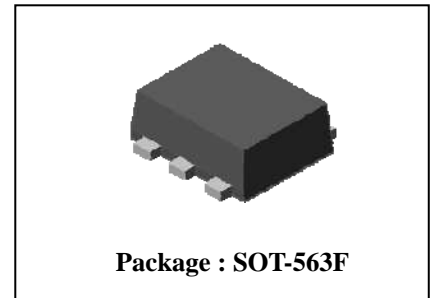


## Description

- Dual chip digital transistor

## Features

- Both SRC1203 chip and SRA2203 chip in SOT-563F package
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process



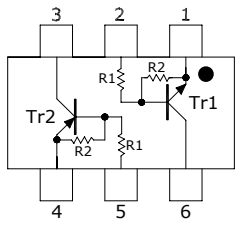
## Ordering Information

Type NO.	Marking	Package Code
SUR512EF	CX□	SOT-563F

□ : Year & Week Code

## Equivalent circuit & PIN Connections

• **Equivalent Circuit**



	R <sub>1</sub>	R <sub>2</sub>
Tr1	22KΩ	22KΩ
Tr2	22KΩ	22KΩ

**PIN Connections**

1. COMMON 1
2. IN 1
3. OUT 2
4. COMMON 2
5. IN 2
6. OUT 1

## Absolute Maximum Ratings [Tr1, Tr2]

(Ta=25°C)

Characteristic	Symbol	Rating		Unit
		Tr1	Tr2	
Output voltage	V <sub>O</sub>	50	-50	V
Input voltage	V <sub>I</sub>	40,-10	-40,10	V
Output current	I <sub>O</sub>	100	-100	mA
Power dissipation	P <sub>D</sub> <sup>*</sup>	150		mW
Junction temperature	T <sub>J</sub>	150		°C
Storage temperature range	T <sub>stg</sub>	-55 ~ 150		°C

※: Total rating

## Electrical Characteristics [Tr1]

(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 $\Omega$
Input resistor (Base to common)	$R_2$	-	15.4	22	28.6	K $\Omega$

\* : Characteristic of transistor only

## Electrical Characteristics [Tr2]

(Ta=25°C)

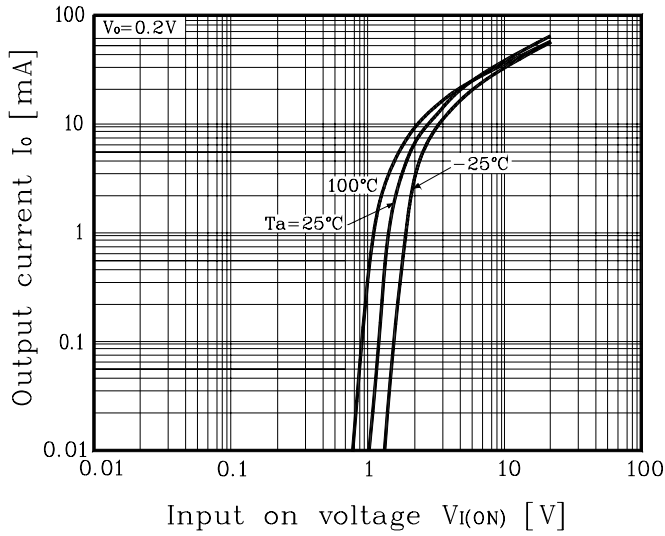
Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Output cut-off current	$I_{O(OFF)}$	$V_O=-50V, V_I=0$	-	-	-500	nA
DC current gain	$G_I$	$V_O=-5V, I_O=-10mA$	70	120	-	-
Output voltage	$V_{O(ON)}$	$I_O=-10mA, I_I=-0.5mA$	-	-0.1	-0.3	V
Input voltage (ON)	$V_{I(ON)}$	$V_O=-0.2V, I_O=-5mA$	-	-2.1	-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 $\Omega$
Input resistor (Base to common)	$R_2$	-	15.4	22	28.6	K $\Omega$

\* : Characteristic of transistor only

Electrical Characteristic Curves

[Tr1]

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



[Tr2]

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

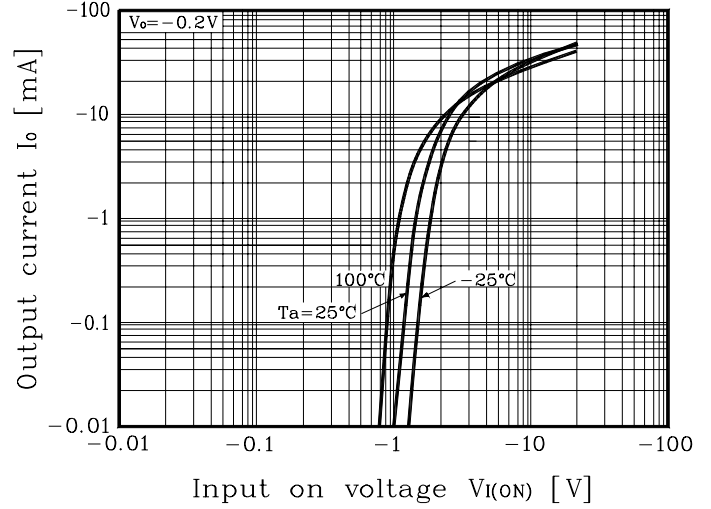


Fig. 2  $I_O - V_{I(OFF)}$

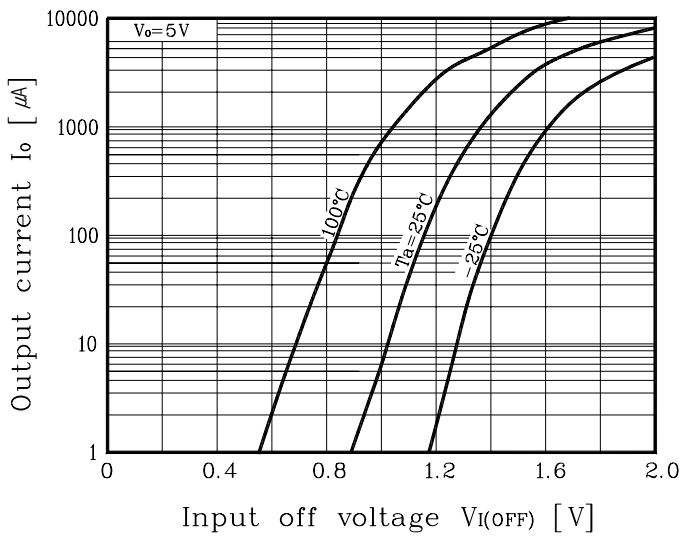


Fig. 2  $I_O - V_{I(OFF)}$

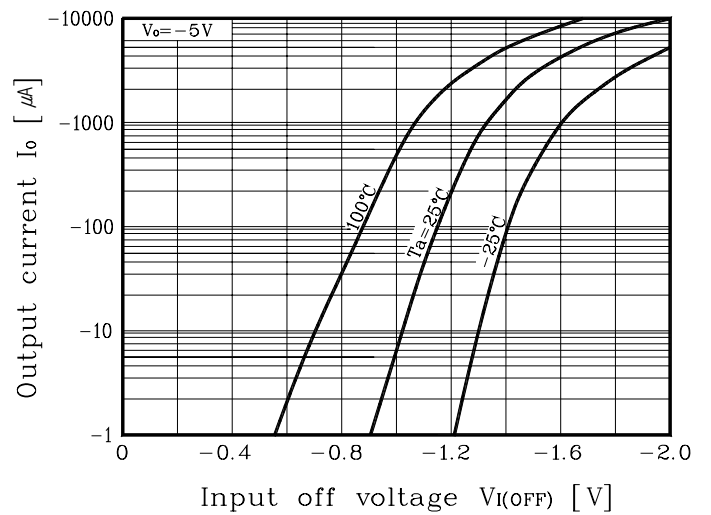


Fig. 3  $G_I - I_O$

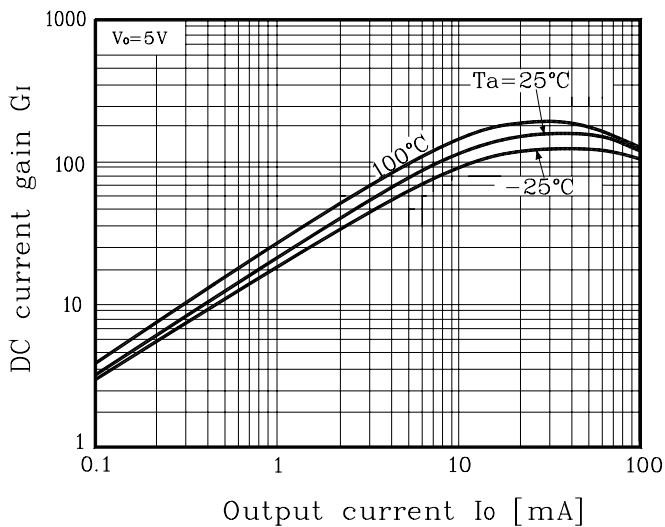
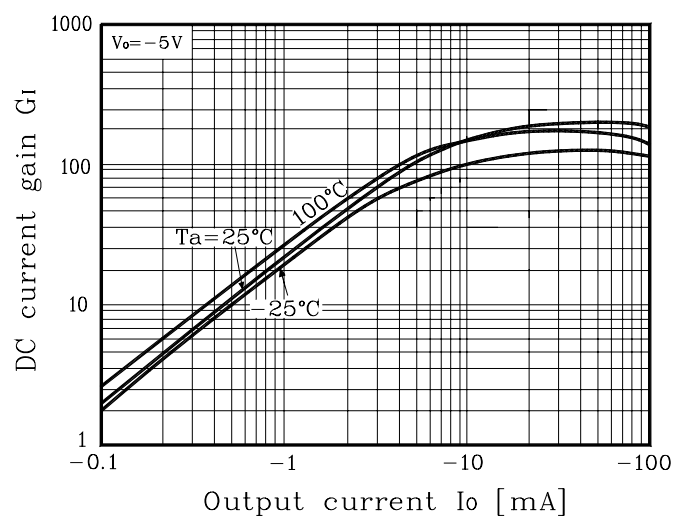
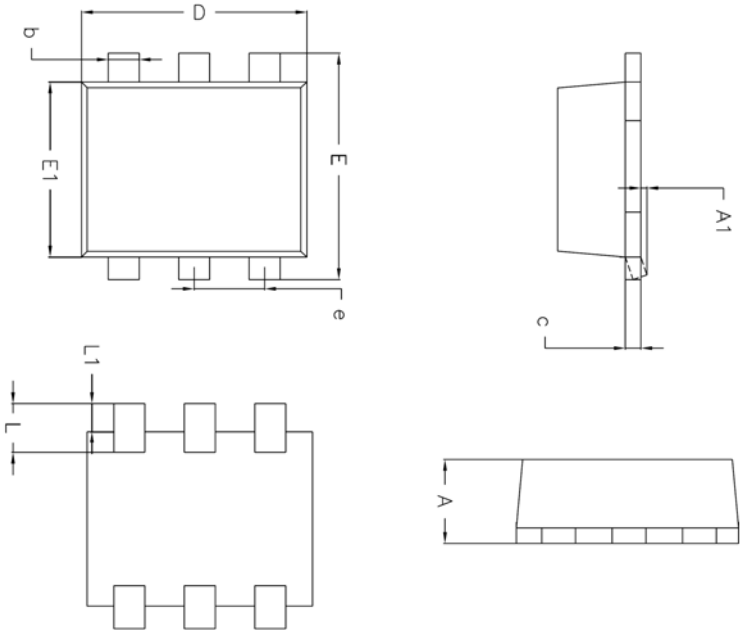


Fig. 3  $G_I - I_O$

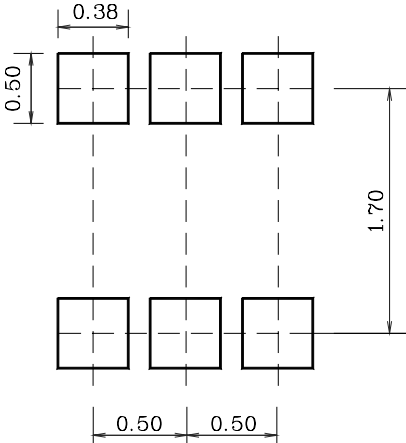


**Outline Dimension**



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	0.53	0.58	0.62	
A1	0.00	—	0.10	
A2	—	—	—	
b	0.15	0.20	0.30	
c	0.10	0.11	0.18	
D	1.50	1.60	1.70	
E	1.50	1.60	1.70	
E1	1.10	1.20	1.30	
e	0.50 BSC			
L	0.25	0.35	0.45	
L1	0.13	0.20	0.27	

**※ Recommend PCB solder land [Unit: mm]**



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