

# 2SC4111

Silicon NPN triple diffusion planar type

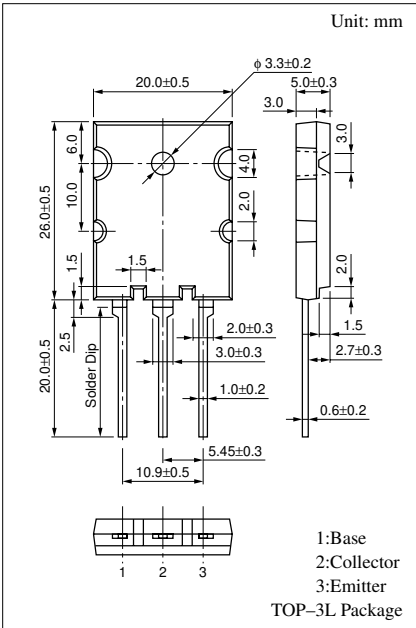
For horizontal deflection output

## ■ Features

- High-speed switching
- High collector to base voltage  $V_{CBO}$
- Wide area of safe operation (ASO)
- Satisfactory linearity of forward current transfer ratio  $h_{FE}$

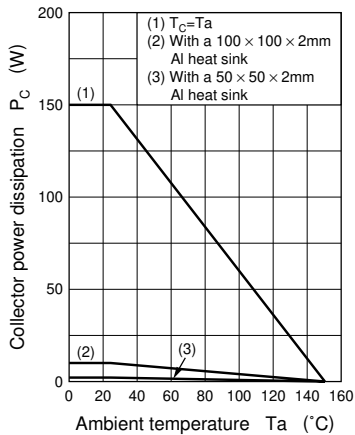
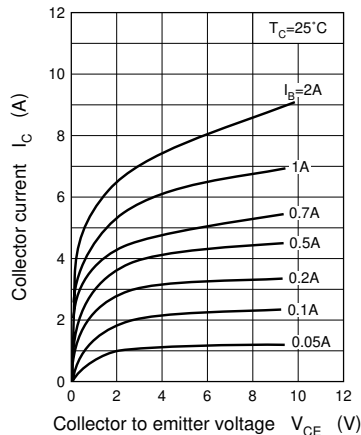
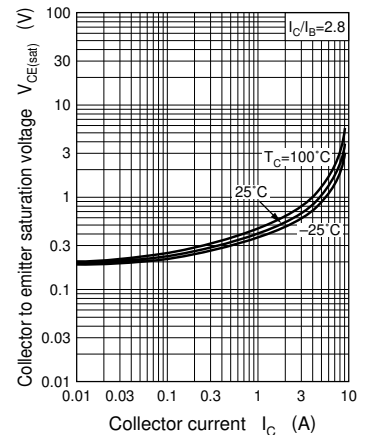
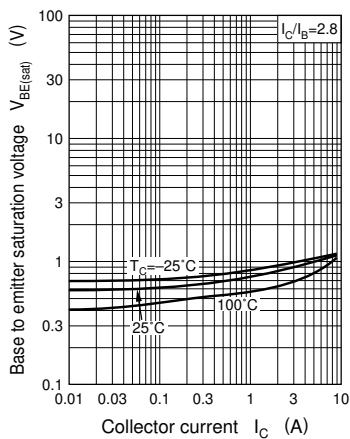
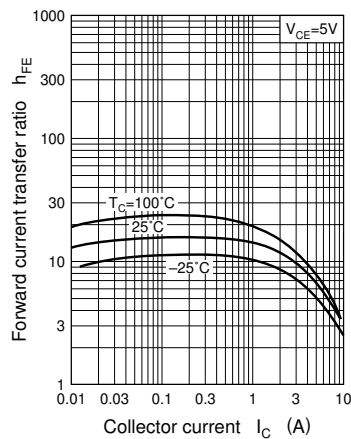
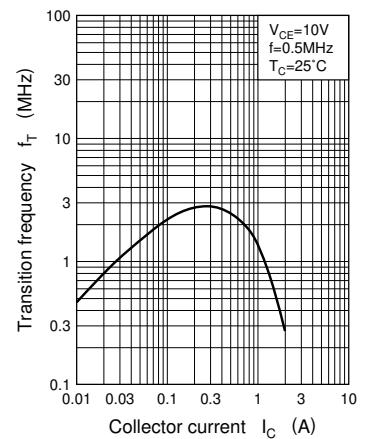
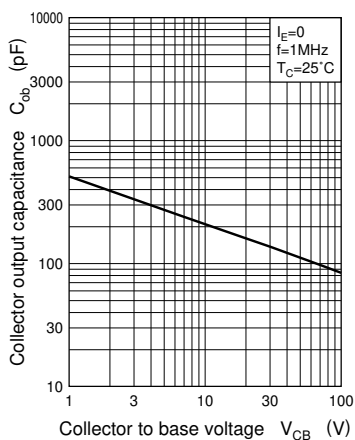
## ■ Absolute Maximum Ratings ( $T_C=25^\circ\text{C}$ )

| Parameter                    | Symbol    | Ratings     | Unit             |
|------------------------------|-----------|-------------|------------------|
| Collector to base voltage    | $V_{CBO}$ | 1500        | V                |
| Collector to emitter voltage | $V_{CES}$ | 1500        | V                |
|                              | $V_{CEO}$ | 700         | V                |
| Emitter to base voltage      | $V_{EBO}$ | 7           | V                |
| Peak collector current       | $I_{CP}$  | 22          | A                |
| Collector current            | $I_C$     | 10          | A                |
| Base current                 | $I_B$     | 3.5         | A                |
| Collector power dissipation  | $P_C$     | 150         | W                |
|                              |           | 3.5         |                  |
| Junction temperature         | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature          | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

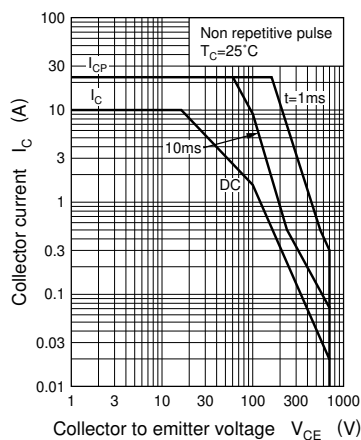


## ■ Electrical Characteristics ( $T_C=25^\circ\text{C}$ )

| Parameter                               | Symbol        | Conditions                                                | min | typ | max | Unit          |
|-----------------------------------------|---------------|-----------------------------------------------------------|-----|-----|-----|---------------|
| Collector cutoff current                | $I_{CBO}$     | $V_{CB} = 750\text{V}, I_E = 0$                           |     |     | 10  | $\mu\text{A}$ |
|                                         |               | $V_{CB} = 1500\text{V}, I_E = 0$                          |     |     | 1   | mA            |
| Emitter to base voltage                 | $V_{EBO}$     | $I_C = 1\text{mA}, I_B = 0$                               | 7   |     |     | V             |
| Forward current transfer ratio          | $h_{FE1}$     | $V_{CE} = 5\text{V}, I_C = 1\text{A}$                     | 5   |     |     |               |
|                                         | $h_{FE2}$     | $V_{CE} = 5\text{V}, I_C = 7\text{A}$                     | 3   |     | 8   |               |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 7\text{A}, I_B = 2.5\text{A}$                      |     |     | 5   | V             |
| Base to emitter saturation voltage      | $V_{BE(sat)}$ | $I_C = 7\text{A}, I_B = 2.5\text{A}$                      |     |     | 1.5 | V             |
| Transition frequency                    | $f_T$         | $V_{CE} = 10\text{V}, I_C = 1\text{A}, f = 0.5\text{MHz}$ |     | 2   |     | MHz           |
| Storage time                            | $t_{stg}$     | $I_C = 6\text{A}, L_{leak} = 5\mu\text{H}$                |     |     | 12  | $\mu\text{s}$ |
| Fall time                               | $t_f$         | $I_{B1} = 1.7\text{A}, I_{B2} = -1.7\text{A}$             |     |     | 0.6 | $\mu\text{s}$ |

$P_C - T_a$  $I_C - V_{CE}$  $V_{CE(sat)} - I_C$  $V_{BE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_C$  $C_{ob} - V_{CB}$ 

Area of safe operation (ASO)



Area of safe operation, horizontal operation ASO

