

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
SRA2219U	CR	SOT-323

Outline Dimensions

unit : mm

The image shows the mechanical dimensions and electrical equivalent circuit for the SRA2219U transistor. The mechanical drawing includes a top view and a side view. The top view shows a rectangular package with dimensions: total width 1.95~2.25 mm, inner width 1.15~1.35 mm, total height 1.90~2.10 mm, and a typical height of 1.30 mm. Pin 1 is on the left, pin 2 is on the bottom, and pin 3 is on the right. The maximum height of the pins is 0.40 mm. The side view shows a maximum height of 0.85~0.95 mm, a maximum pin height of 0.10 mm, and a minimum pin length of 0.10 mm. The maximum height of the package body is 0.20 mm.

The equivalent circuit diagram shows a PNP 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
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 Ω
Input resistor (Base to common)	R_2	-	7	10	13	K Ω

* : Characteristic of transistor only

Electrical Characteristic Curves

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

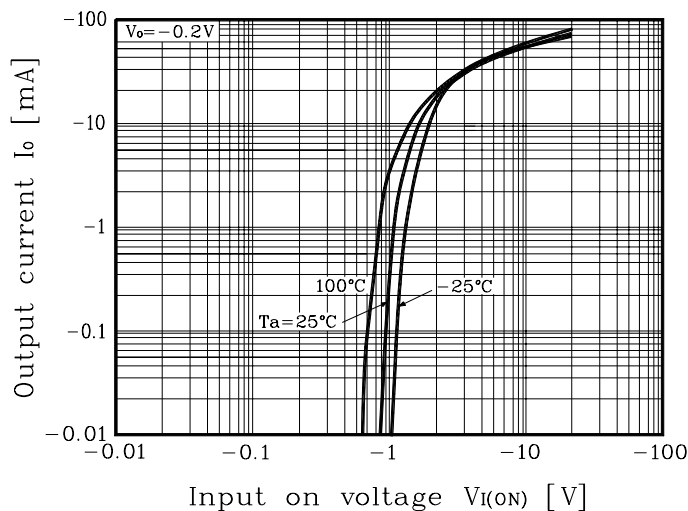


Fig. 2 $I_O - V_{I(OFF)}$

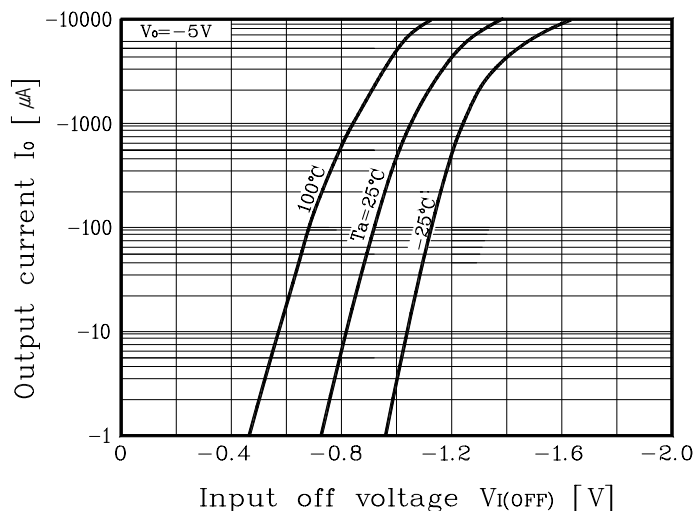
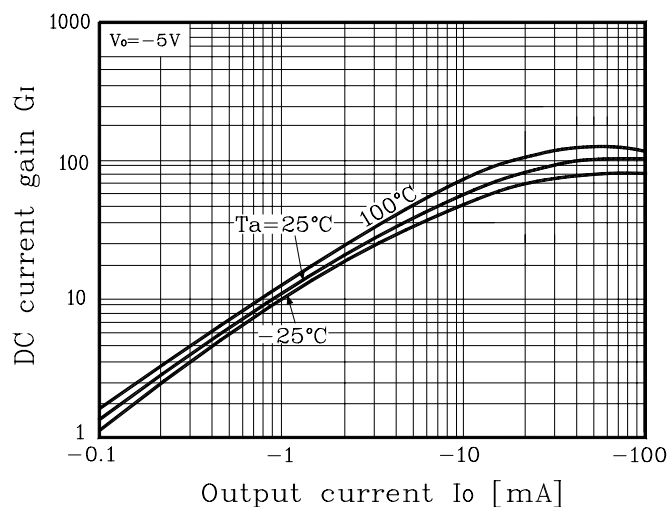


Fig. 3 $G_I - I_O$



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