# 2SC5252

Silicon NPN Triple Diffused Planar

HITACHI

ADE-208-391A (Z)
2nd. Edition

## Application

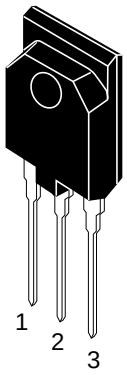
Character display horizontal deflection output

## Features

- High breakdown voltage
  $V_{CBO}$ = 1500 V
- High speed switching
  $t_f \leq 0.15$ µsec(typ.)
- Isolated package
  TO–3P•FM

## Outline

TO-3PFM




1. Base
2. Collector
3. Emitter

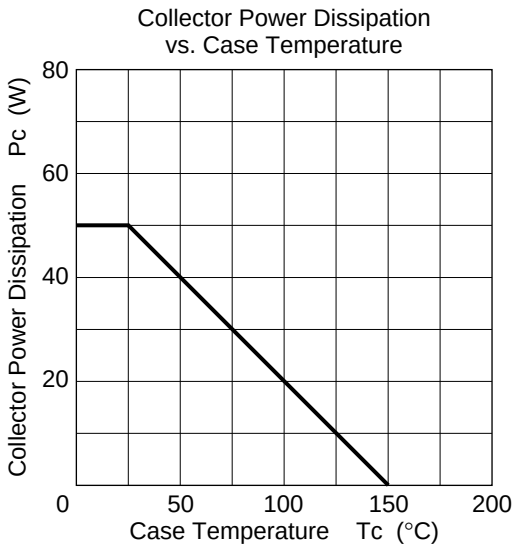
## Absolute Maximum Ratings (Ta = 25°C)

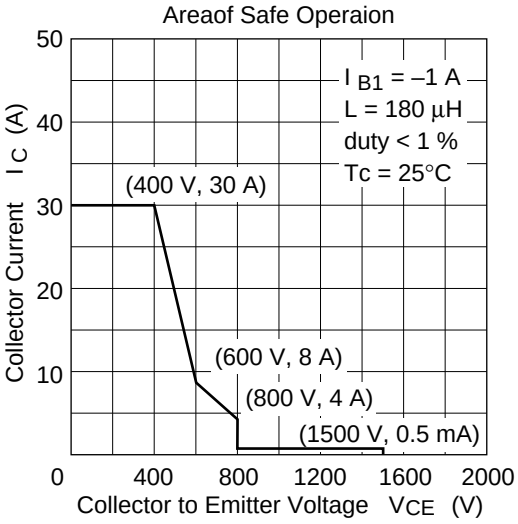
| Item | Symbol | Ratings | Unit |
|---|---|---|---|
| Collector to base voltage | $V_{CBO}$ | 1500 | V |
| Collector to emitter voltage | $V_{CEO}$ | 800 | V |
| Emitter to base voltage | $V_{EBO}$ | 6 | V |
| Collector current | $I_C$ | 15 | A |
| Collector peak current | $I_{C(peak)}$ | 30 | A |
| Collector power dissipation | $P_C$*[1] | 50 | W |
| Junction temperature | Tj | 150 | °C |
| Storage temperature | Tstg | –55 to +150 | °C |

Note: 1. $T_C$ = 25°C

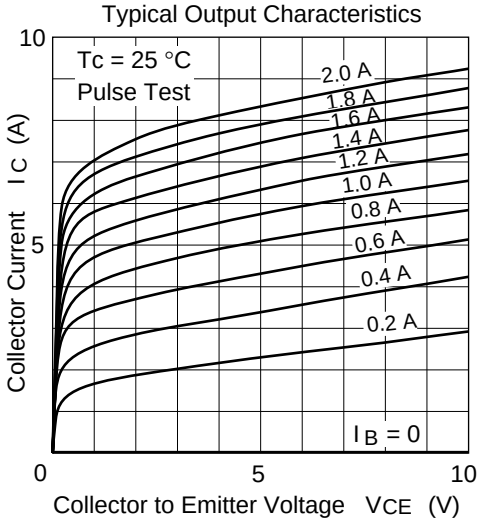
## Electrical Characteristics (Ta = 25°C)

| 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 | $h_{FE2}$ | 3 | — | 6 | | $V_{CE}$ = 5 V, $I_C$ = 8 A |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | — | — | 5 | V | $I_C$ = 10 A, $I_B$ = 3 A |
| Base to emitter saturation voltage | $V_{BE(sat)}$ | — | — | 1.5 | V | $I_C$ = 10 A, IB = 3 A |
| Fall time | $t_f$ | — | 0.15 | 0.3 | µsec | $I_{CP}$ = 7 A, $I_{B1}$ = 2 A, $f_H$ = 31.5 kHz |

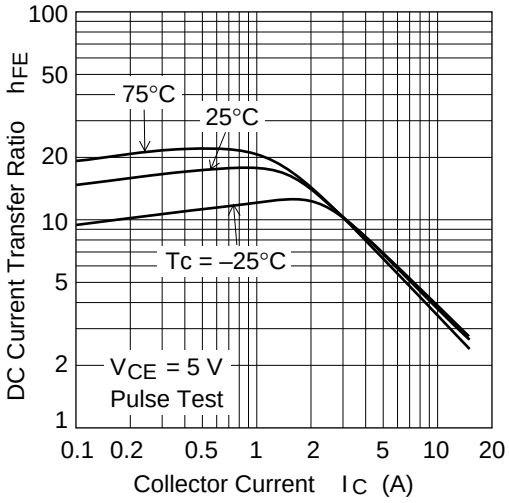

Collector Power Dissipation
vs. Case Temperature
Collector Power Dissipation Pc (W)
80
60
40
20
0
50
100
150
200
Case Temperature Tc (°C)


Areaof Safe Operaion
Collector Current Ic (A)
50
40
30
20
10
0
400
800
1200
1600
2000
Collector to Emitter Voltage VCE (V)
I B1 = –1 A
L = 180 µH
duty < 1 %
Tc = 25°C
(400 V, 30 A)
(600 V, 8 A)
(800 V, 4 A)
(1500 V, 0.5 mA)

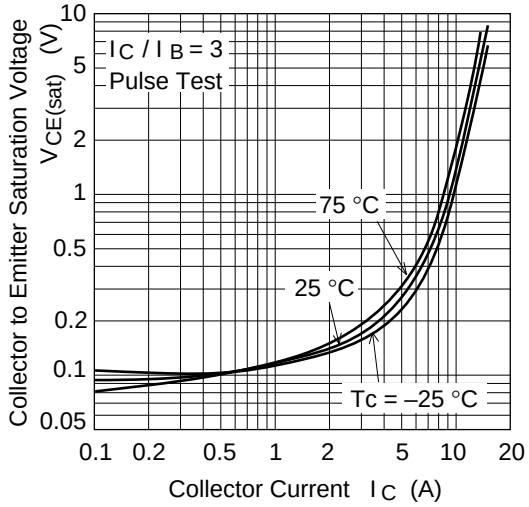
Typical Output Characteristics



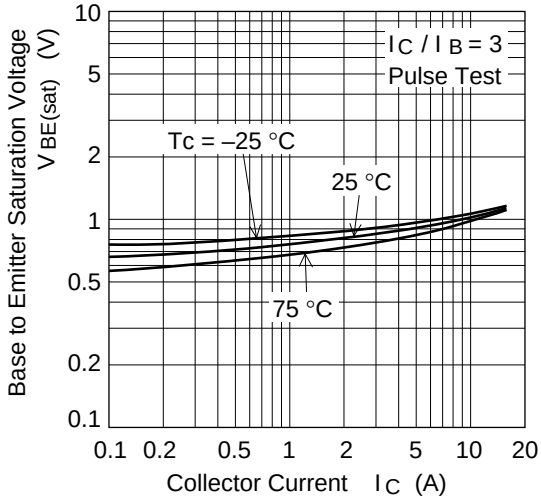

DC Current Transfer Ratio vs. Collector Current



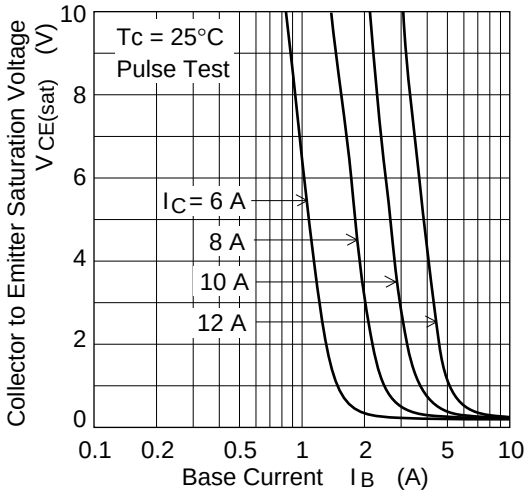
Collector to Emitter Saturation Voltage
vs. Collector Current



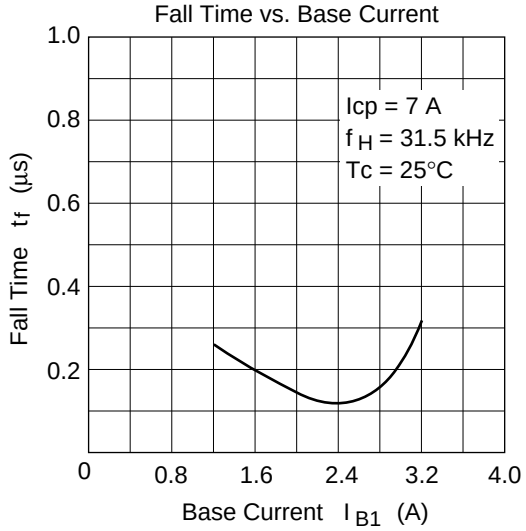

Base to Emitter Saturation Voltage
vs. Collector Current



Collector to Emitter Saturation Voltage vs. Base Current




Fall Time vs. Base Current



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