

2SB1179, 2SB1179A

Silicon PNP epitaxial planar type darlington

For power amplification and switching

Complementary to 2SD1749, 2SD1749A

■ Features

- High forward current transfer ratio h_{FE} which has satisfactory linearity
- High-speed switching
- I type package enabling direct soldering of the radiating fin to the printed circuit board, etc. of small electronic equipment

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

| Parameter | Symbol | Rating | Unit |
|--|-----------|-------------|------------------|
| Collector-base voltage (Emitter open) | V_{CBO} | -60 | V |
| | | -80 | |
| Collector-emitter voltage (Base open) | V_{CEO} | -60 | V |
| | | -80 | |
| Emitter-base voltage (Collector open) | V_{EBO} | -5 | V |
| Collector current | I_C | -4 | A |
| Peak collector current | I_{CP} | -8 | A |
| Collector power dissipation | P_C | 15 | W |
| | | 1.3 | |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

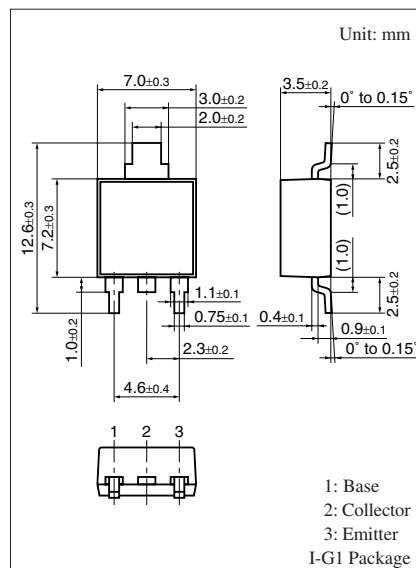
■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---------------|--|------|-----|-------|---------------|
| Collector-emitter voltage (Base open) | V_{CEO} | $I_C = -30\text{ mA}, I_B = 0$ | -60 | | | V |
| | | | -80 | | | |
| Base-emitter voltage | V_{BE} | $V_{CE} = -3\text{ V}, I_C = -3\text{ A}$ | | | -2.5 | V |
| Collector-base cutoff current (Emitter open) | I_{CBO} | $V_{CB} = -60\text{ V}, I_E = 0$ | | | -200 | μA |
| | | $V_{CB} = -80\text{ V}, I_E = 0$ | | | -200 | |
| Collector-emitter cutoff current (Base open) | I_{CEO} | $V_{CE} = -40\text{ V}, I_B = 0$ | | | -500 | μA |
| | | $V_{CE} = -40\text{ V}, I_B = 0$ | | | -500 | |
| Emitter-base cutoff current (Collector open) | I_{EBO} | $V_{EB} = -5\text{ V}, I_C = 0$ | | | -2 | mA |
| Forward current transfer ratio | h_{FE1} | $V_{CE} = -3\text{ V}, I_C = -0.5\text{ A}$ | 1000 | | | — |
| | h_{FE2}^* | $V_{CE} = -3\text{ V}, I_C = -3\text{ A}$ | 2000 | | 10000 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -3\text{ A}, I_B = -12\text{ mA}$ | | | -2 | V |
| | | $I_C = -5\text{ A}, I_B = -20\text{ mA}$ | | | -4 | |
| Transition frequency | f_T | $V_{CE} = -10\text{ V}, I_C = -0.5\text{ A}, f = 1\text{ MHz}$ | | 20 | | MHz |
| Turn-on time | t_{on} | $I_C = -3\text{ A}, I_{B1} = -12\text{ mA}, I_{B2} = 12\text{ mA}$ | | 0.3 | | μs |
| Storage time | t_{stg} | $V_{CC} = -50\text{ V}$ | | 2.0 | | μs |
| Fall time | t_f | | | 0.5 | | μs |

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

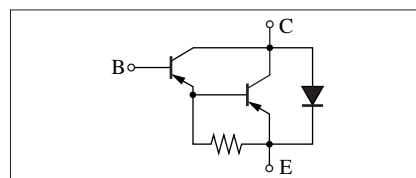
2. *: Rank classification

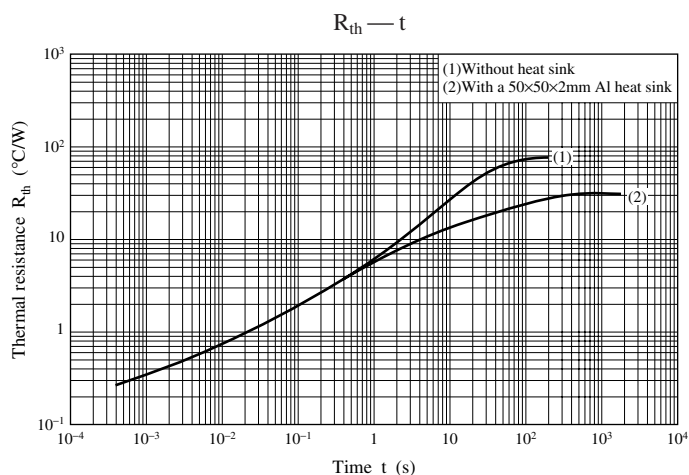
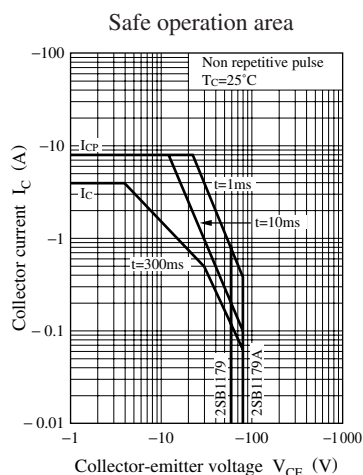
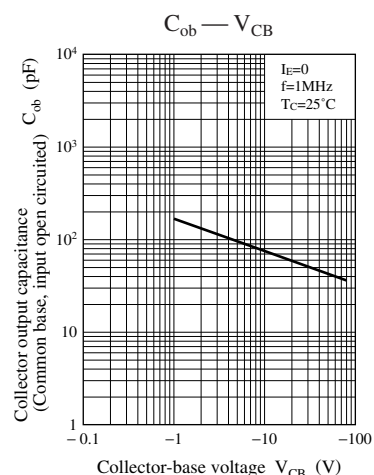
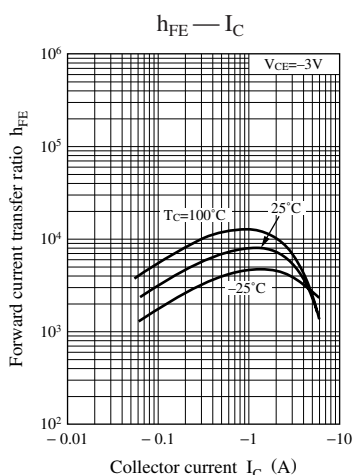
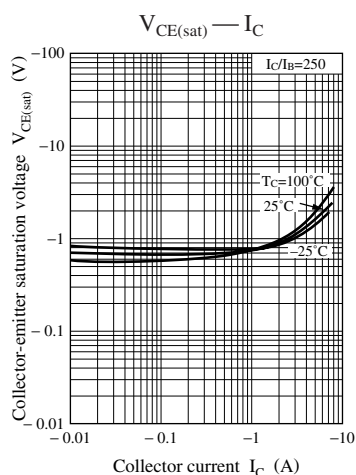
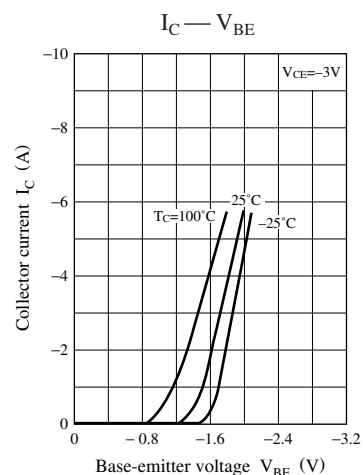
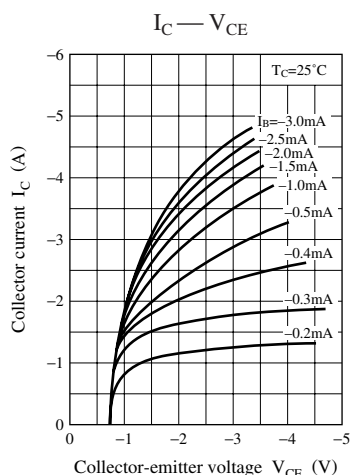
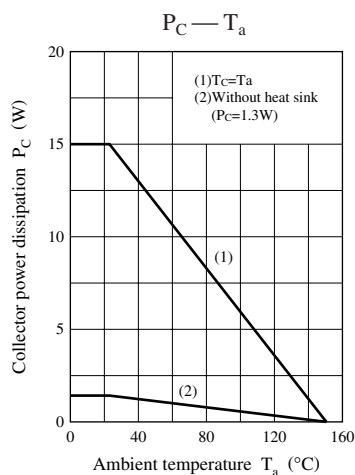
| Rank | Q | P |
|-----------|--------------|---------------|
| h_{FE2} | 2000 to 5000 | 4000 to 10000 |



Note) Self-supported type package is also prepared.

Internal Connection





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