

SUR491J

Epitaxial planar NPN/PNP silicon transistor

Description

• Dual chip digital transistor

Features

- Both SRC1202 chip and SRA2202 chip in SOT-363 package
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process

Package: SOT-363

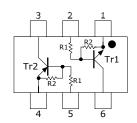
Ordering Information

| Type NO. | Marking | Package Code |
|----------|---------|--------------|
| SUR491J | BX□ | SOT-363 |

□ : Year & Week Code

Equivalent circuit & PIN Connections

• Equivalent Circuit



| | \mathbf{R}_{1} | \mathbf{R}_2 |
|-----|------------------|----------------|
| Tr1 | 10ΚΩ | 10ΚΩ |
| Tr2 | 10ΚΩ | 10ΚΩ |

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 | |
|---------------------------|----------------|-----------|--------|------|--|
| | 5,111,501 | Tr1 | Tr2 | | |
| Output voltage | Vo | 50 | -50 | V | |
| Input voltage | V _I | 30,-10 | -30,10 | V | |
| Output current | I _O | 100 | -100 | mA | |
| Power dissipation | P_D^* | 200 | | mW | |
| Junction temperature | Tı | 150 | | °C | |
| Storage temperature range | T_{stg} | -55 ~ 150 | | °C | |

*: Total rating

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Electrical Characteristics [Tr1]

(Ta=25°C)

| Characteristic | Symbol Test Condition | | Min. | Тур. | Max. | Unit |
|---------------------------------|-----------------------|---|------|------|------|------------|
| Output cut-off current | $I_{O(OFF)}$ | V ₀ =50V, V _I =0 | - | 1 | 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 ₀ =0.2V, I ₀ =5mA | - | 1.8 | 2.4 | V |
| Input voltage (OFF) | $V_{\rm I(OFF)}$ | V _O =5V, I _O =0.1mA | 1.0 | 1.2 | - | V |
| Transition frequency | f_T^* | V_0 =10V, I_0 =5mA, f=1MHz | - | 200 | - | MHz |
| Input current | $I_{\rm I}$ | V_{I} =5 V , I_{O} =0 | - | - | 0.88 | mA |
| Input resistor (Input to base) | R_1 | - | 7 | 10 | 13 | K Ω |
| Input resistor (Base to common) | R ₂ | - | 7 | 10 | 13 | K Ω |

^{* :} Characteristic of transistor only

Electrical Characteristics [Tr2]

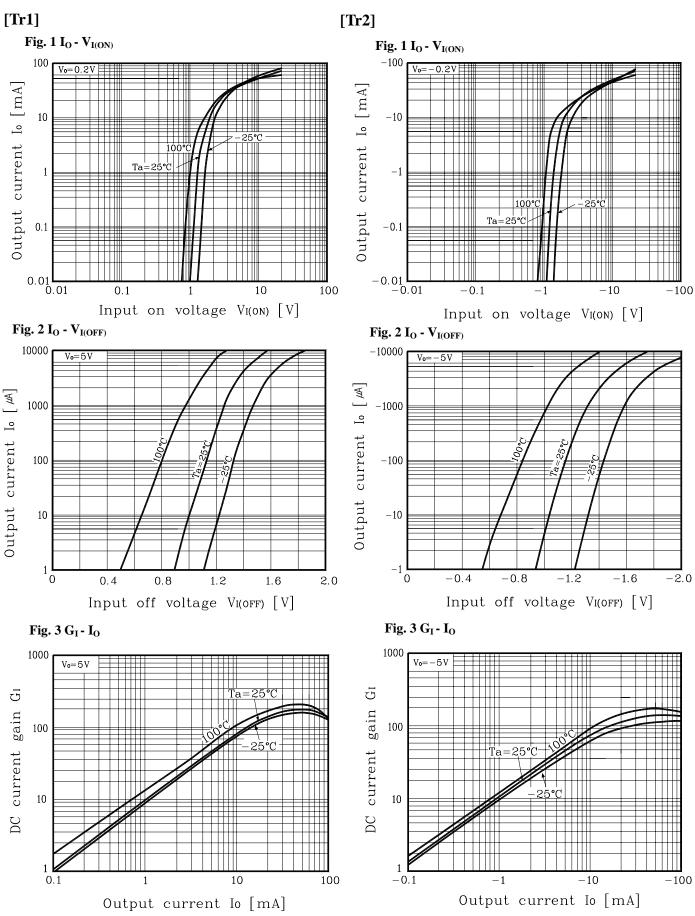
(Ta=25°C)

| 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 | 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, f=1MHz | - | 200 | - | MHz |
| Input current | II | $V_{\rm I}$ =-5V, $I_{\rm O}$ =0 | - | - | -0.88 | mA |
| Input resistor (Input to base) | R ₁ | - | 7 | 10 | 13 | ΚΩ |
| Input resistor (Base to common) | R ₂ | - | 7 | 10 | 13 | K Ω |

^{* :} Characteristic of transistor only

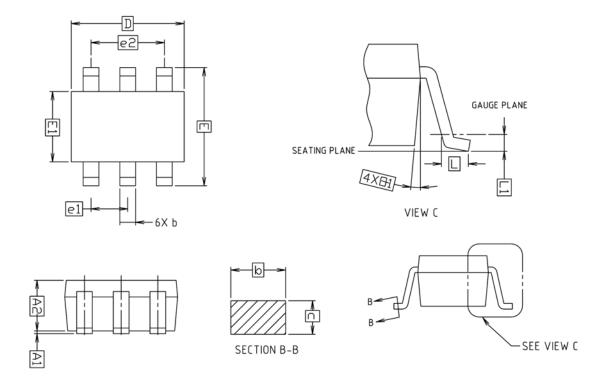
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Electrical Characteristic Curves



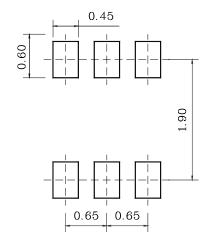
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Outline Dimension



| | l N | NOTE | | |
|--------|---------------|---------|---------|------|
| SYMBOL | MINIMUM | NOMINAL | MAXIMUM | NOIL |
| A1 | 0.00 | _ | 0.10 | |
| A2 | 0.90 | 0.95 | 1.00 | |
| b | 0.25 | _ | 0.40 | |
| С | 0.10 - 0.25 | | 0.25 | |
| D | 1.90 | 2.00 | 2.10 | |
| Ε | 1.95 | 2.10 | 2.25 | |
| E1 | 1.15 1.25 1.3 | | 1.35 | |
| e1 | | | | |
| e2 | | | | |
| L | 0.25 | | | |
| L1 | | | | |

* Recommend PCB solder land [Unit: mm]



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