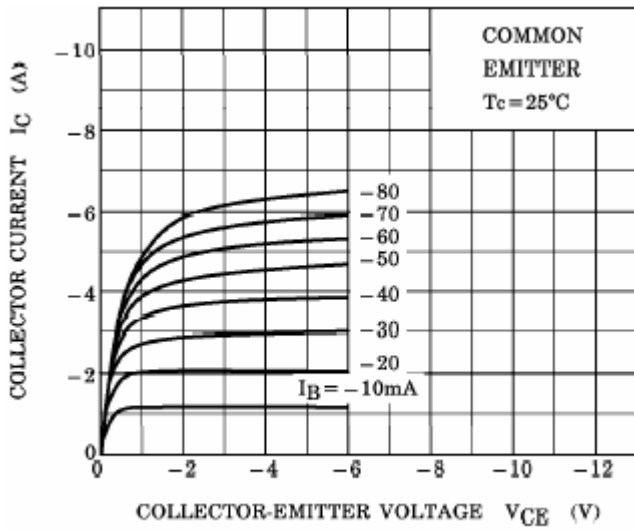


Fig.3 Static Characteristic

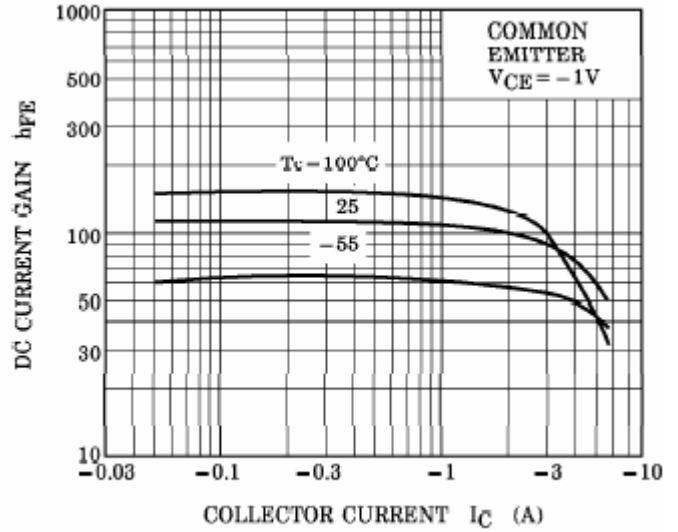


Fig.4 DC current Gain

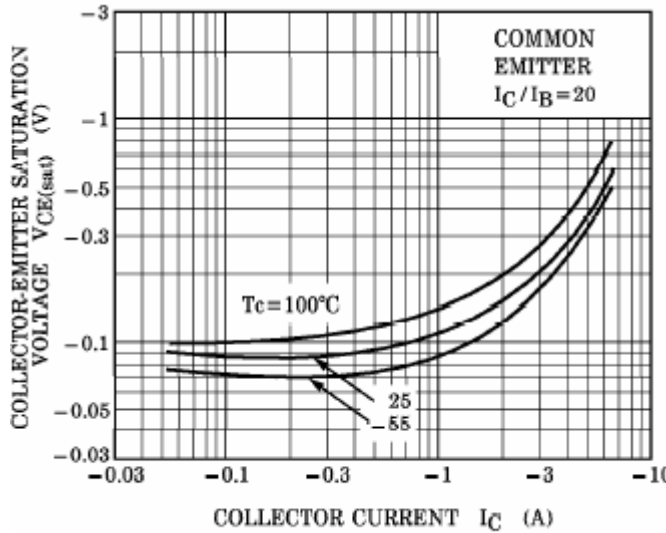


Fig.5 Collector-Emitter Saturation Voltage

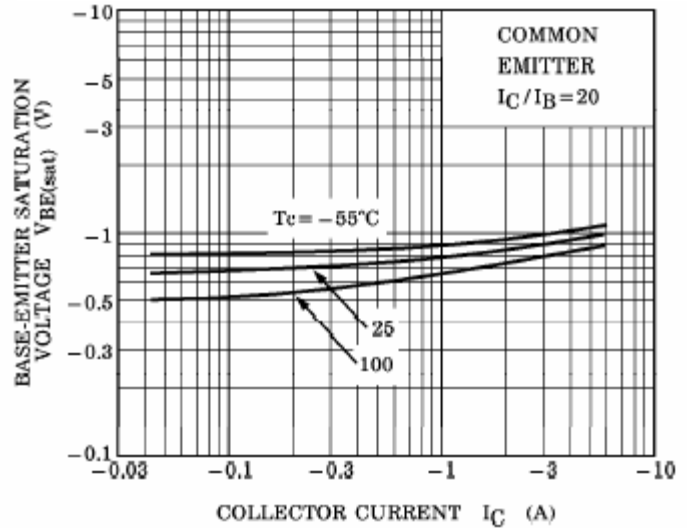


Fig.6 Base-Emitter Saturation Voltage

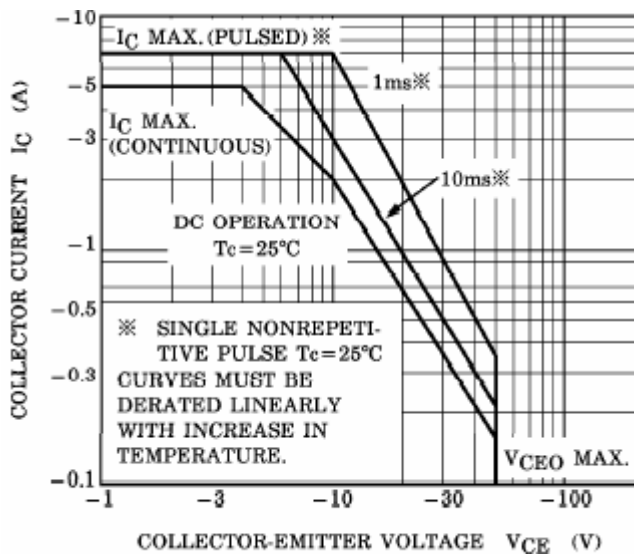


Fig.7 Safe Operating Area