# 2SC5251

Silicon NPN Triple Diffused Planar

HITACHI

Preliminary

## Application

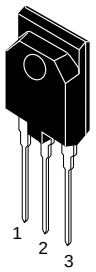
Character display horizontal deflection output

## Features

- High breakdown voltage
  $V_{CBO}$ = 1500 V
- High speed switching
  $t_f$ = 0.2 µsec (typ)
- Isolated package
  TO-3P•FM (N)

## Outline

TO-3PFM (N)




1. Base
2. Collector
3. Emitter

## Absolute Maximum Ratings (Ta = 25°C)

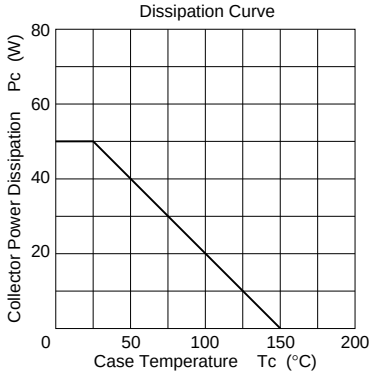
| Item | Symbol | Ratings | Unit |
|---|---|---|---|
| Collector to base voltage | $V_{CBO}$ | 1500 | V |
| Collector to emitter voltage | $V_{CEO}$ | 800 | V |
| Emitter to base voltage | $V_{EBO}$ | 6 | V |
| Collector current | $I_C$ | 12 | A |
| Collector peak current | $I_{C(peak)}$ | 24 | A |
| Collector power dissipation | $P_C$*[1] | 50 | W |
| Junction temperature | Tj | 150 | °C |
| Storage temperature | Tstg | –55 to +150 | °C |

Note: 1. Value at $T_C$ = 25°C

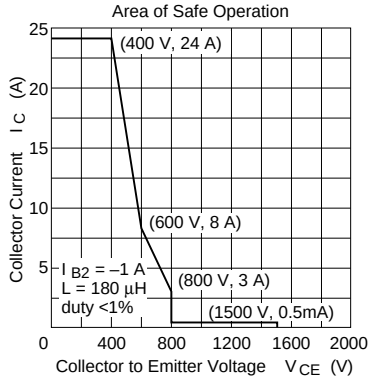
## Electrical Characteristics (Ta = 25°C)

| Item | Symbol | Min | Typ | Max | Unit | Test conditions |
|---|---|---|---|---|---|---|
| Collector to emitter breakdown voltage | $V_{(BR)CEO}$ | 800 | — | — | V | $I_C$ = 10 mA, $R_{BE}$ = ∞ |
| Emitter to base breakdown voltage | $V_{(BR)EBO}$ | 6 | — | — | V | $I_E$ = 10 mA, $I_C$ = 0 |
| Collector cutoff current | $I_{CES}$ | — | — | 500 | µA | $V_{CE}$ = 1500 V, $R_{BE}$ = 0 |
| DC current transfer ratio | $h_{FE1}$ | 8 | — | 35 | | $V_{CE}$ = 5 V, $I_C$ = 1 A |
| DC current transfer ratio | $h_{FE2}$ | 5 | — | 9 | | $V_{CE}$ = 5 V, $I_C$ = 5 A |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | — | — | 5 | V | $I_C$ = 7 A, $I_B$ = 1.8 A |
| Base to emitter saturation voltage | $V_{BE(sat)}$ | — | — | 1.5 | V | $I_C$ = 7 A, $I_B$ = 1.8 A |
| Fall time | $t_f$ | — | 0.2 | 0.4 | µsec | $I_{CP}$ = 6 A, $I_{B1}$ = 1.5 A, $f_H$ = 31.5 kHz |

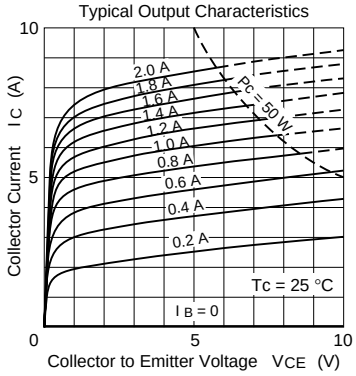
Maximum Collector Power Dissipation Curve



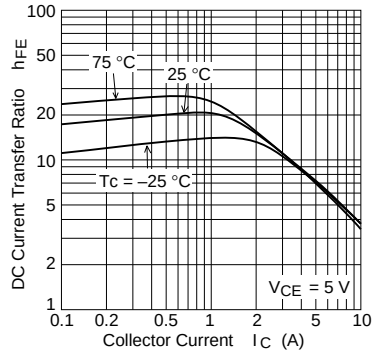

Area of Safe Operation



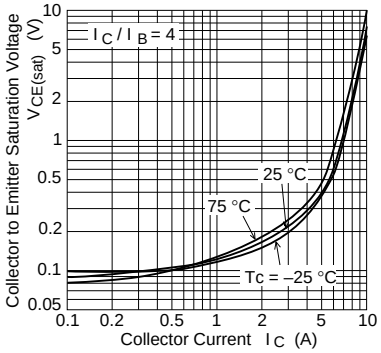

Typical Output Characteristics



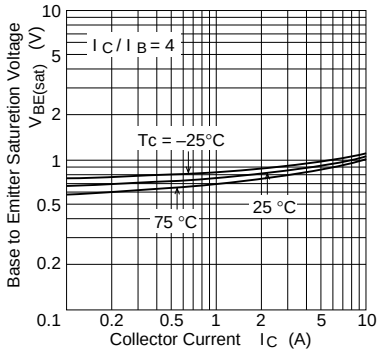
DC Current Transfer Ratio
vs. Collector Current



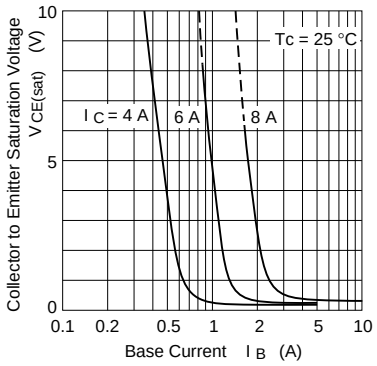

Collector to Emitter Saturation Voltage
vs. Collector Current



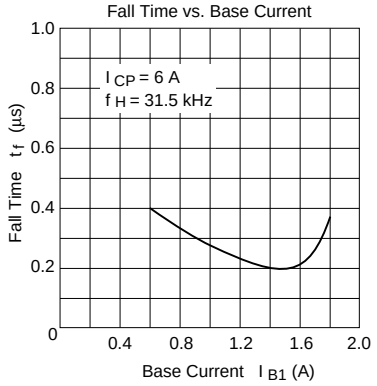

Base to Emitter Saturation Voltage
vs. Collector Current



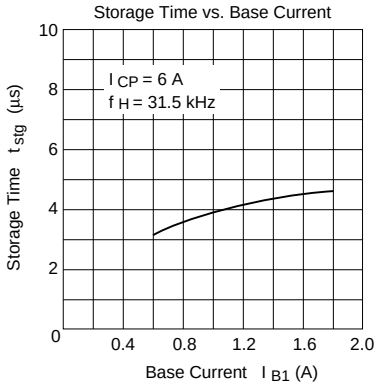
Collector to Emitter Saturation Voltage vs. Base Current




Fall Time vs. Base Current




Storage Time vs. Base Current



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