

Silicon PNP Power Transistors

2SA1010

DESCRIPTION

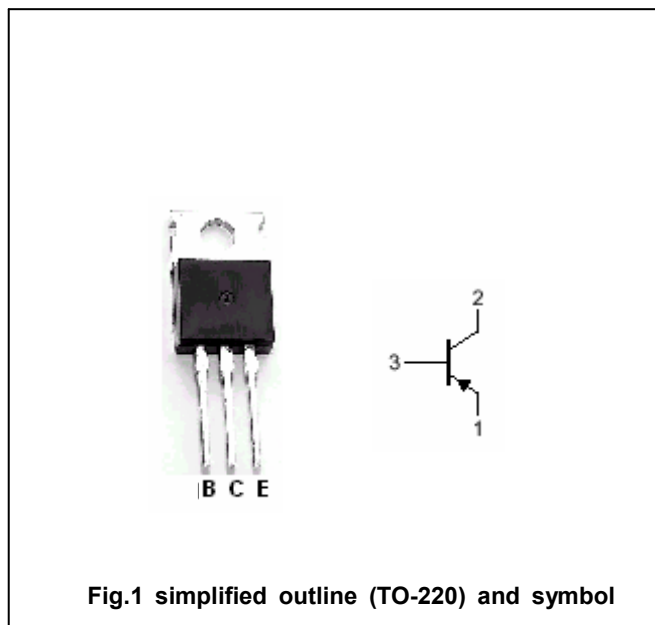
- With TO-220 package
- Complement to type 2SC2334
- Low collector saturation voltage
- Fast switching speed

APPLICATIONS

- Switching regulators
- DC/DC converters
- High frequency power amplifiers

PINNING

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

Absolute maximum ratings($T_a=25^\circ\text{C}$)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|-----------|---------------------------|------------------------|---------|------------------|
| V_{CBO} | Collector-base voltage | Open emitter | -100 | V |
| V_{CEO} | Collector-emitter voltage | Open base | -100 | V |
| V_{EBO} | Emitter-base voltage | Open collector | -7 | V |
| I_C | Collector current | | -7 | A |
| I_{CM} | Collector current-Peak | | -15 | A |
| I_B | Base current | | -3.5 | A |
| P_T | Total power dissipation | $T_a=25^\circ\text{C}$ | 1.5 | W |
| | | $T_C=25^\circ\text{C}$ | 40 | |
| T_j | Junction temperature | | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage temperature | | -55~150 | $^\circ\text{C}$ |

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CHARACTERISTICS

T_j=25°C unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|-----------------------|--------------------------------------|---|------|------|------|------|
| V _{CE0(SUS)} | Collector-emitter sustaining voltage | I _C =-5.0A, I _B =-0.5A, L=1mH | -100 | | | V |
| V _{CEsat} | Collector-emitter saturation voltage | I _C =-5A; I _B =-0.5A | | | -0.6 | V |
| V _{BEsat} | Base-emitter saturation voltage | I _C =-5A; I _B =-0.5A | | | -1.5 | V |
| I _{CBO} | Collector cut-off current | V _{CB} =-100V; I _E =0 | | | -10 | μA |
| I _{EBO} | Emitter cut-off current | V _{EB} =-5V; I _C =0 | | | -10 | μA |
| h _{FE-1} | DC current gain | I _C =-0.5A; V _{CE} =-5V | 40 | | 200 | |
| h _{FE-2} | DC current gain | I _C =-3A; V _{CE} =-5V | 40 | | 200 | |
| h _{FE-3} | DC current gain | I _C =-5A; V _{CE} =-5V | 20 | | | |

Switching times resistive load

| | | | | | | |
|-----------------|--------------|--|--|--|-----|----|
| t _{on} | Turn-on time | I _C =-5.0A I _{B1} =- I _{B2} =-0.5A R _L =10Ω; V _{CC} ≈50V | | | 0.5 | μs |
| t _s | Storage time | | | | 1.5 | μs |
| t _f | Fall time | | | | 0.5 | μs |

◆ h_{FE-2} Classifications

| M | L | K |
|-------|--------|---------|
| 40-80 | 60-120 | 100-200 |

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PACKAGE OUTLINE



Fig.2 Outline dimensions(unindicated tolerance: ± 0.10 mm)

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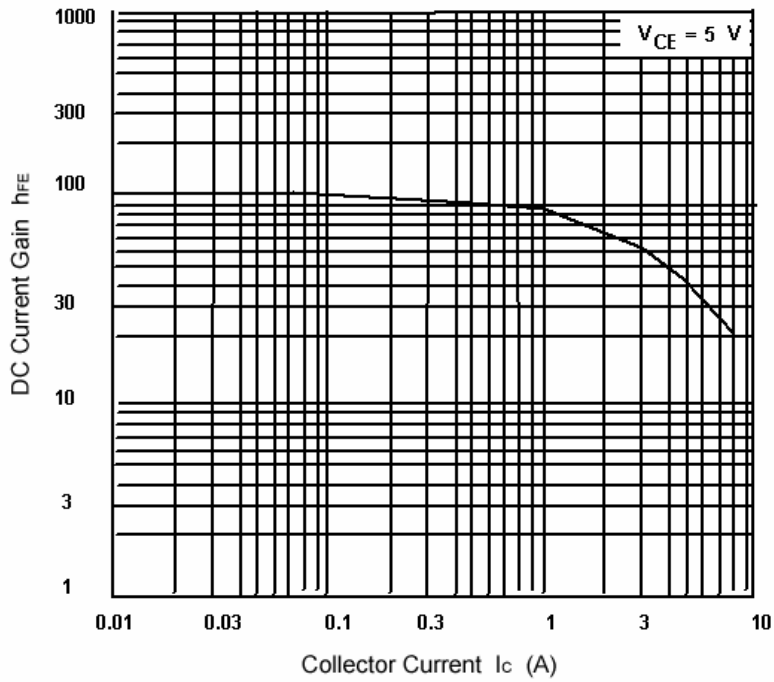


Fig.3 DC current Gain

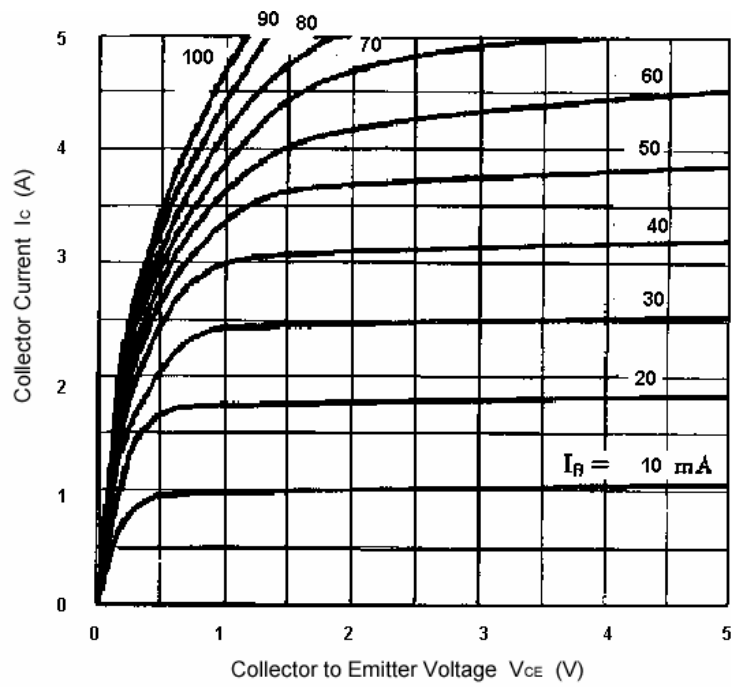


Fig.4 Static Characteristic

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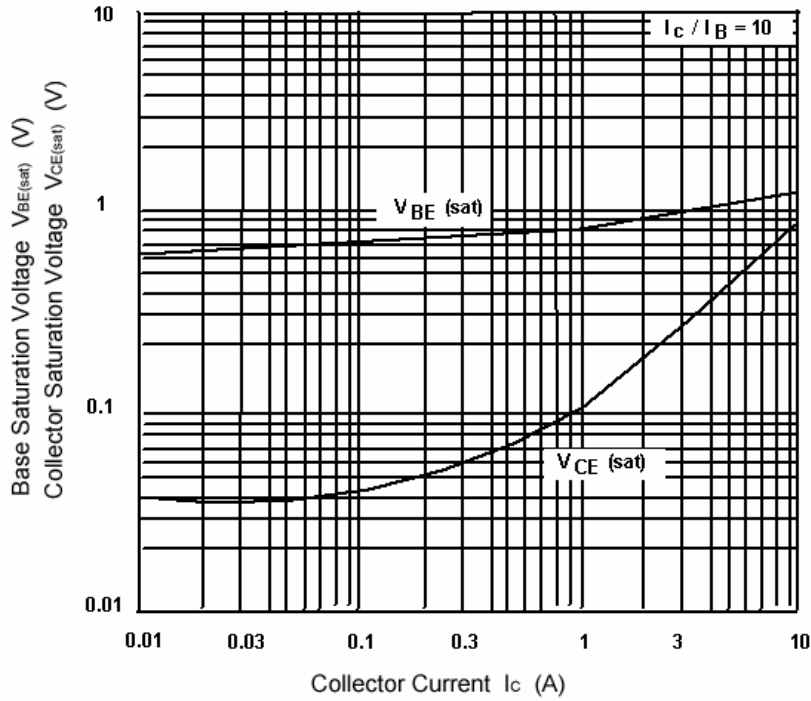


Fig.5 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

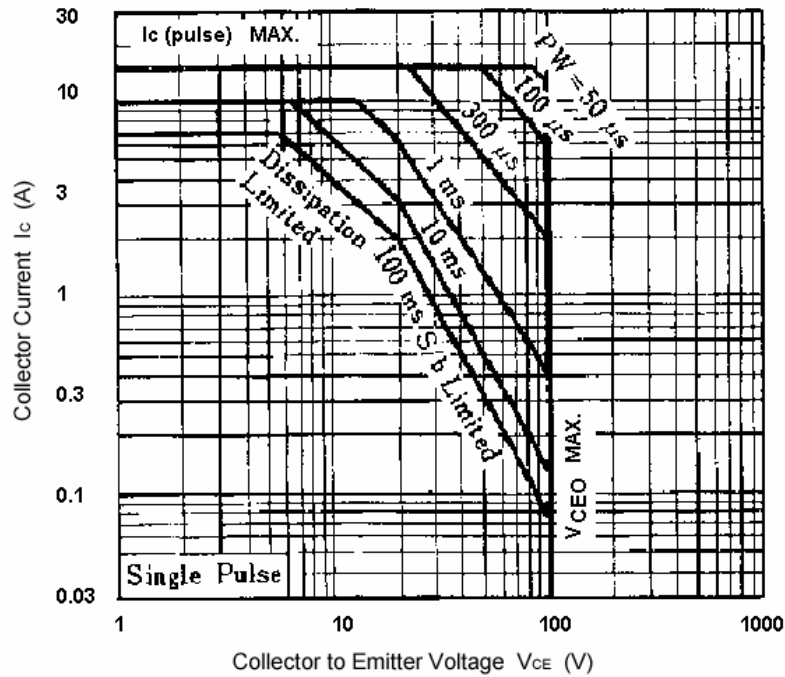


Fig.6 Safe Operating Area