



SUR511EF

NPN/PNP Epitaxial Planar Silicon Transistor

Description

- Digital transistor

Features

- Both SRC1202 chip and SRA2202 chip in SOT-563F package
- With built-in bias resistors

Ordering Information

Type NO.	Marking	Package Code
SUR511EF	BX	SOT-563F

Outline Dimensions

unit : mm

The mechanical drawing shows the SOT-563F package with dimensions: 1.6±0.1 mm width, 1.0±0.05 mm height, and 0.2±0.1 mm thickness. The internal circuit diagram shows two transistors, Tr1 and Tr2, with bias resistors R1 and R2. The table below provides the resistor values for each transistor.

	R ₁	R ₂
Tr1	10KΩ	10KΩ
Tr2	10KΩ	10KΩ

PIN Connections

1. Emitter 1
2. Base 1
3. Collector 2
4. Emitter 2
5. Base 2
6. Collector 1



SUR511EF

Absolute maximum ratings (Tr1, Tr2)

Ta=25°C

Characteristic	Symbol	Ratings		Unit
		Tr1	Tr2	
Out Voltage	V _O	50	-50	V
Input Voltage	V _I	30	-30	V
Out Current	I _O	100	-100	mA
Power Dissipation	P _D	100		mW
Junction Temperature	T _J	150		°C
Storage Temperature	T _{STG}	-55 ~ 150		°C

Electrical Characteristics(Tr1 : NPN)

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	50	80	-	-
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	-	1.8	2.4	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	-	200	-	MHz
Input Current	I _I	V _I =5V	-	-	0.88	mA

* : Characteristic of Transistor Only

Electrical Characteristics(Tr2 : PNP)

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	50	80	-	-
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	-	-1.8	-2.4	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	-	200	-	MHz
Input Current	I _I	V _I =-5V	-	-	-0.88	mA

* : Characteristic of Transistor Only

Electrical Characteristic Curves

Tr1 : NPN

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

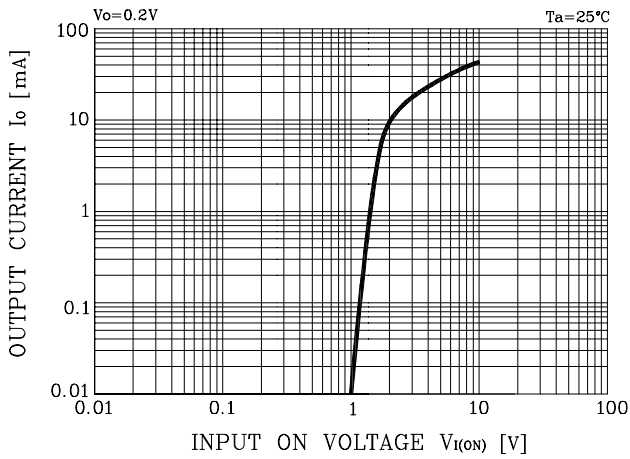


Fig. 2 $I_O - V_{I(OFF)}$

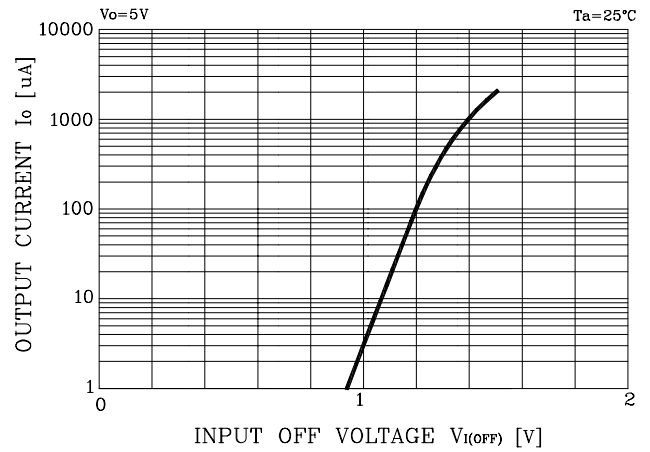
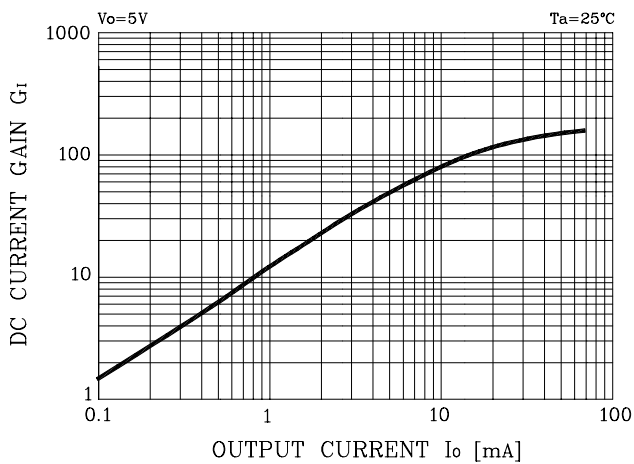


Fig. 3 $G_I - I_O$



Tr2 : PNP

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

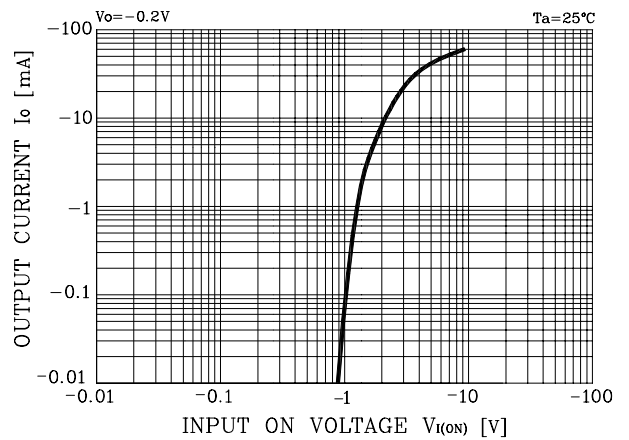


Fig. 2 $I_O - V_{I(OFF)}$

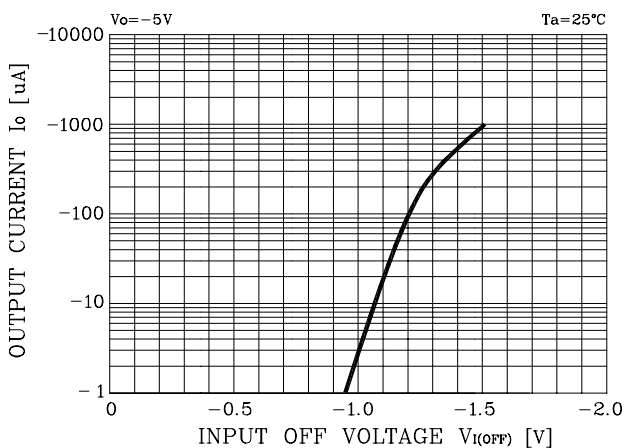


Fig. 3 $G_I - I_O$

