

## Descriptions

- Switching application
- Interface circuit and driver circuit application

## Features

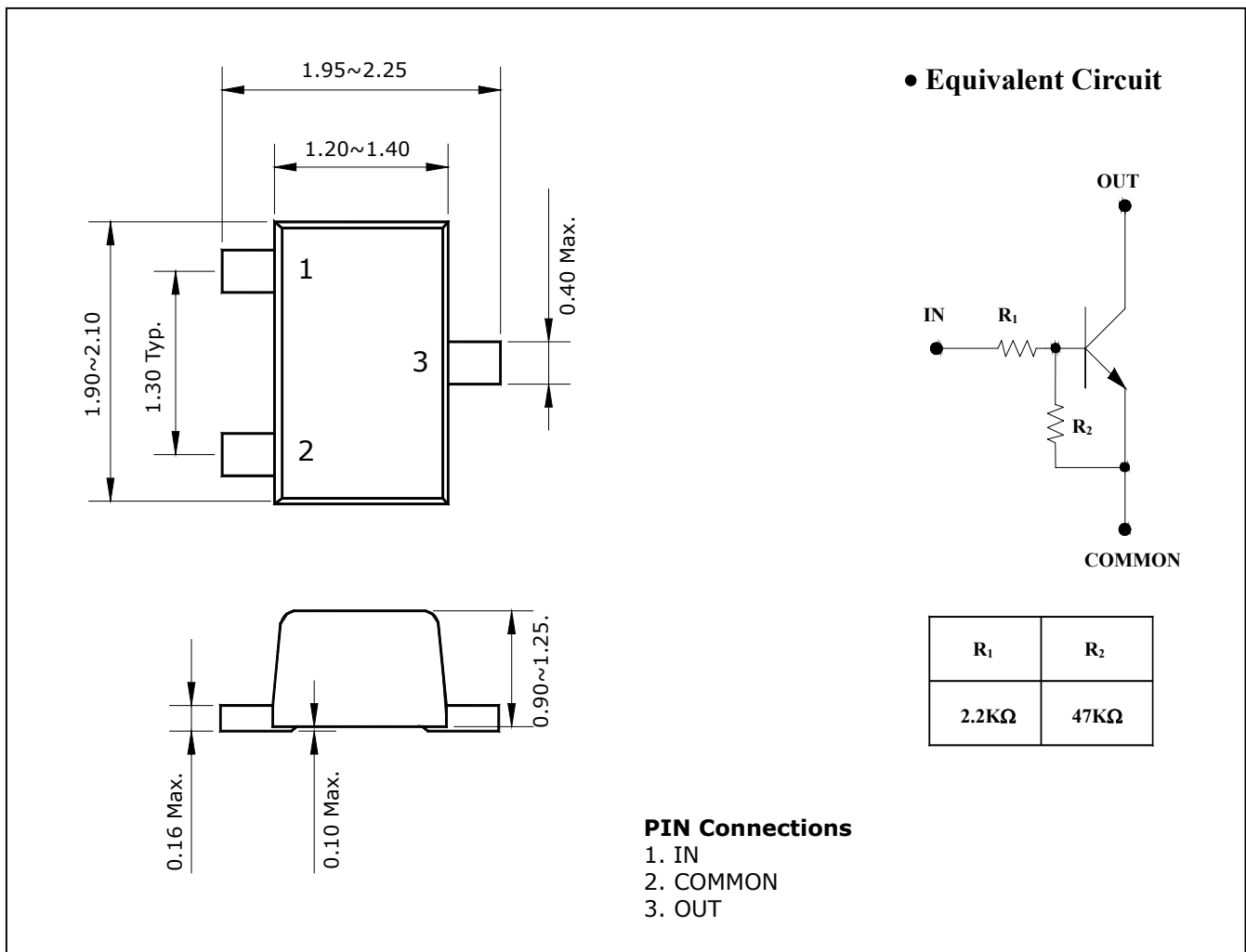
- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process
- High packing density

## Ordering Information

Type NO.	Marking	Package Code
SRC1205UF	R5	SOT-323F

## Outline Dimensions

unit : mm



The figure shows the physical dimensions of the SOT-323F package and its equivalent circuit. The top diagram is a top view showing dimensions: total width 1.95~2.25 mm, width of the central body 1.20~1.40 mm, total height 1.90~2.10 mm, and height of the central body 1.30 Typ. Pin 1 is on the left, pin 2 is on the right, and pin 3 is at the bottom. The bottom diagram is a side view showing a maximum thickness of 0.16 mm, a maximum height of 0.10 mm, and a maximum width of 0.90~1.25 mm. The equivalent circuit shows an NPN transistor with an input resistor R<sub>1</sub> (2.2KΩ) connected to the base (pin 1), an output terminal (pin 3), and a common terminal (pin 2) with a resistor R<sub>2</sub> (47KΩ) connected to the emitter.

**• Equivalent Circuit**

R <sub>1</sub>	R <sub>2</sub>
2.2KΩ	47KΩ

**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	$V_I$	15,-5	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

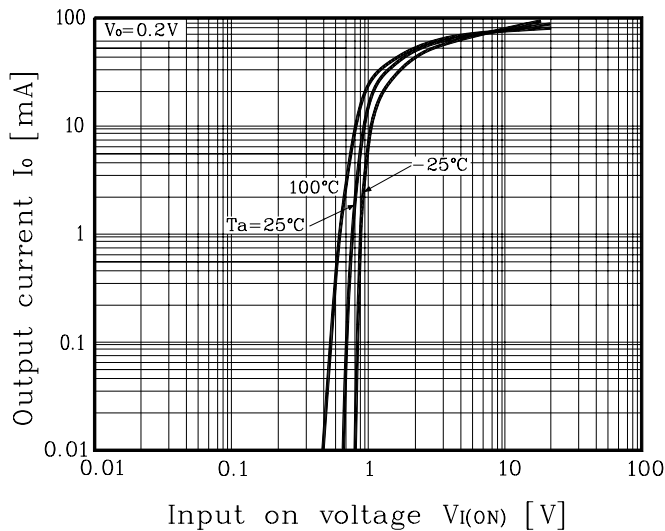
(Ta=25°C)

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	$G_I$	$V_O=5V, I_O=10mA$	80	200	-	-
Output voltage	$V_{O(ON)}$	$I_O=10mA, I_I=0.5mA$	-	0.1	0.3	V
Input voltage (ON)	$V_{I(ON)}$	$V_O=0.2V, I_O=5mA$	-	-	1.1	V
Input voltage (OFF)	$V_{I(OFF)}$	$V_O=5V, I_O=0.1mA$	0.5	-	-	V
Transition frequency	$f_T^*$	$V_O=10V, I_O=5mA, f=1MHz$	-	200	-	MHz
Input current	$I_I$	$V_I=5V, I_O=0$	-	-	3.6	mA
Input resistor (Input to base)	$R_1$	-	1.54	2.2	2.86	K $\Omega$
Input resistor (Base to common)	$R_2$	-	33	47	61	K $\Omega$

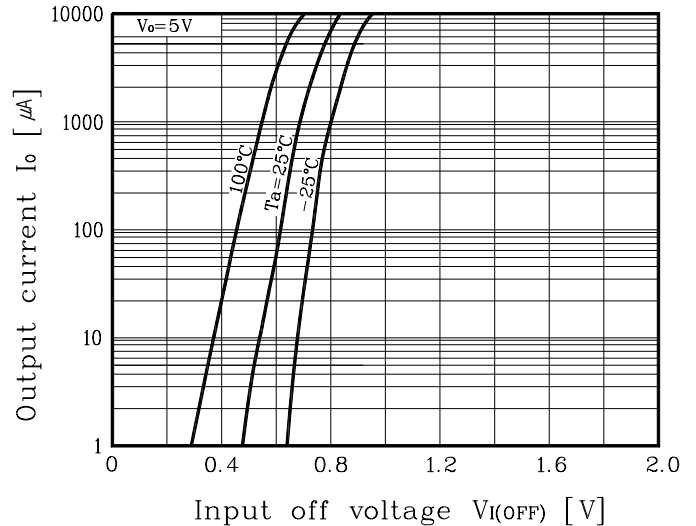
\* : Characteristic of transistor only

## Electrical Characteristic Curves

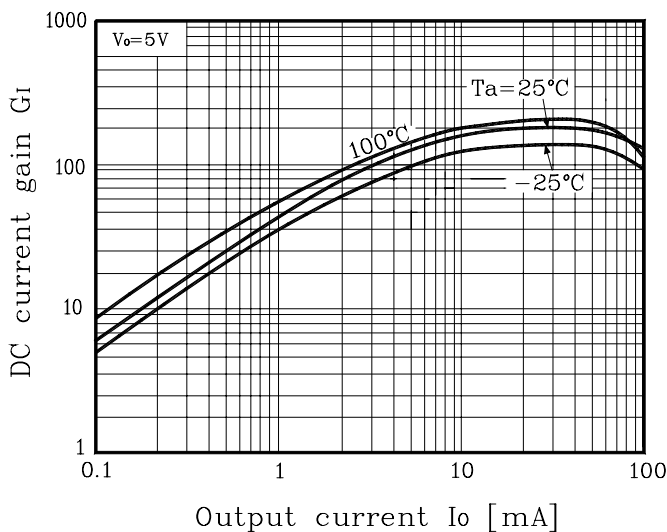
**Fig. 1**  $I_o - V_{I(ON)}$



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



**Fig. 3**  $G_I - I_o$



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