# **SUR539J**

#### Epitaxial planar NPN silicon transistor

## **Description**

• Dual chip digital transistor

#### **Features**

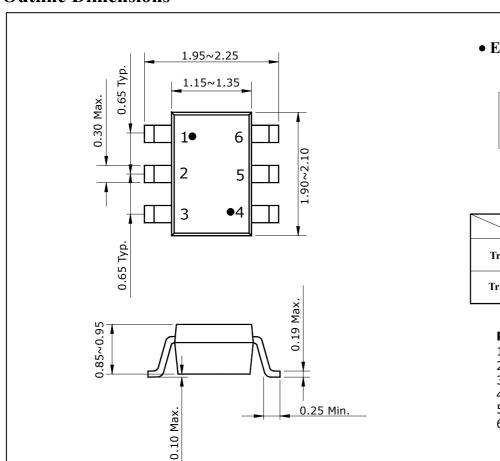
- Two SRC1203 chips in SOT-363 package
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process

# **Ordering Information**

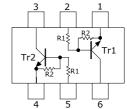
Type NO.	Marking	Package Code		
SUR539J	НОН	SOT-363		

## **Outline Dimensions**

unit: mm



### • Equivalent Circuit



	$\mathbf{R_1}$	R <sub>2</sub>
Tr1	22ΚΩ	22ΚΩ
Tr2	22ΚΩ	22ΚΩ

#### **PIN Connections**

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

KSD-R5S007-000 1

Absolute Maximum Ratings [Tr1,Tr2]

(Ta=25°C)

Characteristic	Symbol	Rating	Unit
Output voltage	Vo	50	V
Input voltage	V <sub>I</sub>	40,-10	V
Output current	$I_{O}$	100	mA
Power dissipation	P <sub>D</sub> **	200	mW
Junction temperature	T <sub>J</sub>	150	°C
Storage temperature range	$T_{stg}$	-55 ~ 150	°C

<sup>\*:</sup> Total rating

# **Electrical Characteristics** [ Tr1,Tr2 ]

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Тур.	Max.	Unit
Output cut-off current	I <sub>O(OFF)</sub>	V <sub>O</sub> =50V, V <sub>I</sub> =0	-	-	500	nA
DC current gain	$G_{\mathrm{I}}$	V <sub>O</sub> =5V, I <sub>O</sub> =10mA	70	120	-	-
Output voltage	V <sub>O(ON)</sub>	$I_O$ =10mA, $I_I$ =0.5mA	-	0.1	0.3	V
Input voltage (ON)	$V_{I(ON)}$	V <sub>O</sub> =0.2V, I <sub>O</sub> =5mA	-	2.1	3.0	V
Input voltage (OFF)	$V_{I(OFF)}$	V <sub>O</sub> =5V, I <sub>O</sub> =0.1mA	1.0	1.2	-	V
Transition frequency	f <sub>T</sub> *	$V_0$ =10V, $I_0$ =5mA, f=1MHz	-	200	-	MHz
Input current	$I_{\rm I}$	$V_I=5V$ , $I_O=0$	-	-	0.36	mA
Input resistor (Input to base)	$R_1$	-	15.4	22	28.6	<b>K</b> Ω
Input resistor (Base to common)	R <sub>2</sub>	-	15.4	22	28.6	<b>K</b> Ω

<sup>\* :</sup> Characteristic of transistor only

KSD-R5S007-000 2

### **Electrical Characteristic Curves**

[Tr1, Tr2]

Fig. 1  $I_0$  -  $V_{I(ON)}$ 

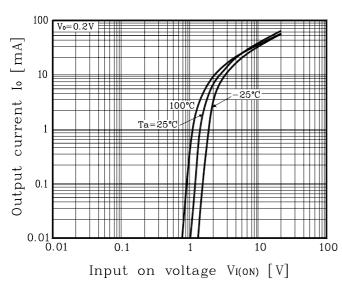


Fig. 2 I<sub>O</sub> - V<sub>I(OFF)</sub>

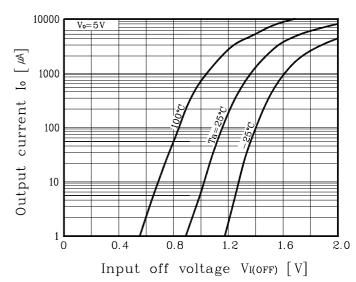
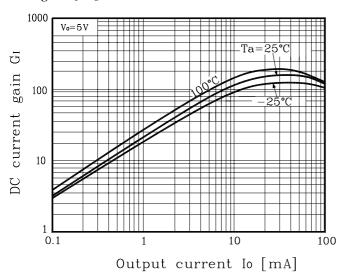


Fig. 3  $G_I$  -  $I_O$ 



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