

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 |
|-----------|---------|--------------|
| SRA2202SF | RA2 | SOT-23F |

Outline Dimensions

unit : mm

The mechanical drawing shows a top view and a side view of the SOT-23F package. The top view dimensions are: total width 2.4±0.1 mm, base pin width 1.6±0.1 mm, and emitter/collector pin width 0.4±0.05 mm. The total height is 2.9±0.1 mm, with a base pin height of 1.90 BSC. The side view shows a maximum height of 0.9±0.1 mm and a base pin thickness of 0.15±0.05 mm. The pins are labeled 1 (Base), 2 (Emitter), and 3 (Collector).

Equivalent Circuit

The equivalent circuit shows a PNP transistor with a base input terminal B(IN) connected to the base through resistor R1. The emitter is connected to a common terminal E(COMMON). The collector is connected to an output terminal C(OUT). A resistor R2 is connected between the base and emitter.

PIN Connections

1. Base
2. Emitter
3. Collector

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

Absolute maximum ratings

(Ta=25°C)

| Characteristic | Symbol | Ratings | Unit |
|----------------------|-----------|-----------|------|
| Out Voltage | V_O | -50 | V |
| Input Voltage | V_I | -30 | V |
| Out Current | I_O | -100 | mA |
| Power Dissipation | P_D | 200 | 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 | $V_O = -5V, I_O = -10mA$ | 50 | 80 | - | - |
| Output Voltage | $V_{O(ON)}$ | $I_O = -10mA, I_I = -0.5mA$ | - | -0.1 | -0.3 | V |
| Input Voltage (ON) | $V_{I(ON)}$ | $V_O = -0.2V, I_O = -5mA$ | - | -1.8 | -2.4 | V |
| Input Voltage (OFF) | $V_{I(OFF)}$ | $V_O = -5V, I_O = -0.1mA$ | -1.0 | -1.2 | - | V |
| Transition Frequency | f_T^* | $V_O = -10V, I_O = -5mA$ | - | 200 | - | MHz |
| Input Current | I_I | $V_I = -5V$ | - | - | -0.88 | mA |

* : Characteristic of Transistor Only

Electrical Characteristic Curves

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

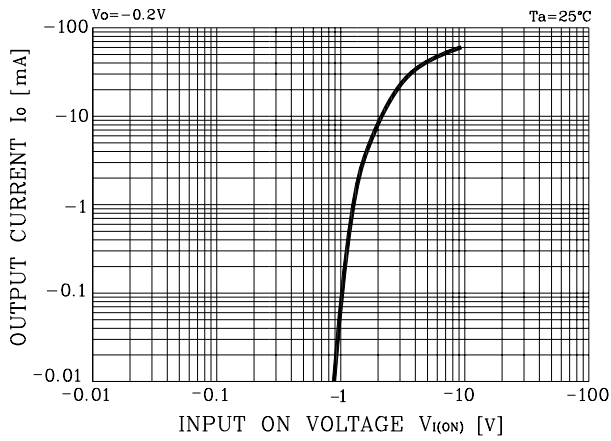


Fig. 2 $I_o - V_{I(OFF)}$

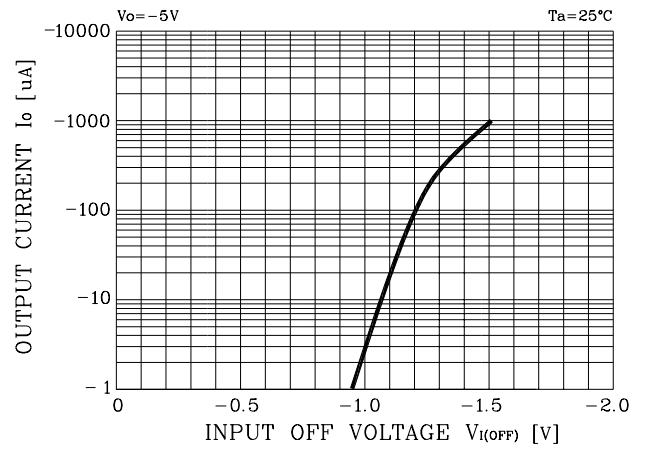


Fig. 3 $G_I - I_o$

