

## Descriptions

- Switching application
- Interface circuit and driver circuit application

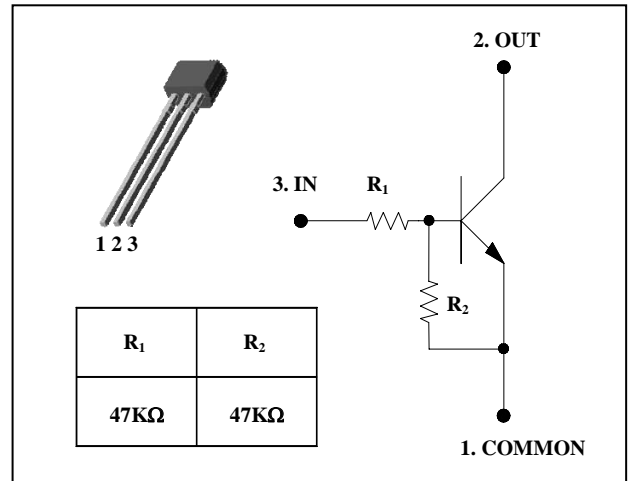
## Features

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

## Ordering Information

| Type NO. | Marking | Package Code |
|----------|---------|--------------|
| SRC1204M | 1204    | TO-92M       |

## PIN Connection



## 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>   | 400       | mW   |
| Junction temperature      | T <sub>J</sub>   | 150       | °C   |
| Storage temperature range | T <sub>stg</sub> | -55 ~ 150 | °C   |

## Electrical Characteristics

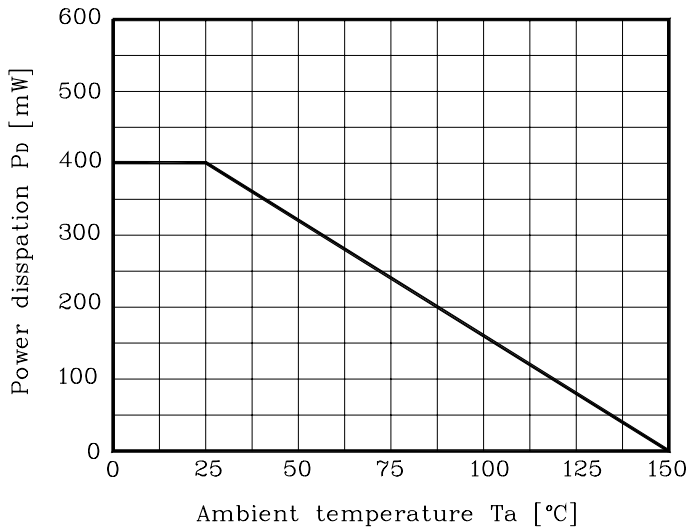
(Ta=25°C)

| 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          | 80   | 200  | -    | -    |
| 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         | -    | 2.8  | 5.0  | 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> <sup>*</sup> | 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             | -    | -    | 0.18 | mA   |
| Input resistor (Input to base)  | R <sub>1</sub>              | -   | 33   | 47   | 61   | KΩ   |
| Input resistor (Base to common) | R <sub>2</sub>              | -   | 33   | 47   | 61   | KΩ   |

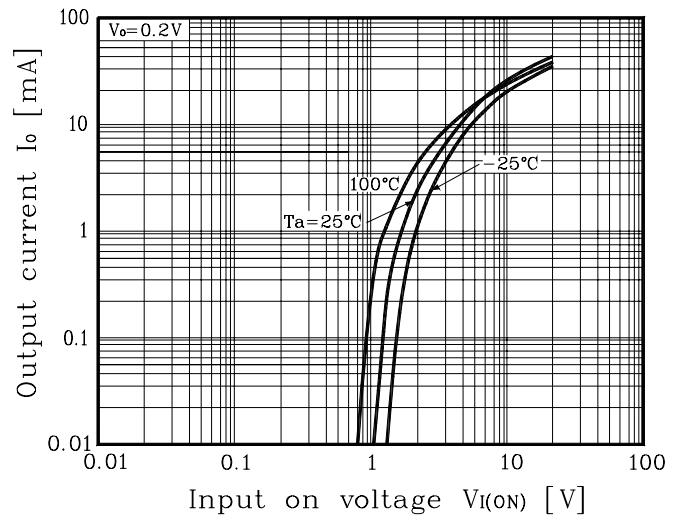
\* : Characteristic of transistor only

## Electrical Characteristic Curves

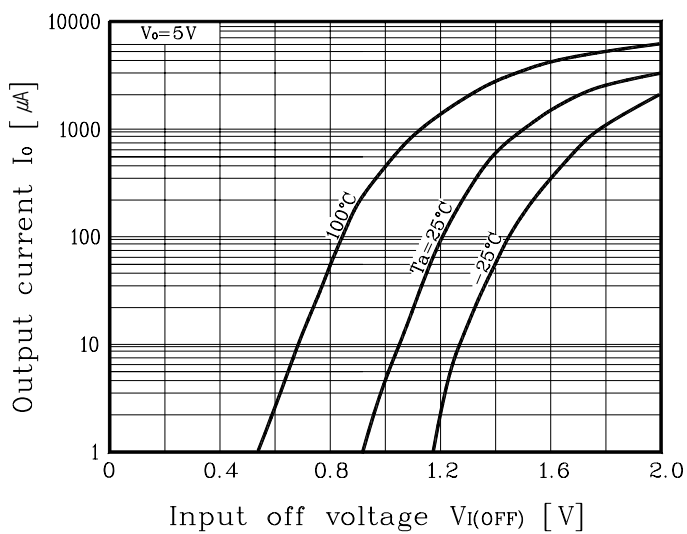
**Fig. 1  $P_D - T_a$**



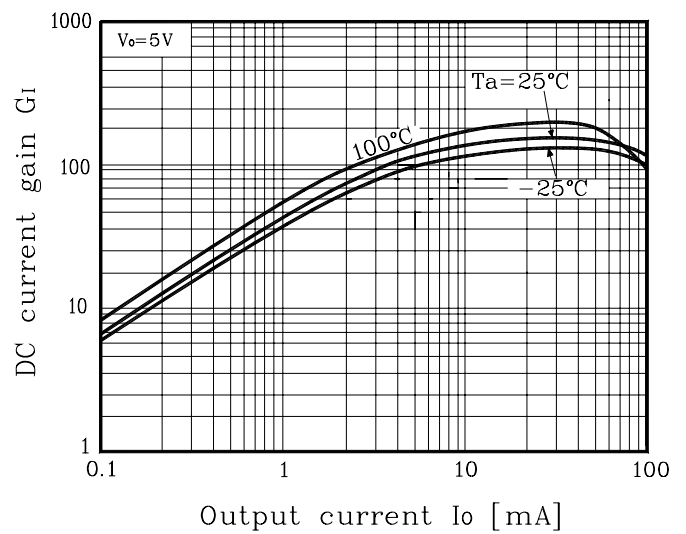
**Fig. 2  $I_O - V_{I(ON)}$**



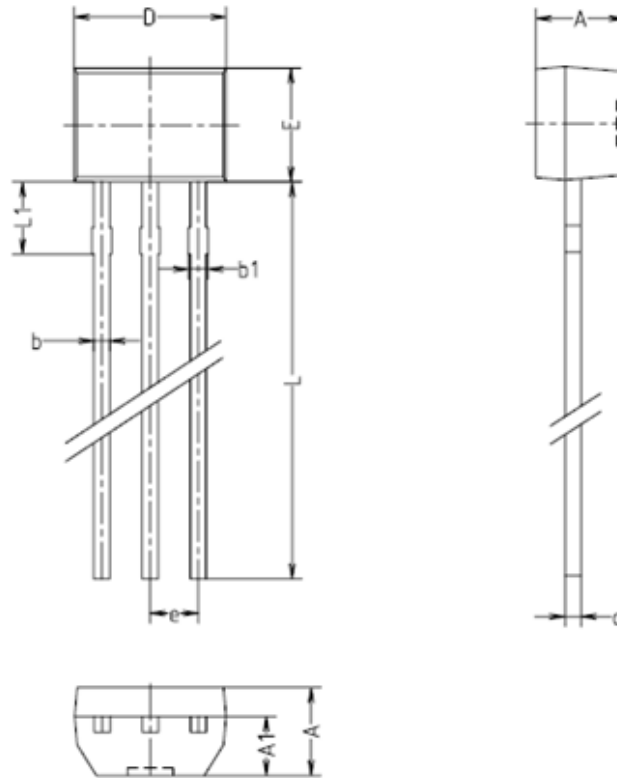
**Fig. 3  $I_O - V_{I(OFF)}$**



**Fig. 4  $G_I - I_O$**



Outline Dimension



| SYMBOL | TQ-92M  |         |         |
|--------|---------|---------|---------|
|        | MINIMUM | NOMINAL | MAXIMUM |
| A      | 2.25    | 2.30    | 2.35    |
| A1     | 1.50    | 1.55    | 1.60    |
| b      | 0.40    | 0.42    | 0.44    |
| b1     | 0.40    | -       | 0.50    |
| c      | 0.40    | 0.42    | 0.44    |
| D      | 3.93    | 4.00    | 4.07    |
| E      | 2.93    | 3.00    | 3.07    |
| e      | 1.17    | 1.27    | 1.37    |
| L      | 14.30   | 14.50   | 14.70   |
| L1     | 2.05    | 2.15    | 2.25    |

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