

# SUR543EF

**Epitaxial planar NPN silicon transistor** 

#### **Descriptions**

• Dual chip digital transistor

#### **Features**

- Two SRC1204 chips in SOT-563F package
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process

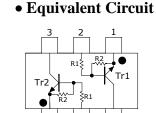
# Package : SOT-563F

#### **Ordering Information**

Type NO.	Marking	Package Code
SUR543EF	SL□	SOT-563F

□ : Year & Week Code

#### **Equivalent circuit & PIN Connections**



	$\mathbf{R}_{1}$	$\mathbf{R}_2$
Tr1	47ΚΩ	47ΚΩ
Tr2	47ΚΩ	47ΚΩ

#### **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
Output voltage	Vo	50	V
Input voltage	V <sub>I</sub>	40,-10	V
Output current	I <sub>O</sub>	100	mA
Power dissipation	P <sub>D</sub> *	150	mW
Junction temperature	T <sub>3</sub>	150	°C
Storage temperature range	$T_{stg}$	-55 ~ 150	°C

\*: Total rating

KSD-R5U010-001

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

 $(Ta=25^{\circ}C)$ 

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	80	200	-	-
Output voltage	V <sub>O(ON)</sub>	I <sub>O</sub> =10mA, I <sub>I</sub> =0.5mA	-	0.1	0.3	V
Input voltage (ON)	V <sub>I(ON)</sub>	V <sub>O</sub> =0.2V, I <sub>O</sub> =5mA	-	2.8	5.0	V
Input voltage (OFF)	V <sub>I(OFF)</sub>	V <sub>O</sub> =5V, I <sub>O</sub> =0.1mA	1.0	1.2	-	V
Transition frequency	f <sub>T</sub> *	V <sub>O</sub> =10V, I <sub>O</sub> =5mA, f=1MHz	-	200	-	MHz
Input current	II	V <sub>I</sub> =5V, I <sub>O</sub> =0	-	-	0.18	mA
Input resistor (Input to base)	R <sub>1</sub>	-	33	47	61	ΚΩ
Input resistor (Base to common)	R <sub>2</sub>	-	33	47	61	<b>K</b> Ω

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

#### **Electrical Characteristic Curves**

#### [Tr1, Tr2]

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

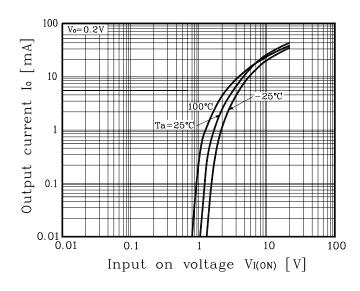


Fig. 2  $I_{O}$  -  $V_{I(OFF)}$ 

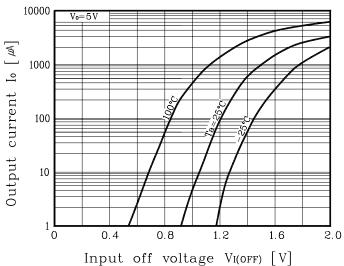
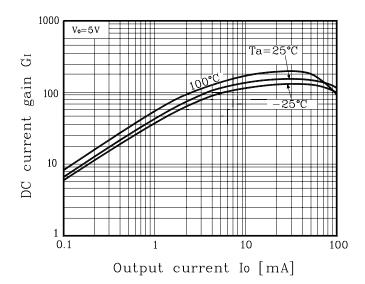
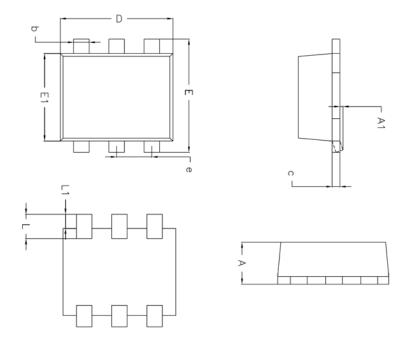


Fig. 3  $G_I$  -  $I_O$ 

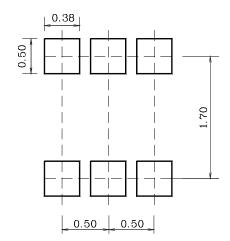


# **Outline Dimension**



	MILLIMETERS			
SYMBOL	MINIMUM	NOMINAL	MAXIMUM	NOTE
Α	0.53	0.58	0.62	
A1	0.00	_	0.10	
A2	_	_	_	
Ь	0.15	0.20	0.30	
С	0.10	0.11	0.18	
D	1.50	1.60	1.70	
Ε	1.50	1.60	1.70	
E1	1.10	1.20	1.30	
е		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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