

# 2SB1255

## Silicon PNP epitaxial planar type darlington

For power amplification

Complementary to 2SD1895

### ■ Features

- Optimum for 90 W HiFi output
- High forward current transfer ratio  $h_{FE}$
- Low collector-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-base voltage (Emitter open) | $V_{CBO}$ | -160                     | V                |
| Collector-emitter voltage (Base open) | $V_{CEO}$ | -140                     | V                |
| Emitter-base voltage (Collector open) | $V_{EBO}$ | -5                       | V                |
| Collector current                     | $I_C$     | -8                       | A                |
| Peak collector current                | $I_{CP}$  | -15                      | A                |
| Collector power dissipation           | $P_C$     | 100                      | W                |
|                                       |           | $T_a = 25^\circ\text{C}$ |                  |
| Junction temperature                  | $T_j$     | 150                      | $^\circ\text{C}$ |
| Storage temperature                   | $T_{stg}$ | -55 to +150              | $^\circ\text{C}$ |

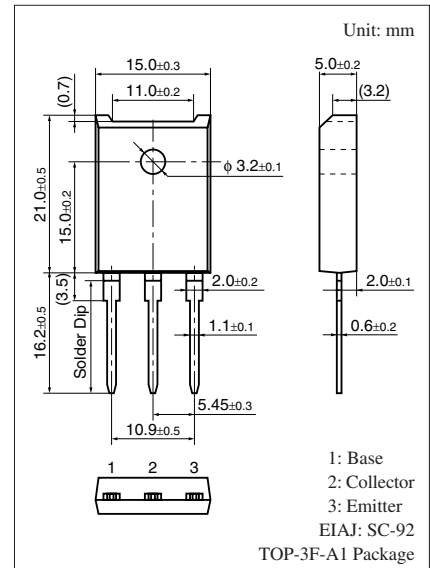
### ■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter                                    | Symbol        | Conditions  | Min  | Typ | Max   | Unit          |
|--|---------------|---|------|-----|-------|---------------|
| Collector-emitter voltage (Base open)        | $V_{CEO}$     | $I_C = -30 \text{ mA}, I_B = 0$                                     | -140 |     |       | V             |
| Collector-base cutoff current (Emitter open) | $I_{CBO}$     | $V_{CB} = -160 \text{ V}, I_E = 0$                                  |      |     | -100  | $\mu\text{A}$ |
| Collector-emitter cutoff current (Base open) | $I_{CEO}$     | $V_{CE} = -140 \text{ V}, I_B = 0$                                  |      |     | -100  | $\mu\text{A}$ |
| Emitter-base cutoff current (Collector open) | $I_{EBO}$     | $V_{EB} = -5 \text{ V}, I_C = 0$                                    |      |     | -100  | $\mu\text{A}$ |
| Forward current transfer ratio               | $h_{FE1}$     | $V_{CE} = -5 \text{ V}, I_C = -1 \text{ A}$                         | 2000 |     |       | —             |
|  | $h_{FE2}^*$   | $V_{CE} = -5 \text{ V}, I_C = -7 \text{ A}$                         | 5000 |     | 30000 |               |
| Collector-emitter saturation voltage         | $V_{CE(sat)}$ | $I_C = -7 \text{ A}, I_B = -7 \text{ mA}$                           |      |     | -2.5  | V             |
| Base-emitter saturation voltage              | $V_{BE(sat)}$ | $I_C = -7 \text{ A}, I_B = -7 \text{ mA}$                           |      |     | -3.0  | V             |
| Transition frequency                         | $f_T$         | $V_{CE} = -10 \text{ V}, I_C = -0.5 \text{ A}, f = 1 \text{ MHz}$   |      | 20  |       | MHz           |
| Turn-on time                                 | $t_{on}$      | $I_C = -7 \text{ A}, I_{B1} = -7 \text{ mA}, I_{B2} = 7 \text{ mA}$ |      | 1.0 |       | $\mu\text{s}$ |
| Storage time                                 | $t_{stg}$     | $V_{CC} = -50 \text{ V}$  |      | 1.5 |       | $\mu\text{s}$ |
| Fall time                                    | $t_f$         |   |      | 1.2 |       | $\mu\text{s}$ |

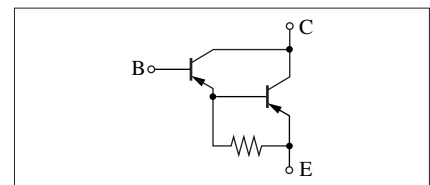
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

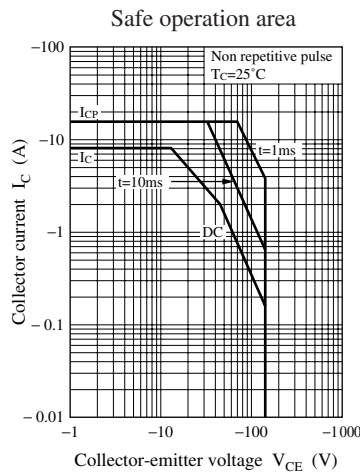
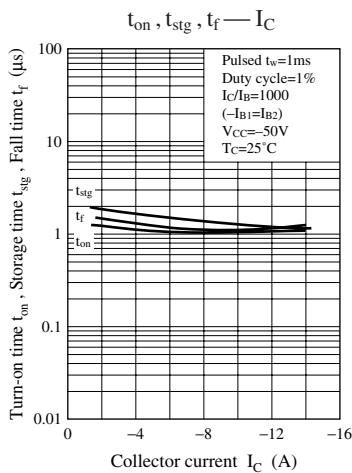
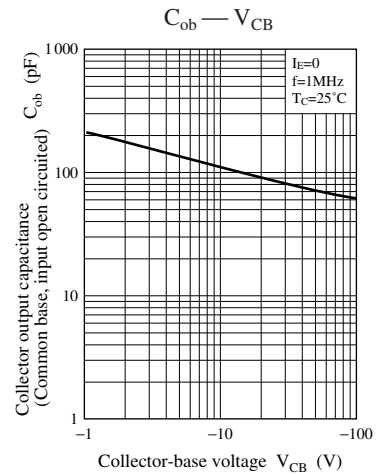
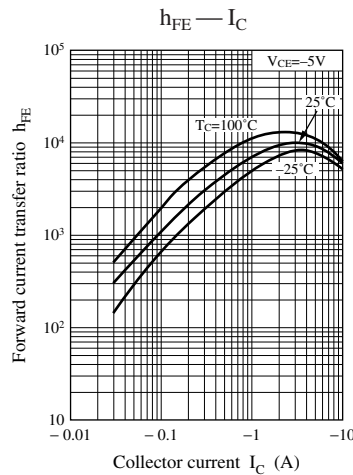
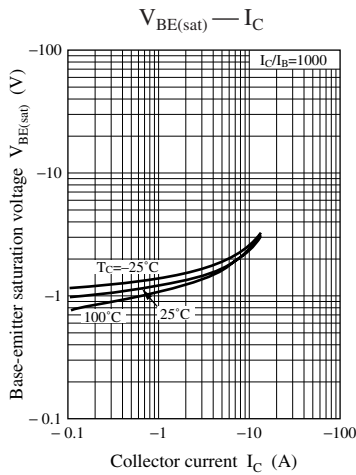
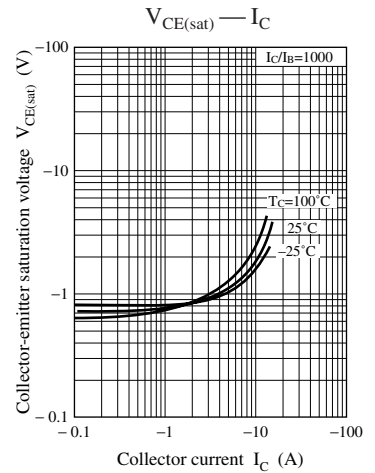
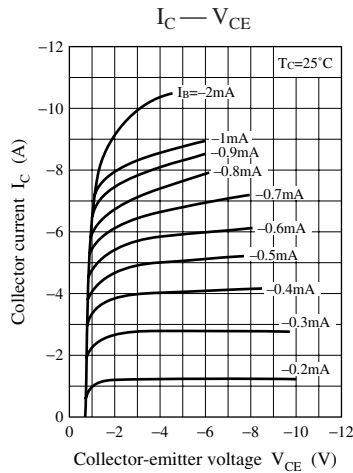
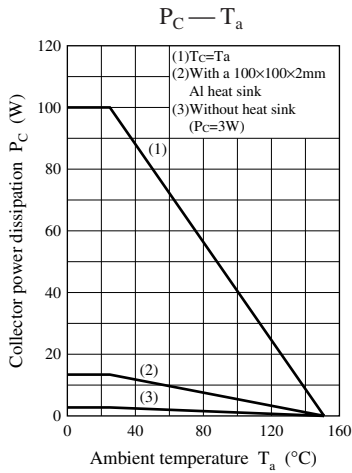
2. \*: Rank classification

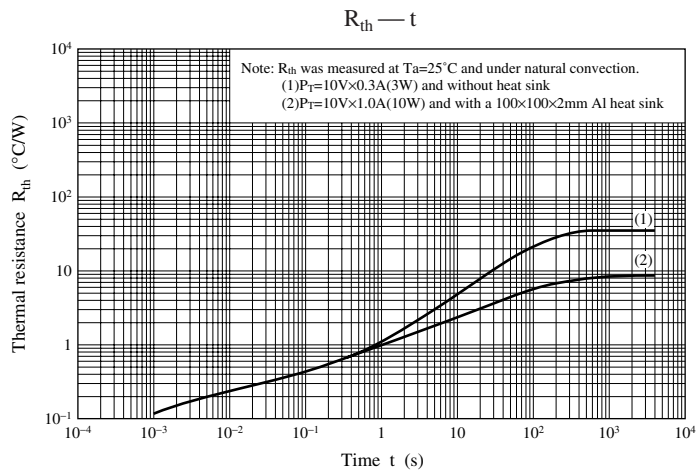
| Rank      | Q               | S               | P               |
|-----------|-----------------|-----------------|-----------------|
| $h_{FE2}$ | 5 000 to 15 000 | 7 000 to 21 000 | 8 000 to 30 000 |



### Internal Connection







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