

## Descriptions

- Switching application
- Interface circuit and driver circuit application

## Features

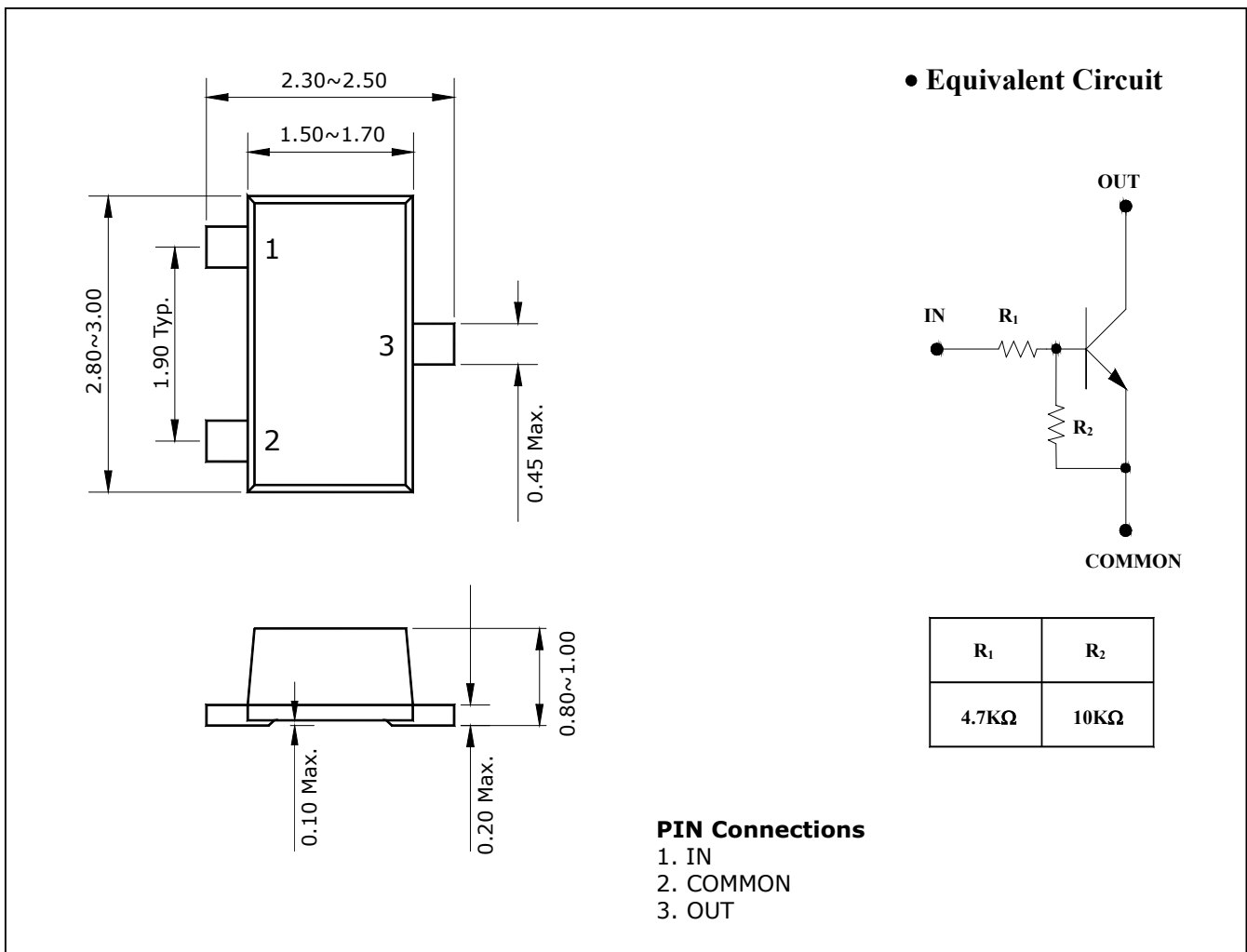
- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process
- High packing density

## Ordering Information

Type NO.	Marking	Package Code
SRC1219SF	RCC	SOT-23F

## Outline Dimensions

unit : mm



The image shows the physical dimensions of the SOT-23F package and its equivalent circuit. The top diagram is a side view of the package with dimensions: total width 2.30~2.50 mm, internal width 1.50~1.70 mm, total height 2.80~3.00 mm, and a typical height of 1.90 mm. The pins are labeled 1 (IN), 2 (COMMON), and 3 (OUT). The bottom diagram is a top view showing a maximum width of 0.10 mm and a maximum height of 0.20 mm. The equivalent circuit shows an NPN transistor with a base resistor R<sub>1</sub> connected to the IN pin, a base-emitter resistor R<sub>2</sub> connected to the COMMON pin, and the collector connected to the OUT pin.

**• Equivalent Circuit**

R <sub>1</sub>	R <sub>2</sub>
4.7KΩ	10KΩ

**PIN Connections**

1. IN
2. COMMON
3. OUT

## Absolute Maximum Ratings

(Ta=25°C)

Characteristic	Symbol	Rating	Unit
Output voltage	$V_O$	50	V
Input voltage	$V_I$	20,-7	V
Output current	$I_O$	100	mA
Power dissipation	$P_D$	200	mW
Junction temperature	$T_J$	150	°C
Storage temperature range	$T_{stg}$	-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)	$V_{I(ON)}$	$V_O=0.2V, I_O=5mA$	-	1.2	1.6	V
Input voltage (OFF)	$V_{I(OFF)}$	$V_O=5V, I_O=0.1mA$	0.5	0.82	-	V
Transition frequency	$f_T^*$	$V_O=10V, I_O=5mA, f=1MHz$	-	200	-	MHz
Input current	$I_I$	$V_I=5V, I_O=0$	-	-	1.8	mA
Input resistor (Input to base)	$R_1$	-	3.3	4.7	6.1	K $\Omega$
Input resistor (Base to common)	$R_2$	-	7	10	13	K $\Omega$

\* : Characteristic of transistor only

Electrical Characteristic Curves

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

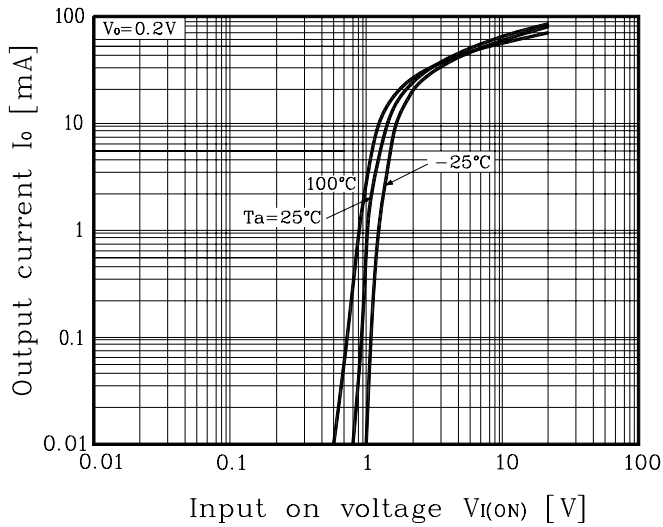


Fig. 2  $I_o - V_{I(OFF)}$

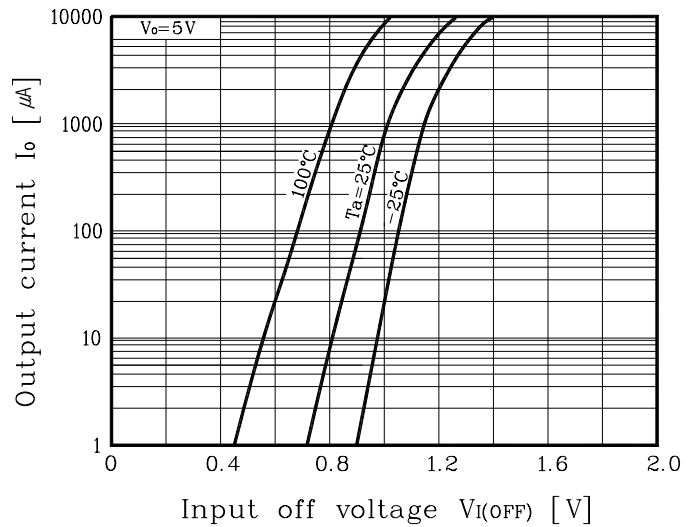
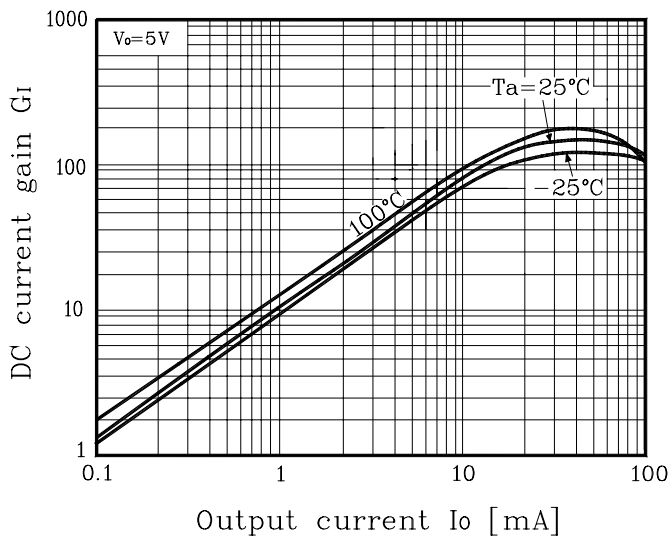


Fig. 3  $G_i - I_o$



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