

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 |
|----------|---------|--------------|
| SRC1219E | RC | SOT-523 |

Outline Dimensions

unit : mm

The mechanical drawing shows the top and side views of the SOT-523 package. Dimensions include: total width 1.60±0.1, distance from left edge to emitter pin 0.80±0.1, total height 1.60±0.1, distance from top edge to emitter pin 1.00 BSC, distance from top edge to collector pin 0.2~0.3, base pin width 0.15 Min., and side view dimensions of 0~0.1, 0.70±0.1, and 0.1 Min.

• Equivalent Circuit

The equivalent circuit shows an NPN transistor with a base resistor R₁ connected to the base (B(IN)), and a collector resistor R₂ connected between the collector (C(OUT)) and emitter (E(COMMON)).

PIN Connections

1. Base
2. Emitter
3. Collector

| R ₁ | R ₂ |
|----------------|----------------|
| 4.7KΩ | 10KΩ |



Absolute maximum ratings

(Ta=25°C)

| Characteristic | Symbol | Ratings | Unit |
|----------------------|-----------|-----------|------|
| Out Voltage | V_O | 50 | V |
| Input Voltage | V_I | 20 | V |
| Out Current | I_O | 100 | mA |
| Power Dissipation | P_D | 150 | mW |
| Junction Temperature | T_J | 150 | °C |
| Storage Temperature | T_{STG} | -55 ~ 150 | °C |

Electrical Characteristics

(Ta=25°C)

| Characteristic | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|------------------------|--------------|-----------------------|------|------|------|------|
| Output Cut-off Current | $I_{O(OFF)}$ | $V_O=50V, V_I=0$ | - | - | 500 | nA |
| DC Current Gain | G_I | $V_O=5V, I_O=10mA$ | 30 | - | - | - |
| Output Voltage | $V_{O(ON)}$ | $I_O=10mA, I_I=0.5mA$ | - | 0.1 | 0.3 | V |
| Input Voltage (ON) | $V_{I(ON)}$ | $V_O=0.3V, I_O=20mA$ | - | 1.76 | 2.5 | V |
| Input Voltage (OFF) | $V_{I(OFF)}$ | $V_O=5V, I_O=0.1mA$ | 0.3 | 0.82 | - | V |
| Transition Frequency | f_T^* | $V_O=10V, I_O=5mA$ | - | 250 | - | MHz |
| Input Current | I_I | $V_I=5V$ | - | - | 1.8 | mA |

* : Characteristic of Transistor Only

Electrical Characteristic Curves

Fig. 1 $I_O - V_{I(ON)}$

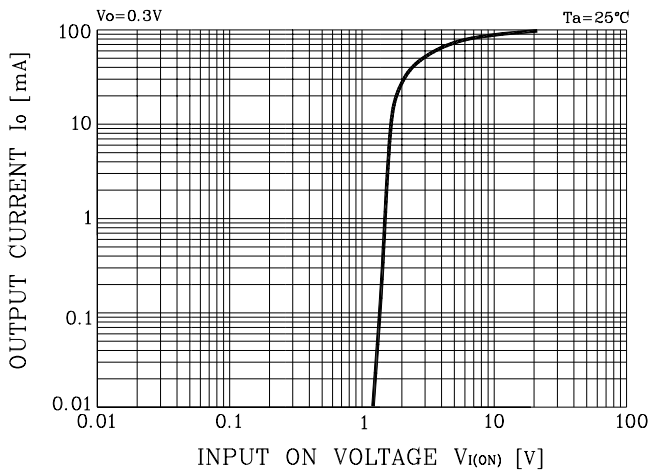


Fig. 2 $I_O - V_{I(OFF)}$

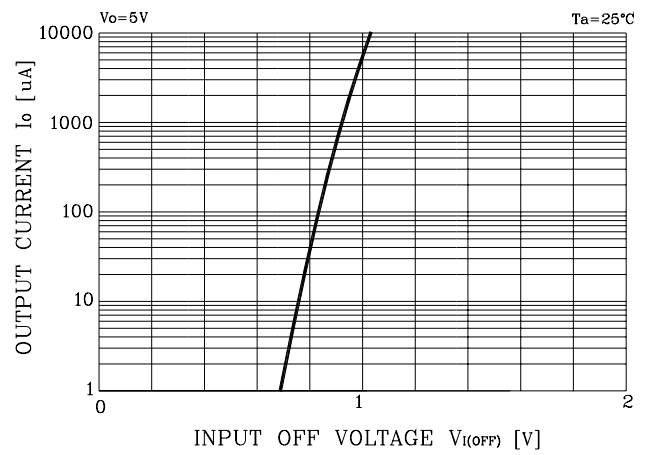


Fig. 3 $G_I - I_O$

