

# 2SD2549

## Silicon NPN triple diffusion planar type

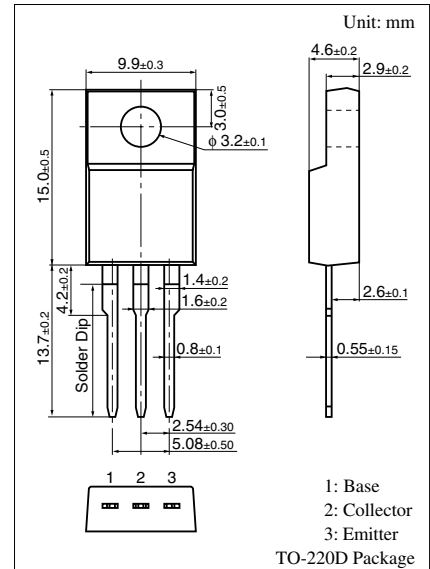
For power amplification

### ■ Features

- High forward current transfer ratio  $h_{FE}$  which has satisfactory linearity
- Low collector to emitter saturation voltage  $V_{CE(sat)}$
- 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 to base voltage    | $V_{CBO}$ | 80                       | V                |
| Collector to emitter voltage | $V_{CEO}$ | 80                       | V                |
| Emitter to base voltage      | $V_{EBO}$ | 6                        | V                |
| Peak collector current       | $I_{CP}$  | 5                        | A                |
| Collector current            | $I_C$     | 3                        | A                |
| Collector power dissipation  | $P_C$     | $T_C = 25^\circ\text{C}$ | 20               |
|                              |           | $T_a = 25^\circ\text{C}$ | 2                |
| Junction temperature         | $T_j$     | 150                      | $^\circ\text{C}$ |
| Storage temperature          | $T_{stg}$ | -55 to +150              | $^\circ\text{C}$ |

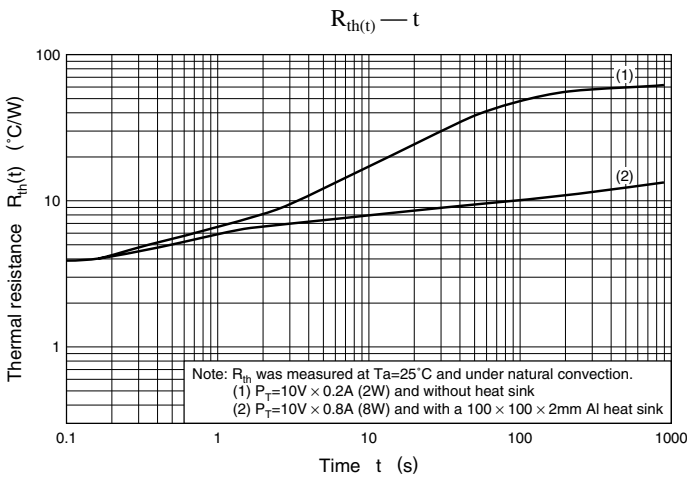
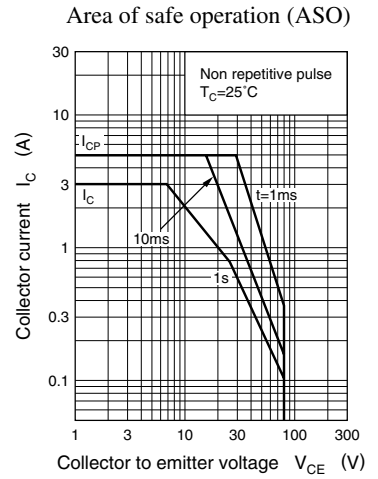
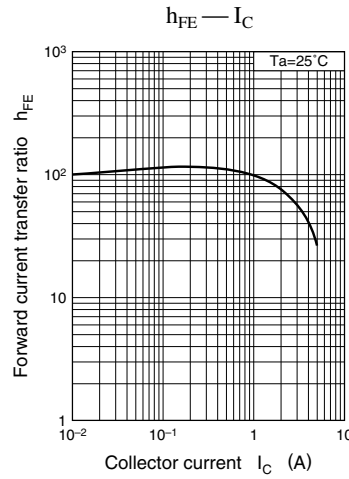
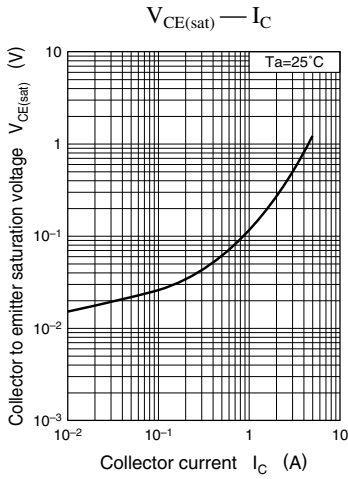
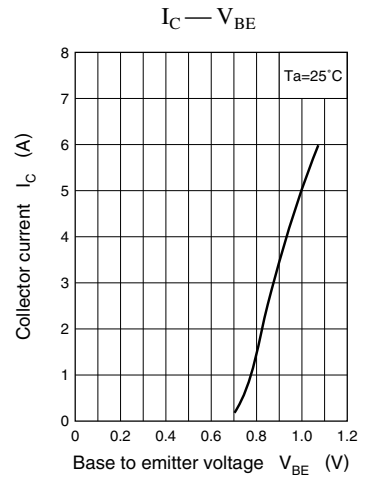
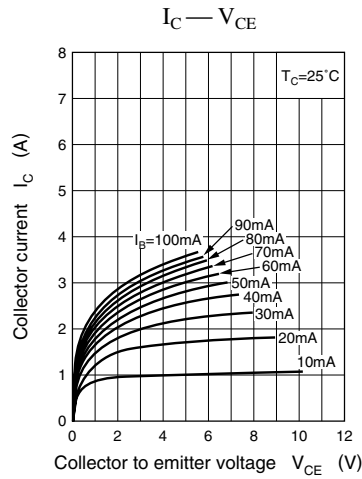
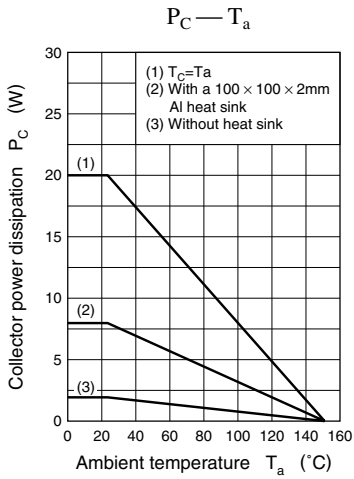


### ■ Electrical Characteristics $T_C = 25^\circ\text{C}$

| Parameter                               | Symbol        | Conditions  | Min | Typ | Max | Unit          |
|---|---------------|---|-----|-----|-----|---------------|
| Collector cutoff current                | $I_{CES}$     | $V_{CE} = 70\text{ V}, V_{BE} = 0$  |     |     | 100 | $\mu\text{A}$ |
|   | $I_{CEO}$     | $V_{CE} = 70\text{ V}, I_B = 0$   |     |     | 100 | $\mu\text{A}$ |
| Emitter cutoff current                  | $I_{EBO}$     | $V_{EB} = 6\text{ V}, I_C = 0$  |     |     | 1   | mA            |
| Collector to emitter voltage            | $V_{CEO}$     | $I_C = 30\text{ mA}, I_B = 0$   | 80  |     |     | V             |
| Forward current transfer ratio          | $h_{FE1}^*$   | $V_{CE} = 4\text{ V}, I_C = 1\text{ A}$   | 70  |     | 250 |               |
|   | $h_{FE2}$     | $V_{CE} = 4\text{ V}, I_C = 3\text{ A}$   | 10  |     |     |               |
| Base to emitter voltage                 | $V_{BE}$      | $V_{CE} = 4\text{ V}, I_C = 3\text{ A}$   |     |     | 1.8 | V             |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 3\text{ A}, I_B = 0.375\text{ A}$  |     |     | 0.7 | V             |
| Transition frequency                    | $f_T$         | $V_{CE} = 10\text{ V}, I_C = 0.5\text{ A}, f = 10\text{ MHz}$                           |     | 30  |     | MHz           |
| Turn-on time                            | $t_{on}$      | $I_C = 1\text{ A}, I_{B1} = 0.1\text{ A}, I_{B2} = -0.1\text{ A}, V_{CC} = 50\text{ V}$ |     |     | 0.5 | $\mu\text{s}$ |
| Storage time                            | $t_{stg}$     |   |     |     | 4.5 | $\mu\text{s}$ |
| Fall time                               | $t_f$         |   |     |     | 0.5 | $\mu\text{s}$ |

Note) \*: Rank classification

| Rank      | Q         | P          |
|-----------|-----------|------------|
| $h_{FE1}$ | 70 to 150 | 120 to 250 |



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