

2SD1478A

Silicon NPN epitaxial planar type darlington

For low frequency amplification

■ Features

- Forward current transfer ratio h_{FE} is designed high, which is appropriate to the driver circuit of motors and printer hammer.
- A shunt resistor is omitted from the driver.

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

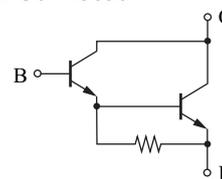
| Parameter | Symbol | Rating | Unit |
|---------------------------------------|-----------|-------------|------------------|
| Collector-base voltage (Emitter open) | V_{CBO} | 60 | V |
| Collector-emitter voltage (Base open) | V_{CEO} | 50 | V |
| Emitter-base voltage (Collector open) | V_{EBO} | 5 | V |
| Collector current | I_C | 500 | mA |
| Peak collector current | I_{CP} | 750 | mA |
| Collector power dissipation | P_C | 200 | mW |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

■ Package

- Code
Mini3-G1
- Pin Name
1: Base
2: Emitter
3: Collector

■ Marking Symbol: 2O

■ Internal Connection



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

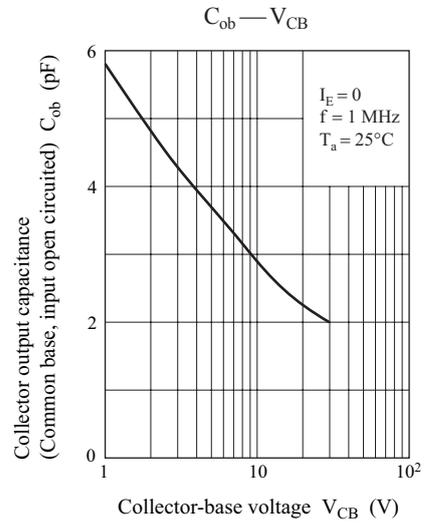
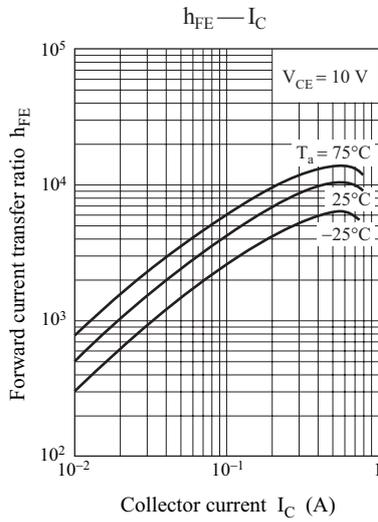
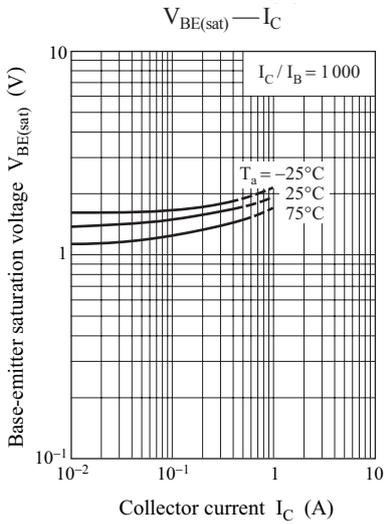
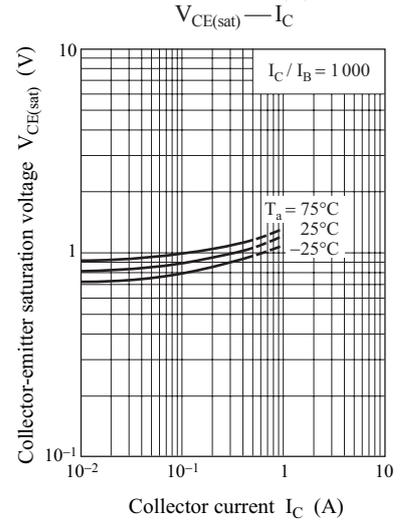
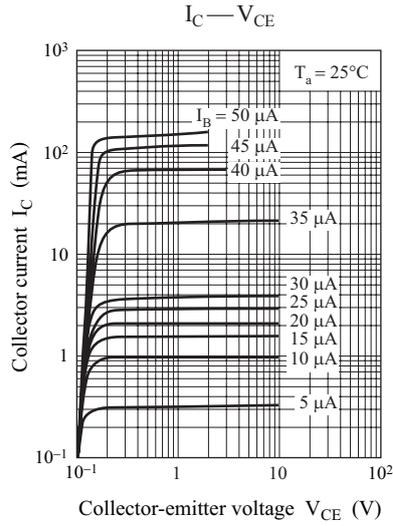
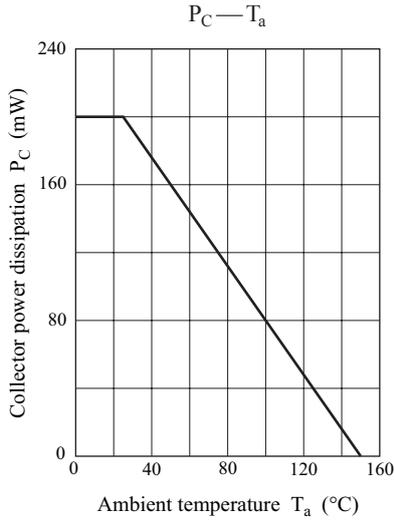
| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|--|---------------|--|------|-----|-------|------|
| Collector-base voltage (Emitter open) | V_{CBO} | $I_C = 100 \mu\text{A}, I_E = 0$ | 60 | | | V |
| Collector-emitter voltage (Base open) | V_{CEO} | $I_C = 1 \text{ mA}, I_B = 0$ | 50 | | | V |
| Emitter-base voltage (Collector open) | V_{EBO} | $I_E = 100 \mu\text{A}, I_C = 0$ | 5 | | | V |
| Collector-base cutoff current (Emitter open) | I_{CBO} | $V_{CB} = 25 \text{ V}, I_E = 0$ | | | 100 | nA |
| Emitter-base cutoff current (Collector open) | I_{EBO} | $V_{EB} = 4 \text{ V}, I_C = 0$ | | | 100 | nA |
| Forward current transfer ratio *1, *2 | h_{FE} | $V_{CE} = 10 \text{ V}, I_C = 500 \text{ mA}$ | 4000 | | 20000 | — |
| Collector-emitter saturation voltage *1 | $V_{CE(sat)}$ | $I_C = 500 \text{ mA}, I_B = 0.5 \text{ mA}$ | | | 2.5 | V |
| Base-emitter saturation voltage *1 | $V_{BE(sat)}$ | $I_C = 500 \text{ mA}, I_B = 0.5 \text{ mA}$ | | | 3.0 | V |
| Transition frequency | f_T | $V_{CB} = 10 \text{ V}, I_E = -50 \text{ mA}, f = 200 \text{ MHz}$ | | 200 | | MHz |

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

2. *1: Pulse measurement

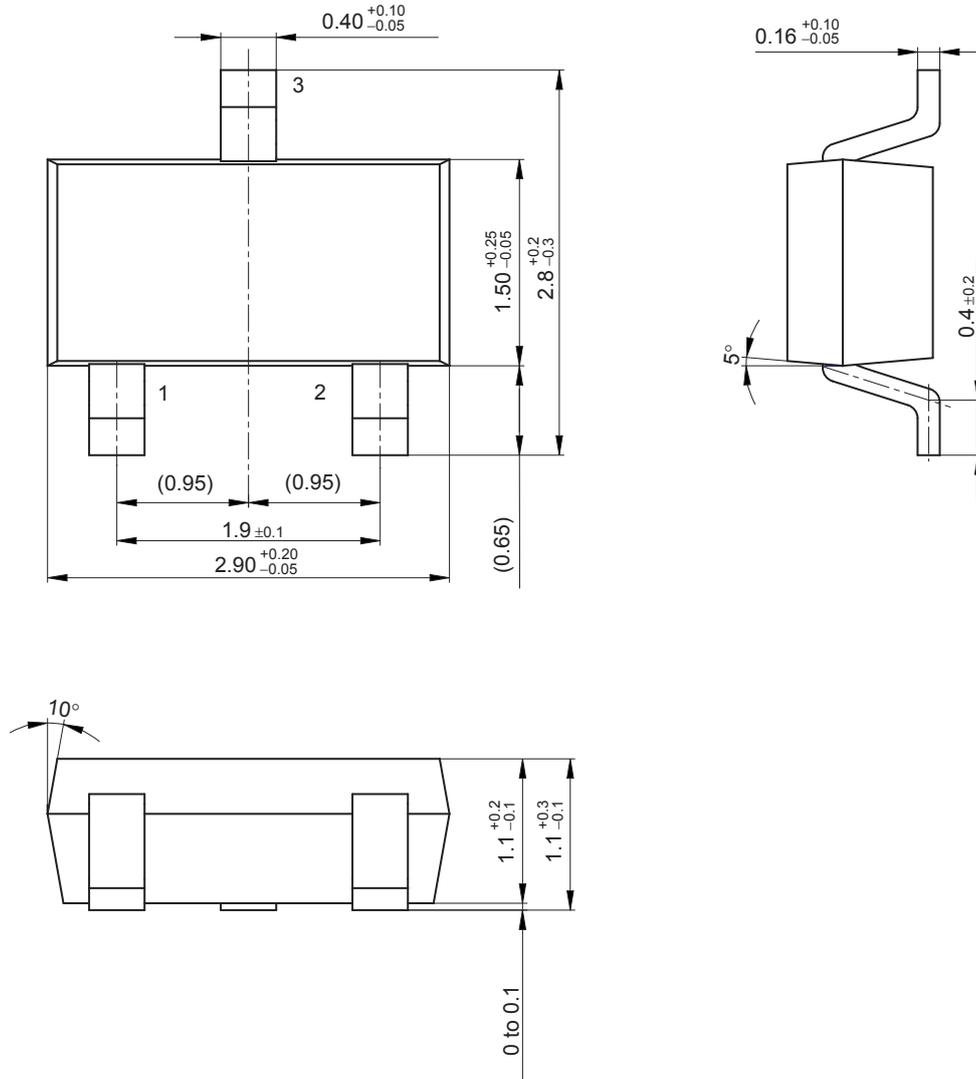
*2: Rank classification

| Rank | Q | R |
|----------|---------------|---------------|
| h_{FE} | 4000 to 10000 | 8000 to 20000 |



Mini3-G1

Unit: mm



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