

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
SRC1203S	RC3	SOT-23

Outline Dimensions

unit : mm

The mechanical drawing shows the top and side views of the SOT-23 package. The top view dimensions are: total width 2.20~2.60 mm, pin-to-pin width 1.20~1.40 mm, and total height 2.80~3.00 mm. The side view dimensions are: total height 0.90~1.02 mm, base thickness 0.10 Max. mm, and lead height 0.19 Max. mm. The distance between the base and the leads is 0.20 Min. mm. The distance from the base to the top of the package is 1.90 Typ. mm. The distance from the base to the bottom of the package is 0.43 Max. mm. The pins are labeled 1, 2, and 3.

• Equivalent Circuit

The equivalent circuit diagram shows an NPN transistor with an input terminal (IN) connected to the base through a resistor R₁. The emitter is connected to a common terminal (COMMON) through a resistor R₂. The collector is connected to an output terminal (OUT).

R ₁	R ₂
22KΩ	22KΩ

PIN Connections

1. IN
2. COMMON
3. OUT

Absolute Maximum Ratings

(Ta=25°C)

Characteristic	Symbol	Rating	Unit
Out voltage	V_O	50	V
Input voltage	V_I	40,-10	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	$V_O=5V, I_O=10mA$	70	120	-	-
Output voltage	$V_{O(ON)}$	$I_O=10mA, I_I=0.5mA$	-	0.1	0.3	V
Input voltage (ON)	$V_{I(ON)}$	$V_O=0.2V, I_O=5mA$	-	2.1	3.0	V
Input voltage (OFF)	$V_{I(OFF)}$	$V_O=5V, I_O=0.1mA$	1.0	1.2	-	V
Transition frequency	f_T^*	$V_O=10V, I_O=5mA, f=1MHz$	-	200	-	MHz
Input current	I_I	$V_I=5V, I_O=0$	-	-	0.36	mA
Input resistor (Input to base)	R_1	-	15.4	22	28.6	K Ω
Input resistor (Base to common)	R_2	-	15.4	22	28.6	K Ω

* : Characteristic of transistor only

Electrical Characteristic Curves

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

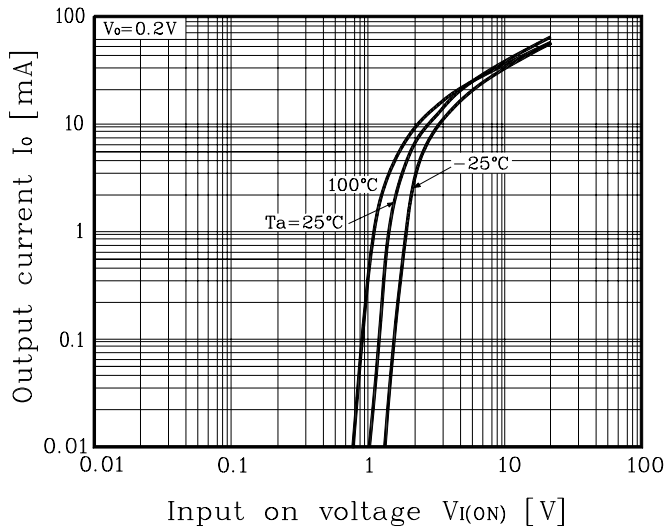


Fig. 2 $I_o - V_{I(OFF)}$

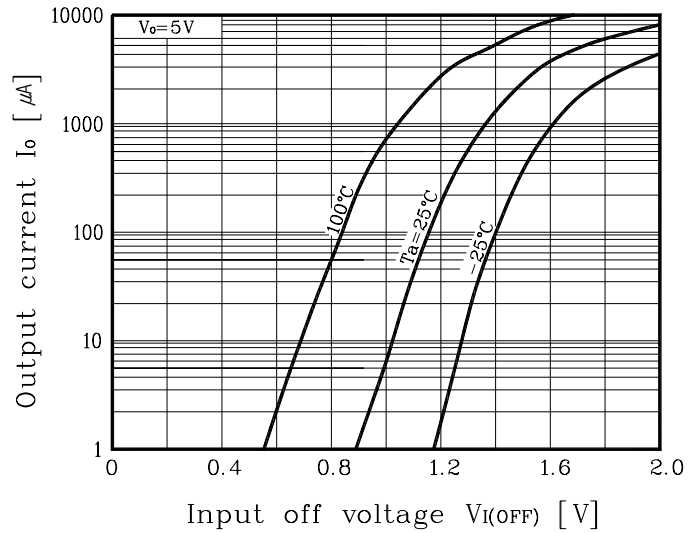
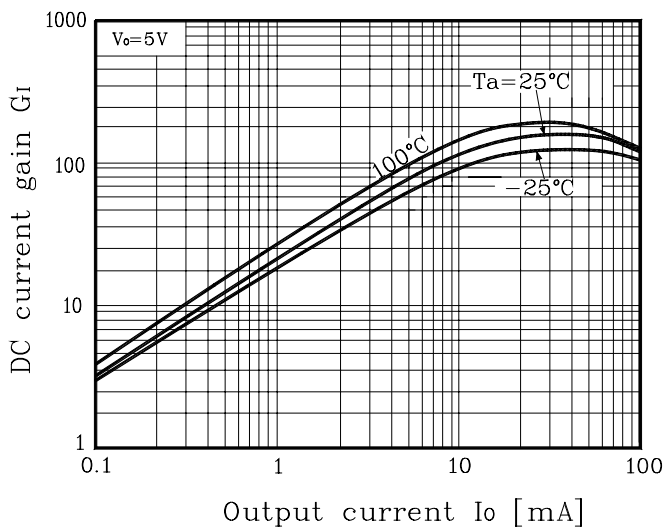


Fig. 3 $G_I - I_o$



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