

### 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
SRC1202SF	RC2	SOT-23F

### Outline Dimensions

unit : mm

The mechanical drawing shows the top and side views of the SOT-23F package. Key dimensions include: overall width  $2.4 \pm 0.1$  mm, base width  $1.6 \pm 0.1$  mm, overall height  $2.9 \pm 0.1$  mm, base height  $1.90$  mm (BSC), emitter height  $0.4 \pm 0.05$  mm, collector height  $0.15 \pm 0.05$  mm, and base thickness  $0.9 \pm 0.1$  mm. Pin 1 (Base) is on the left, Pin 2 (Emitter) is in the middle, and Pin 3 (Collector) is on the right.

**• Equivalent Circuit**

The equivalent circuit shows an NPN transistor with an input terminal B(IN) connected to the base through resistor  $R_1$ . The emitter is connected to a common terminal E(COMMON) through resistor  $R_2$ . The collector terminal is labeled C(OUT).

**PIN Connections**

1. Base
2. Emitter
3. Collector

$R_1$	$R_2$
<b>10K<math>\Omega</math></b>	<b>10K<math>\Omega</math></b>

## 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  $I_o - V_{I(ON)}$

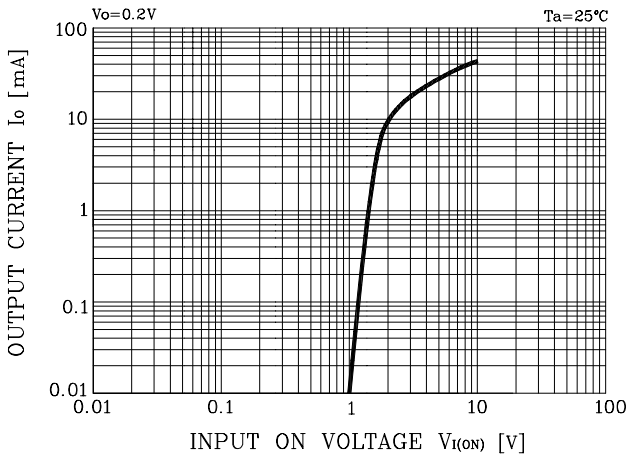


Fig. 2  $I_o - V_{I(OFF)}$

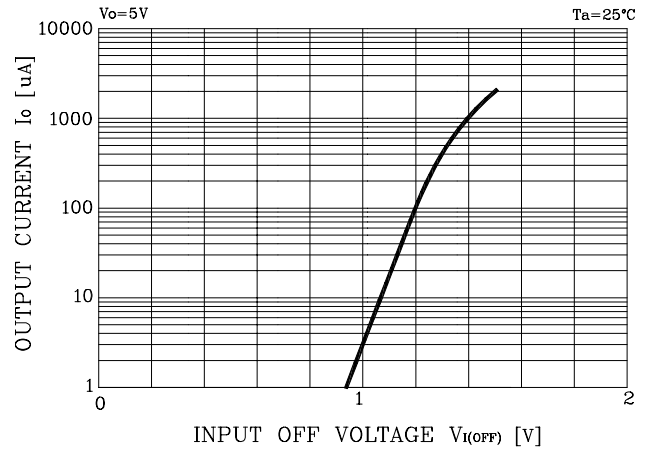


Fig. 3  $G_1 - I_o$

