

Descriptions

- Switching application
- Interface circuit and driver circuit application

Features

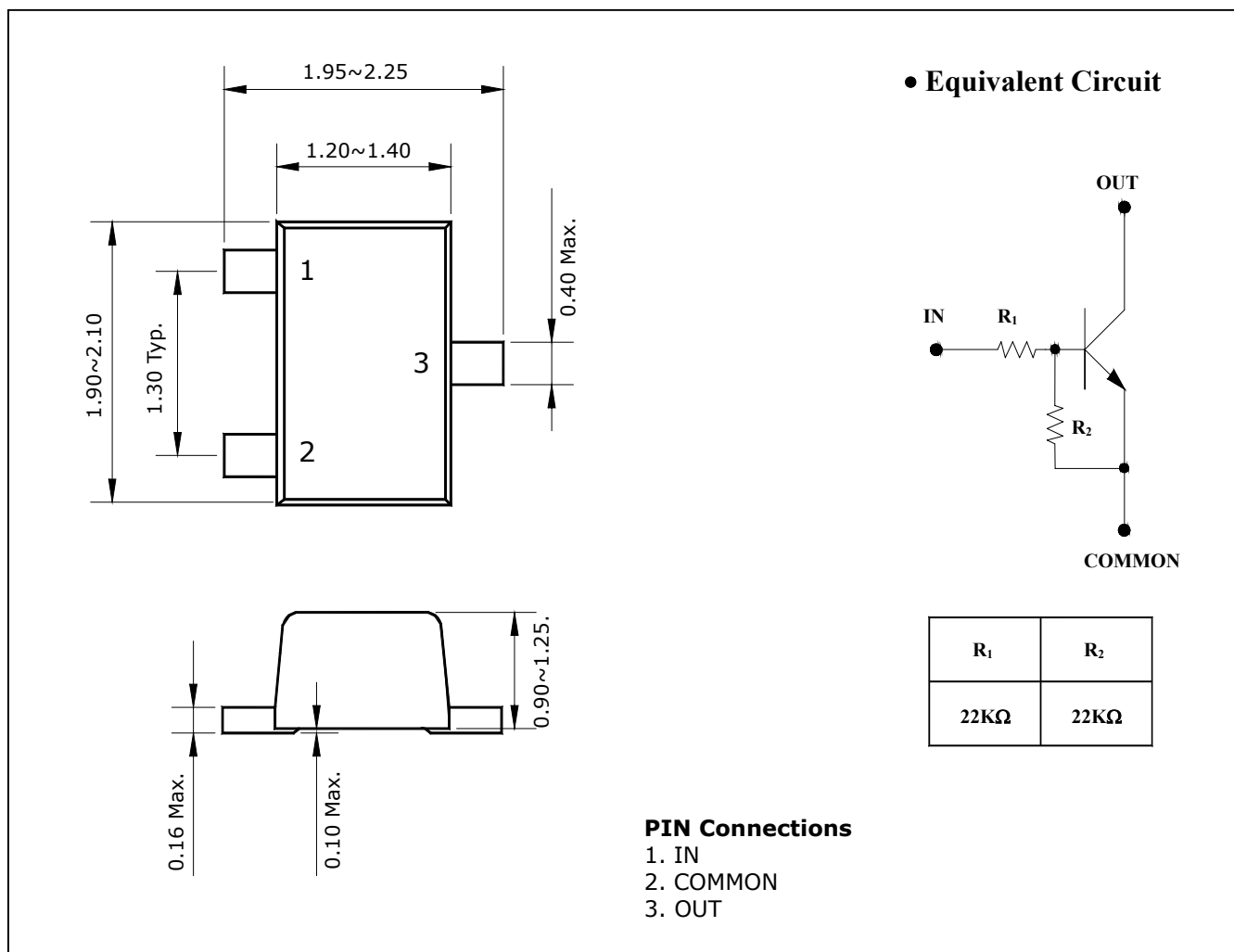
- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process
- High packing density

Ordering Information

Type NO.	Marking	Package Code
SRC1203UF	R3	SOT-323F

Outline Dimensions

unit : mm



The image shows the physical dimensions and electrical characteristics of the SRC1203UF transistor. The top diagram is a top view showing a rectangular package with three pins labeled 1, 2, and 3. Dimensions include a total width of 1.95~2.25 mm, a pin spacing of 1.20~1.40 mm, and a total height of 1.90~2.10 mm. The bottom diagram is a side view showing a height of 0.90~1.25 mm and pin widths of 0.16 Max. and 0.10 Max. To the right, the equivalent circuit diagram shows an NPN transistor with an input terminal (IN) connected to the base through resistor R₁, an output terminal (OUT) connected to the collector, and a common terminal (COMMON) connected to the emitter through resistor R₂. A table below the circuit specifies R₁ = 22KΩ and R₂ = 22KΩ. The PIN Connections list is: 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	40,-10	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	$V_O=5V, I_O=10mA$	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 $I_o - V_{I(ON)}$

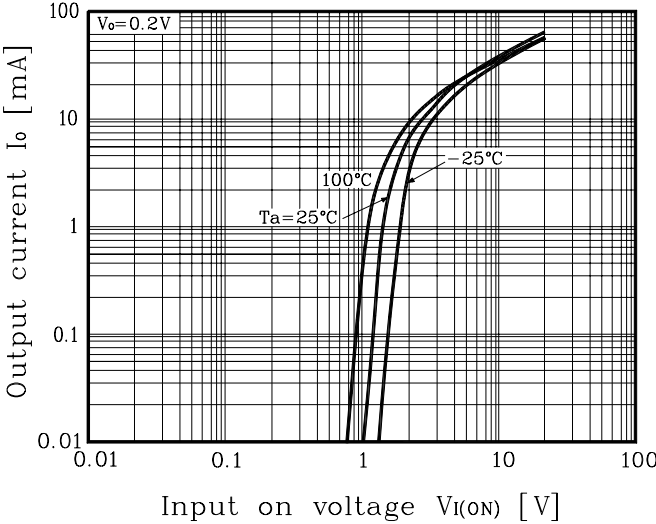


Fig. 2 $I_o - V_{I(OFF)}$

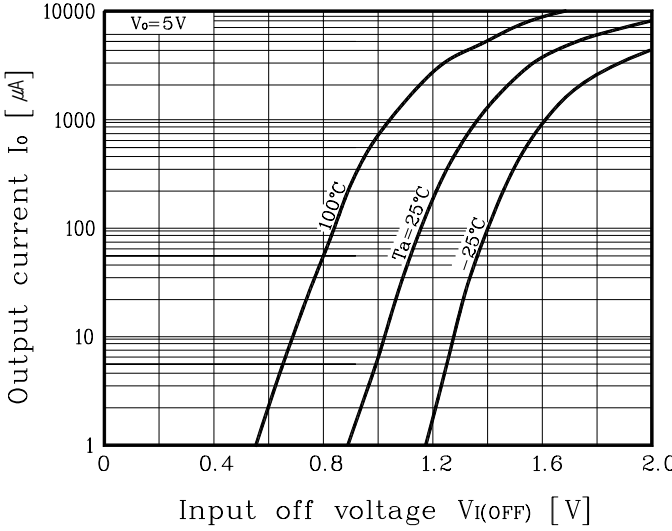
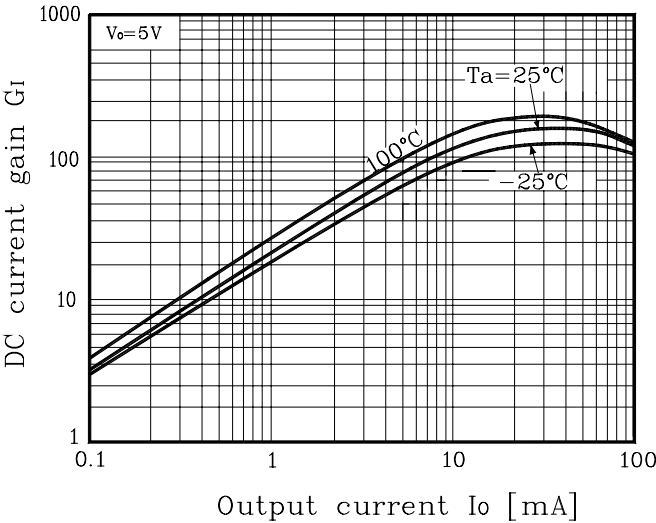


Fig. 3 $G_I - I_o$



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