

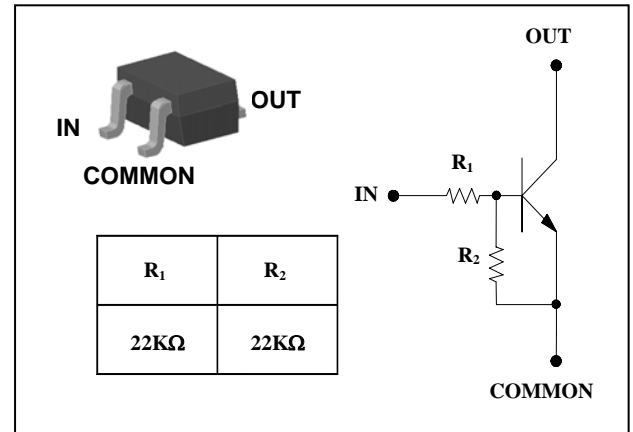
## Descriptions

- Switching application
- Interface circuit and driver circuit application

## Features

- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process
- High packing density

## PIN Connection



## Ordering Information

| Type NO. | Marking     | Package Code |
|----------|-------------|--------------|
| SRC1203U | R3 □<br>① ② | SOT-323      |

①Device Code ②Year&Week Code

## Absolute Maximum Ratings

(Ta=25°C)

| Characteristic            | Symbol           | Rating    | Unit |
|---------------------------|------------------|-----------|------|
| Output voltage            | V <sub>O</sub>   | 50        | V    |
| Input voltage             | V <sub>I</sub>   | 40, -10   | V    |
| Output current            | I <sub>O</sub>   | 100       | mA   |
| Power dissipation         | P <sub>D</sub>   | 200       | mW   |
| Junction temperature      | T <sub>J</sub>   | 150       | °C   |
| Storage temperature range | T <sub>stg</sub> | -55 ~ 150 | °C   |

## Electrical Characteristics

(Ta=25°C)

| Characteristic                  | Symbol              | Test Condition                                      | Min. | Typ. | Max. | Unit |
|---------------------------------|---------------------|---|------|------|------|------|
| Output cut-off current          | I <sub>O(OFF)</sub> | V <sub>O</sub> = 50V, V <sub>I</sub> = 0            | -    | -    | 500  | nA   |
| DC current gain                 | G <sub>I</sub>      | V <sub>O</sub> = 5V, I <sub>O</sub> = 10mA          | 70   | 120  | -    | -    |
| Output voltage                  | V <sub>O(ON)</sub>  | I <sub>O</sub> = 10mA, I <sub>I</sub> = 0.5mA       | -    | 0.1  | 0.3  | V    |
| Input voltage (ON)              | V <sub>I(ON)</sub>  | V <sub>O</sub> = 0.2V, I <sub>O</sub> = 5mA         | -    | 2.1  | 3.0  | V    |
| Input voltage (OFF)             | V <sub>I(OFF)</sub> | V <sub>O</sub> = 5V, I <sub>O</sub> = 0.1mA         | 1.0  | 1.2  | -    | V    |
| Transition frequency            | f <sub>T</sub> *    | V <sub>O</sub> = 10V, I <sub>O</sub> = 5mA, f= 1MHz | -    | 200  | -    | MHz  |
| Input current                   | I <sub>I</sub>      | V <sub>I</sub> = 5V, I <sub>O</sub> = 0             | -    | -    | 0.36 | mA   |
| Input resistor (Input to base)  | R <sub>1</sub>      | -   | 15.4 | 22   | 28.6 | KΩ   |
| Input resistor (Base to common) | R <sub>2</sub>      | -   | 15.4 | 22   | 28.6 | KΩ   |

\* : Characteristic of transistor only

Electrical Characteristic Curves

Fig. 1  $P_D - T_a$

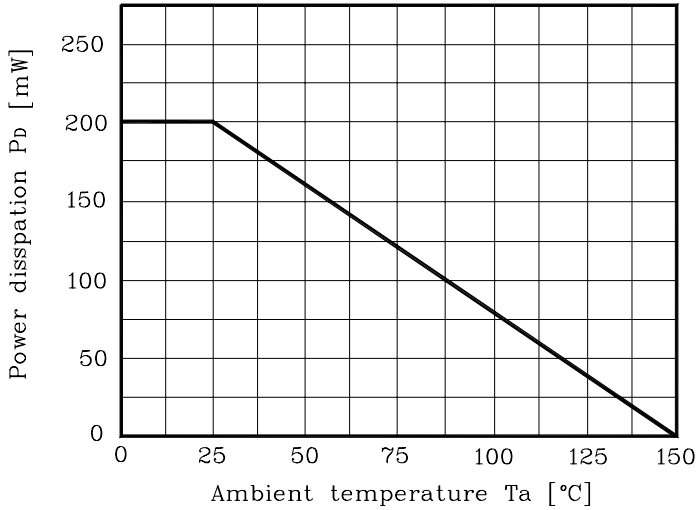


Fig. 2  $I_O - V_{I(ON)}$

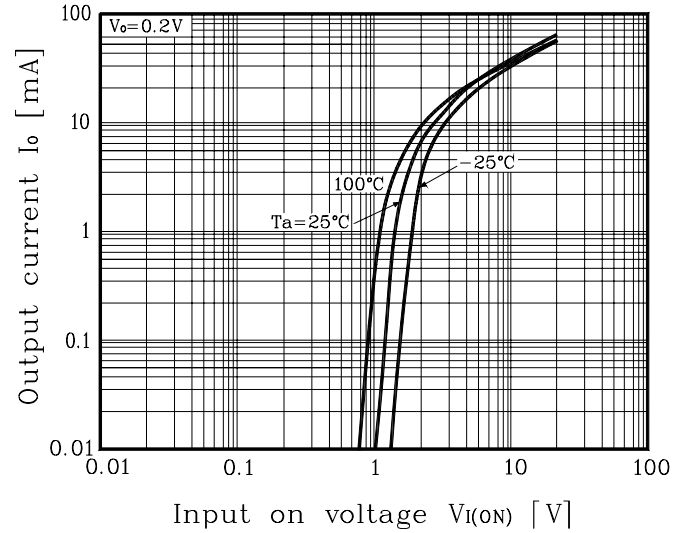


Fig. 3  $I_O - V_{I(OFF)}$

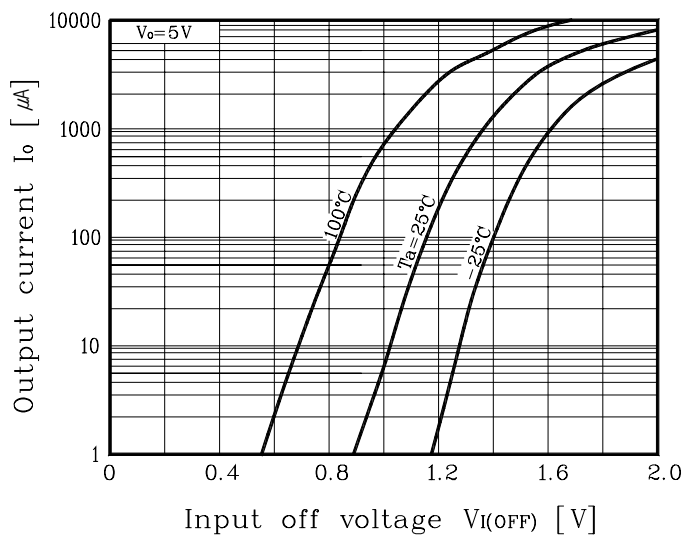
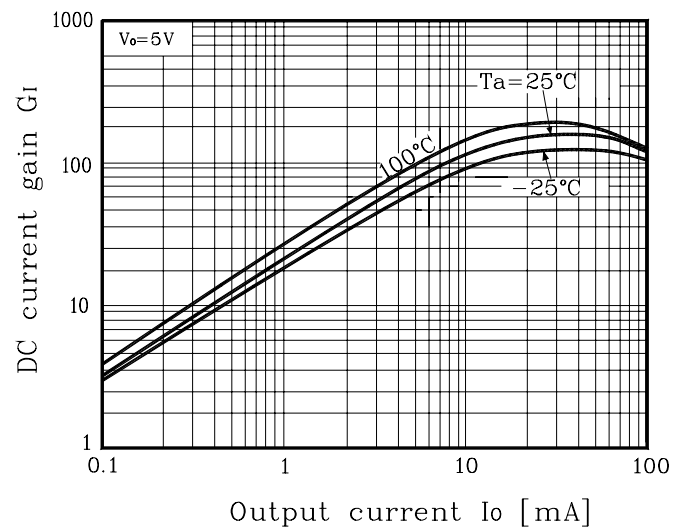
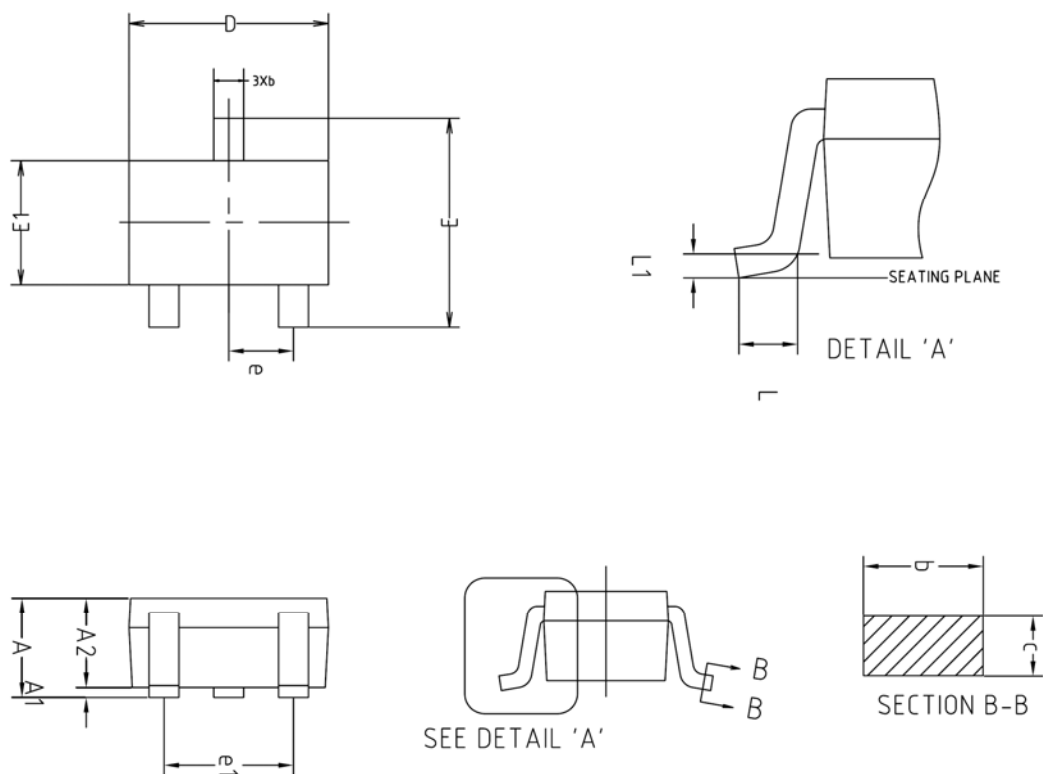


Fig. 4  $G_I - I_O$

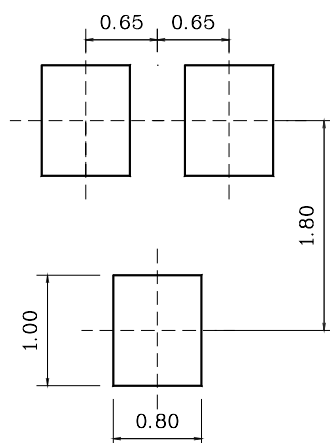


## Outline Dimension



| SYMBOL | MILLIMETERS |         |         | NOTE |
|--------|-------------|---------|---------|------|
|        | MINIMUM     | NOMINAL | MAXIMUM |      |
| A      | 0.90        | -       | 1.25    |      |
| A1     | 0.00        | -       | 0.10    |      |
| A2     | 0.85        | 0.90    | 0.95    |      |
| b      | 0.30        | -       | 0.40    |      |
| c      | 0.10        | -       | 0.25    |      |
| D      | 1.90        | 2.00    | 2.10    |      |
| E      | 1.95        | 2.10    | 2.25    |      |
| E1     | 1.15        | 1.25    | 1.35    |      |
| e      | 0.65BSC     |         |         |      |
| e1     | 1.20        | -       | 1.40    |      |
| L      | 0.10        | -       | -       |      |
| L1     | 0.12BSC     |         |         |      |

※Recommend PCB solder land [Unit: mm]



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