

Silicon NPN Power Transistors

2SC2535

DESCRIPTION

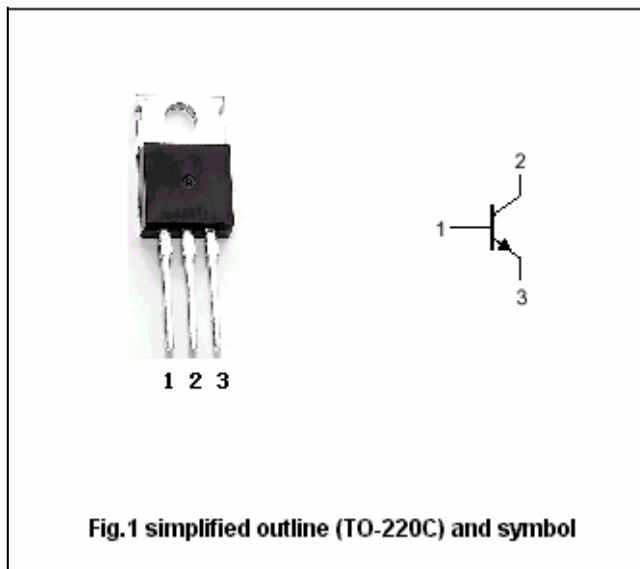
- With TO-220C package
- High collector breakdown voltage
: $V_{CEO}=400V(\text{Min})$
- Excellent switching time
: $t_r=1.0\mu s(\text{Max.})$
: $t_f=1.0\mu s(\text{Max.})$

APPLICATIONS

- High speed high voltage switching applications
- Switching regulator applications
- High speed DC-DC converter applications

PINNING

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



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

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|-----------|---------------------------|------------------|---------|------------|
| V_{CBO} | Collector-base voltage | Open emitter | 500 | V |
| V_{CEO} | Collector-emitter voltage | Open base | 400 | V |
| V_{EBO} | Emitter-base voltage | Open collector | 6 | V |
| I_C | Collector current | | 5 | A |
| I_B | Base current | | 1 | A |
| P_C | Collector dissipation | $T_a=25^\circ C$ | 1.5 | W |
| | | $T_C=25^\circ C$ | 40 | |
| T_j | Junction temperature | | 150 | $^\circ C$ |
| T_{stg} | Storage temperature | | -55~150 | $^\circ C$ |

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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 | $I_C=10mA ; I_B=0$ | 400 | | | V |
| $V_{(BR)CBO}$ | Collector-base breakdown voltage | $I_C=1mA ; I_E=0$ | 500 | | | V |
| V_{CEsat} | Collector-emitter saturation voltage | $I_C=3A ; I_B=0.6A$ | | | 1.0 | V |
| V_{BEsat} | Base-emitter saturation voltage | $I_C=3A ; I_B=0.6A$ | | | 1.5 | V |
| I_{CBO} | Collector cut-off current | $V_{CB}=400V ; I_E=0$ | | | 100 | μA |
| I_{EBO} | Emitter cut-off current | $V_{EB}=6V ; I_C=0$ | | | 1 | mA |
| h_{FE} | DC current gain | $I_C=3A ; V_{CE}=5V$ | 10 | | | |

Switching times

| | | | | | | |
|-----------|--------------|--|--|--|-----|---------|
| t_r | Rise time | $V_{CC}=200V ;$ $I_{B1}=-I_{B2}=0.3A ; R_L=68\Omega$ Duty cycle $\leq 1\%$ | | | 1.0 | μs |
| t_{stg} | Storage time | | | | 2.5 | μs |
| t_f | Fall time | | | | 1.0 | μs |

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PACKAGE OUTLINE

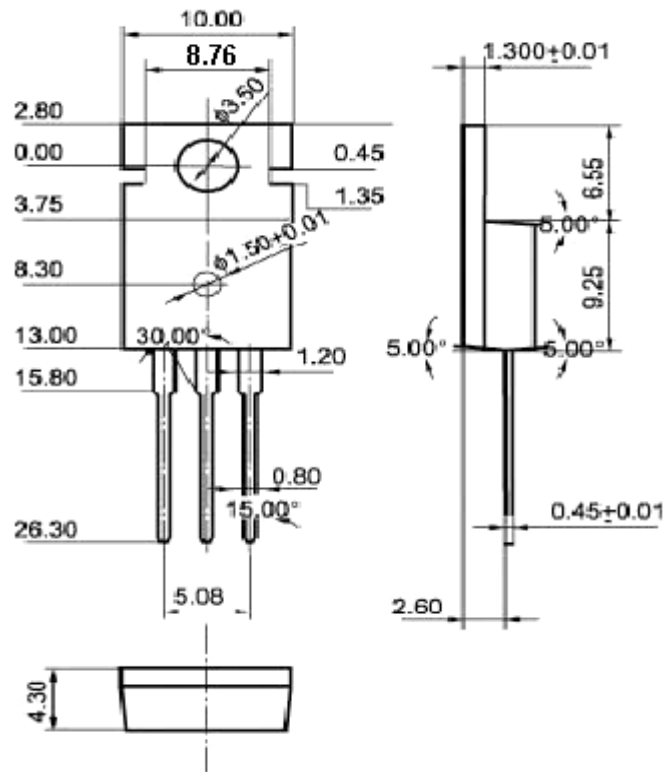


Fig.2 Outline dimensions (unindicated tolerance:±0.10 mm)

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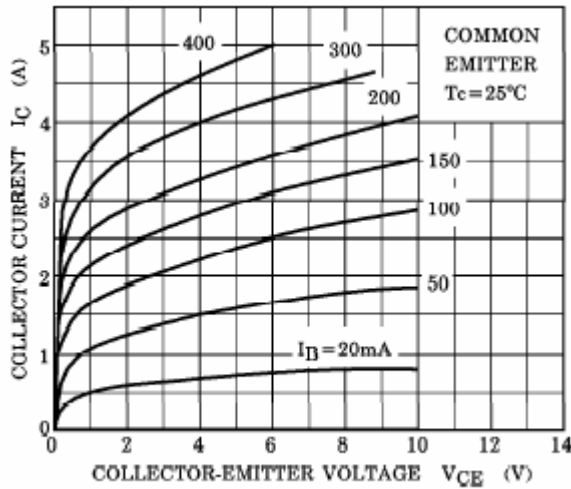


Fig.3 Static Characteristic

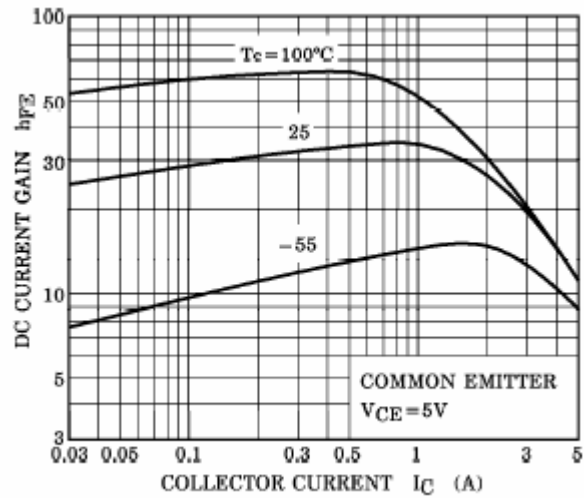


Fig.4 DC current Gain

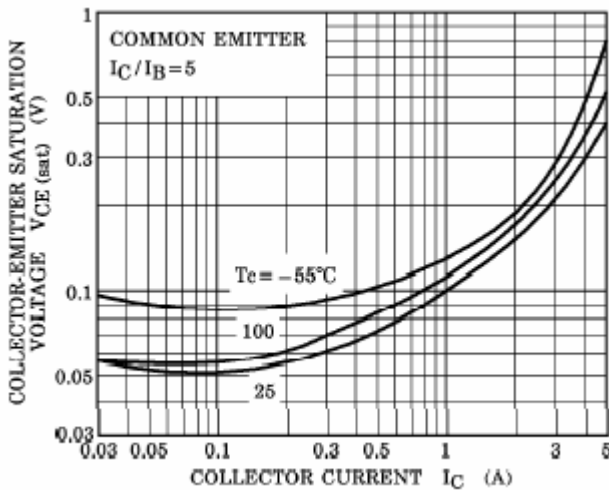


Fig.5 Collector-Emitter Saturation Voltage

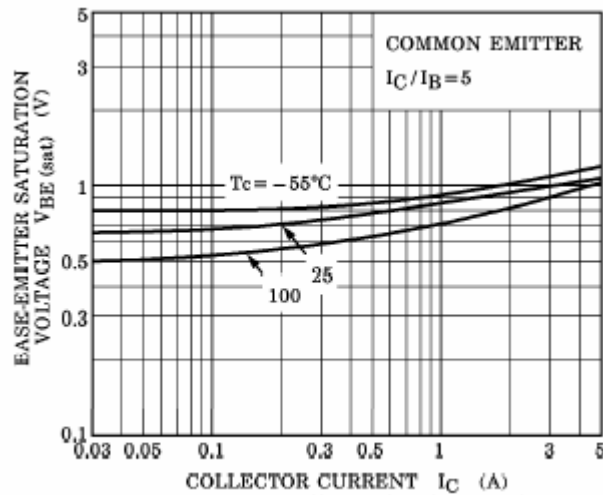


Fig.6 Base-Emitter Saturation Voltage

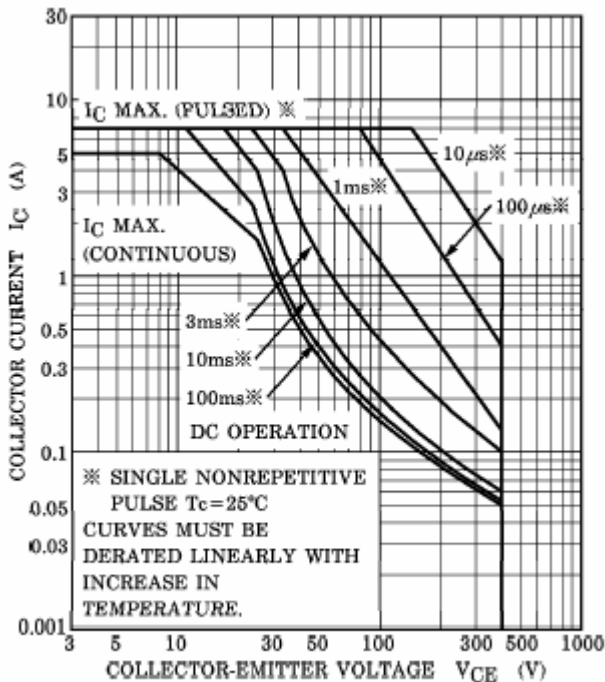


Fig.7 Safe Operating Area