

# 2SC5270, 2SC5270A

Silicon NPN triple diffusion mesa type

For horizontal deflection output

## Features

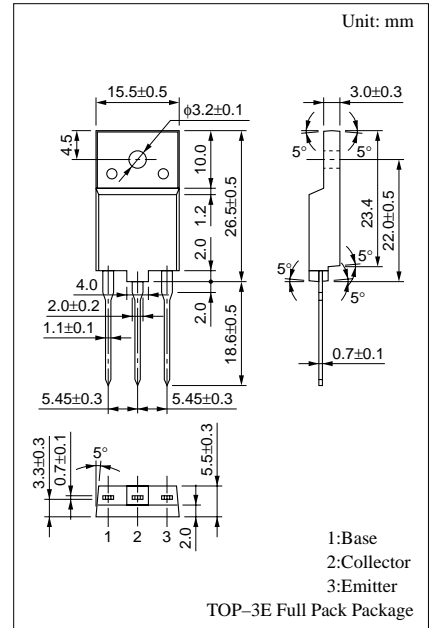
- High breakdown voltage, and high reliability through the use of a glass passivation layer
- High-speed switching
- Wide area of safe operation (ASO)

## Absolute Maximum Ratings ( $T_C=25^\circ\text{C}$ )

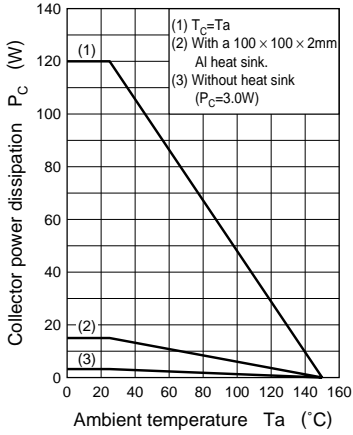
| Parameter                    | Symbol    | Rated       | Unit             |
|------------------------------|-----------|-------------|------------------|
| Collector to base voltage    | $V_{CBO}$ | 1500        | V                |
| base voltage                 |           | 1600        |                  |
| Collector to base voltage    | $V_{CES}$ | 1500        | V                |
| base voltage                 |           | 1600        |                  |
| Collector to emitter voltage | $V_{CEO}$ | 600         | V                |
| Emitter to base voltage      | $V_{EBO}$ | 5           | V                |
| Peak collector current       | $I_{CP}$  | 20          | A                |
| Collector current            | $I_C$     | 12          | A                |
| Base current                 | $I_B$     | 8           | A                |
| Collector power dissipation  | $P_C$     | 120         | W                |
|                              |           | 3           |                  |
| Junction temperature         | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature          | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

## Electrical Characteristics ( $T_C=25^\circ\text{C}$ )

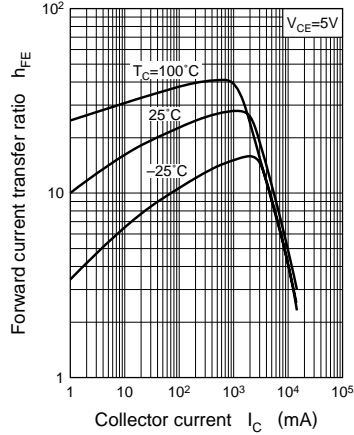
| Parameter                               | Symbol        | Conditions   | min                              | typ  | max | Unit          |
|---|---------------|--|----------------------------------|------|-----|---------------|
| Collector cutoff current                | $I_{CBO}$     | $V_{CB} = 1000\text{V}, I_E = 0$                             |                                  |      | 50  | $\mu\text{A}$ |
|   |               |  |                                  |      | 50  |               |
|   |               | $V_{CB} = 1500\text{V}, I_E = 0$                             |                                  |      | 1   | mA            |
|   |               |  | $V_{CB} = 1600\text{V}, I_E = 0$ |      |     |               |
| Emitter cutoff current                  | $I_{EBO}$     | $V_{EB} = 5\text{V}, I_C = 0$                                |                                  |      | 50  | $\mu\text{A}$ |
| Forward current transfer ratio          | $h_{FE}$      | $V_{CE} = 5\text{V}, I_C = 6\text{A}$                        | 5                                |      | 12  |               |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 6\text{A}, I_B = 1.5\text{A}$                         |                                  |      | 3   | V             |
| Base to emitter saturation voltage      | $V_{BE(sat)}$ | $I_C = 6\text{A}, I_B = 1.5\text{A}$                         |                                  |      | 1.5 | V             |
| Transition frequency                    | $f_T$         | $V_{CE} = 10\text{V}, I_C = 0.1\text{A}, f = 0.5\text{MHz}$  |                                  | 3    |     | MHz           |
| Storage time                            | $t_{stg}$     | $I_C = 6\text{A}, I_{B1} = 1.5\text{A}, I_{B2} = -3\text{A}$ |                                  | 1.5  | 2.5 | $\mu\text{s}$ |
| Fall time                               | $t_f$         |  |                                  | 0.12 | 0.2 | $\mu\text{s}$ |



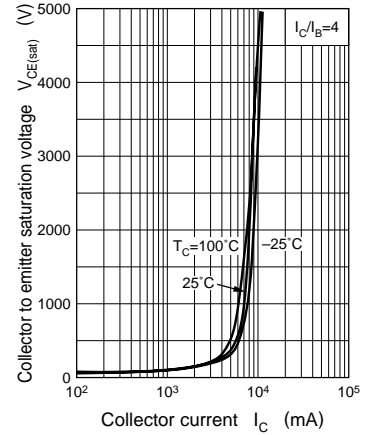
$P_C - T_a$



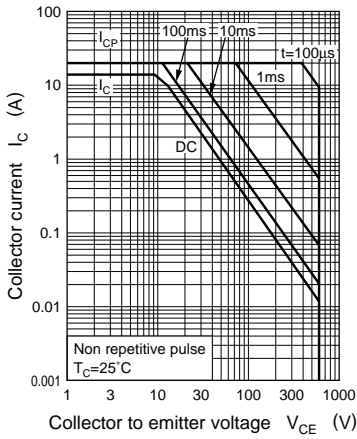
$h_{FE} - I_C$



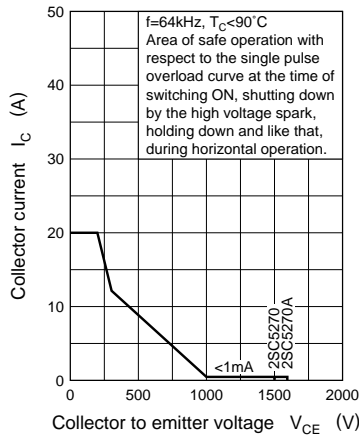
$V_{CE(sat)} - I_C$



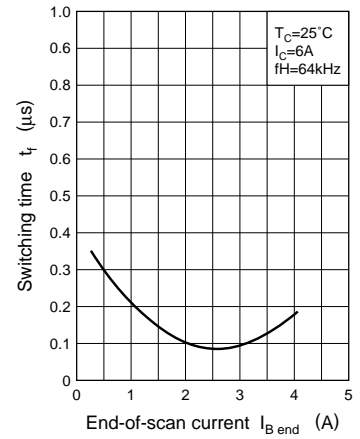
Area of safe operation (ASO)



Area of safe operation, horizontal operation ASO



$t_f - I_B$



$t_{stg} - I_B$

