

# 2SB1054

## Silicon PNP triple diffusion planar type

For high power amplification  
Complementary to 2SD1485

### ■ Features

- Excellent collector current  $I_C$  characteristics of forward current transfer ratio  $h_{FE}$
- Wide safe operation area
- High transition frequency  $f_T$
- Full-pack package which can be installed to the heat sink with one screw

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

| Parameter                             | Symbol                   | Rating      | Unit             |
|---------------------------------------|--------------------------|-------------|------------------|
| Collector-base voltage (Emitter open) | $V_{CBO}$                | -100        | V                |
| Collector-emitter voltage (Base open) | $V_{CEO}$                | -100        | V                |
| Emitter-base voltage (Collector open) | $V_{EBO}$                | -5          | V                |
| Collector current                     | $I_C$                    | -5          | A                |
| Peak collector current                | $I_{CP}$                 | -8          | A                |
| Collector power dissipation           | $P_C$                    | 60          | W                |
|                                       | $T_a = 25^\circ\text{C}$ | 3           |                  |
| Junction temperature                  | $T_j$                    | 150         | $^\circ\text{C}$ |
| Storage temperature                   | $T_{stg}$                | -55 to +150 | $^\circ\text{C}$ |

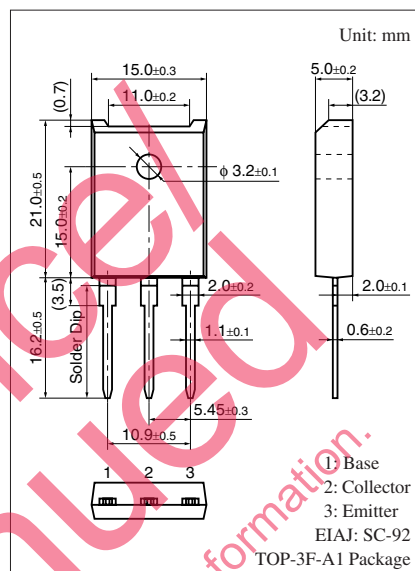
### ■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

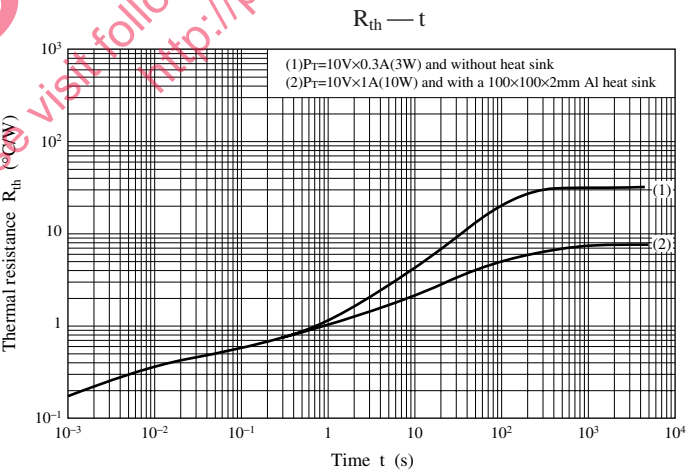
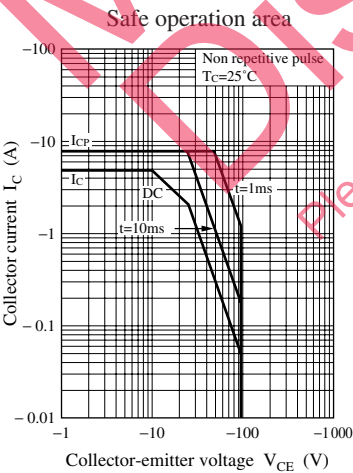
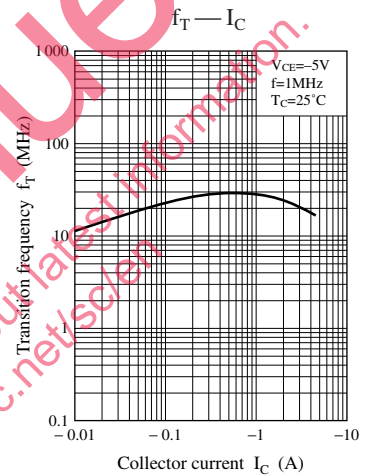
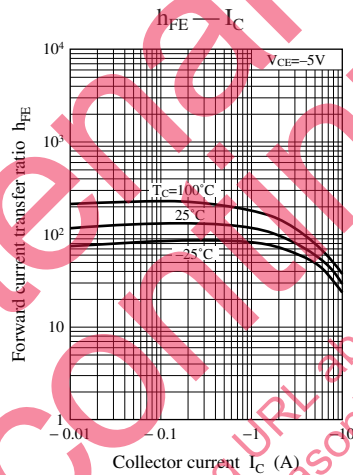
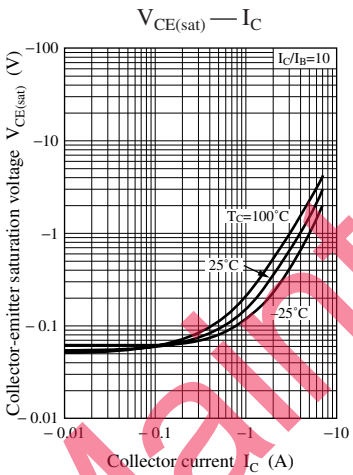
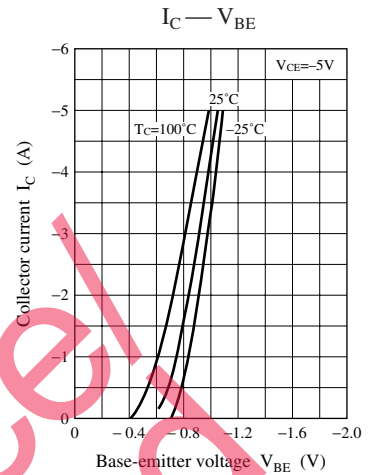
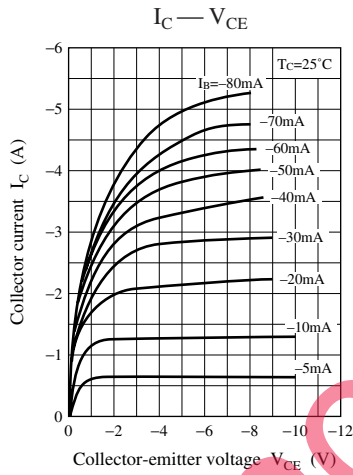
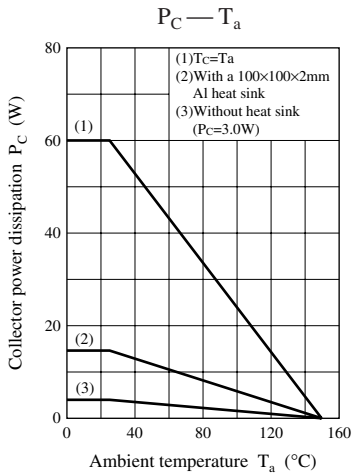
| Parameter  | Symbol        | Conditions  | Min | Typ | Max  | Unit          |
|--|---------------|---|-----|-----|------|---------------|
| Base-emitter voltage   | $V_{BE}$      | $V_{CE} = -5\text{ V}, I_C = -3\text{ A}$                     |     |     | -1.8 | V             |
| Collector-base cutoff current (Emitter open)                     | $I_{CBO}$     | $V_{CB} = -100\text{ V}, I_E = 0$                             |     |     | -50  | $\mu\text{A}$ |
| Emitter-base cutoff current (Collector open)                     | $I_{EBO}$     | $V_{EB} = -3\text{ V}, I_C = 0$                               |     |     | -50  | $\mu\text{A}$ |
| Forward current transfer ratio                                   | $h_{FE1}$     | $V_{CE} = -5\text{ V}, I_C = -20\text{ mA}$                   | 20  |     |      | —             |
|  | $h_{FE2}^*$   | $V_{CE} = -5\text{ V}, I_C = -1\text{ A}$                     | 40  |     | 200  |               |
|  | $h_{FE3}$     | $V_{CE} = -5\text{ V}, I_C = -3\text{ A}$                     | 20  |     |      |               |
| Collector-emitter saturation voltage                             | $V_{CE(sat)}$ | $I_C = -3\text{ A}, I_B = -0.3\text{ A}$                      |     |     | -2.0 | V             |
| Transition frequency   | $f_T$         | $V_{CE} = -5\text{ V}, I_C = -0.5\text{ A}, f = 1\text{ MHz}$ |     | 20  |      | MHz           |
| Collector output capacitance (Common base, input open circuited) | $C_{ob}$      | $V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$            |     | 170 |      | pF            |

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*: Rank classification

| Rank      | R        | Q         | P          |
|-----------|----------|-----------|------------|
| $h_{FE2}$ | 40 to 80 | 60 to 120 | 100 to 200 |





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