

### Descriptions

- Switching application
- Interface circuit and driver circuit application

### Features

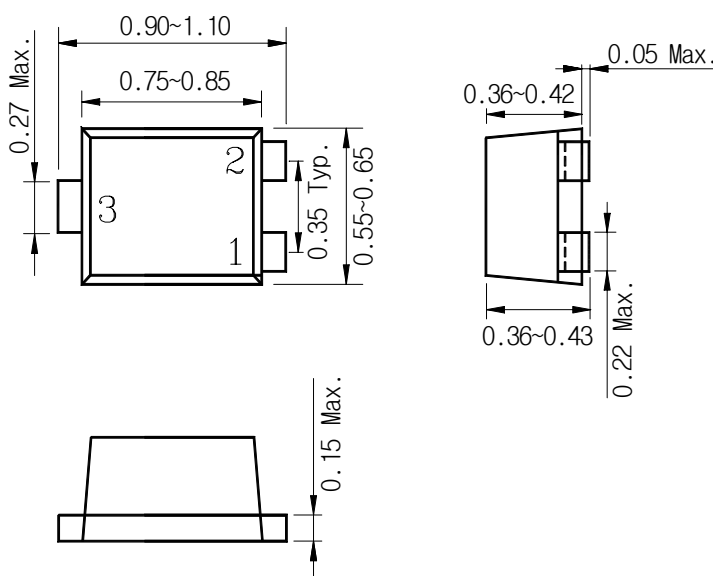
- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process
- Complementary pair with NT357

### Ordering Information

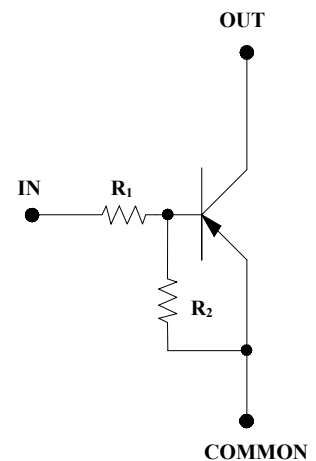
| Type NO. | Marking | Package Code |
|----------|---------|--------------|
| NT358    | Q       | SOT-923      |

### Outline Dimensions

unit : mm



### • Equivalent Circuit



|                |                |
|----------------|----------------|
| R <sub>1</sub> | R <sub>2</sub> |
| 47KΩ           | 47KΩ           |

### PIN Connections

1. IN
2. COMMON
3. OUT

**Absolute Maximum Ratings**

(Ta=25°C)

| Characteristic            | Symbol    | Rating    | Unit |
|---------------------------|-----------|-----------|------|
| Output voltage            | $V_O$     | -20       | V    |
| Input voltage             | $V_I$     | -20, 10   | V    |
| Output current            | $I_O$     | -50       | mA   |
| Power dissipation         | $P_D$     | 50        | mW   |
| Junction temperature      | $T_J$     | 150       | °C   |
| Storage temperature range | $T_{stg}$ | -55 ~ 150 | °C   |

**Electrical Characteristics**

(Ta=25°C)

| Characteristic                  | Symbol       | Test Condition          | Min. | Typ. | Max.  | Unit       |
|---------------------------------|--------------|-------------------------|------|------|-------|------------|
| Output cut-off current          | $I_{O(OFF)}$ | $V_O=-20V, V_I=0$       | -    | -    | -500  | nA         |
| DC current gain                 | $G_I$        | $V_O=-5V, I_O=-10mA$    | 90   | -    | -     | -          |
| Output voltage                  | $V_{O(ON)}$  | $I_O=-5mA, I_I=-0.25mA$ | -    | -    | -0.15 | V          |
| Input voltage (ON)              | $V_{I(ON)}$  | $V_O=-0.2V, I_O=-5mA$   | -    | -2.8 | -5.0  | V          |
| Input voltage (OFF)             | $V_{I(OFF)}$ | $V_O=-5V, I_O=-0.1mA$   | -1.0 | -1.2 | -     | V          |
| Transition frequency            | $f_T^*$      | $V_O=-10V, I_O=-5mA$    | -    | 200  | -     | MHz        |
| Input current                   | $I_I$        | $V_I=-5V, I_O=0$        | -    | -    | -0.18 | mA         |
| Input resistor (Input to base)  | $R_1$        | -                       | 33   | 47   | 61    | K $\Omega$ |
| Input resistor (Base to common) | $R_2$        | -                       | 33   | 47   | 61    | K $\Omega$ |

\* : Characteristic of transistor only

Electrical Characteristic Curves

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

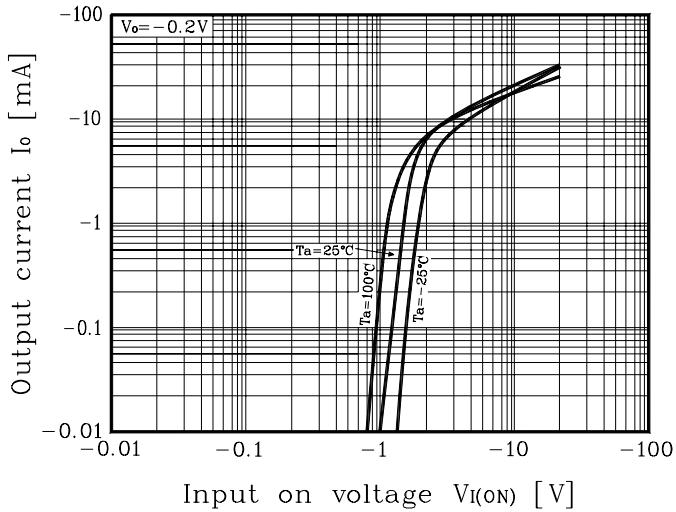


Fig. 2  $I_O - V_{I(OFF)}$

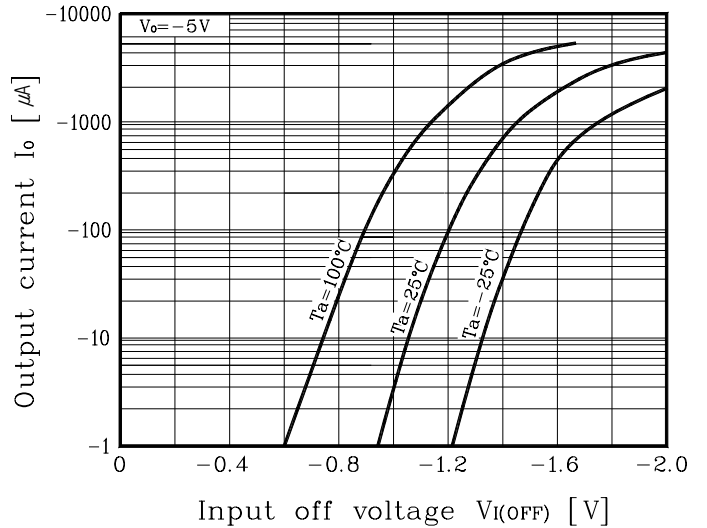
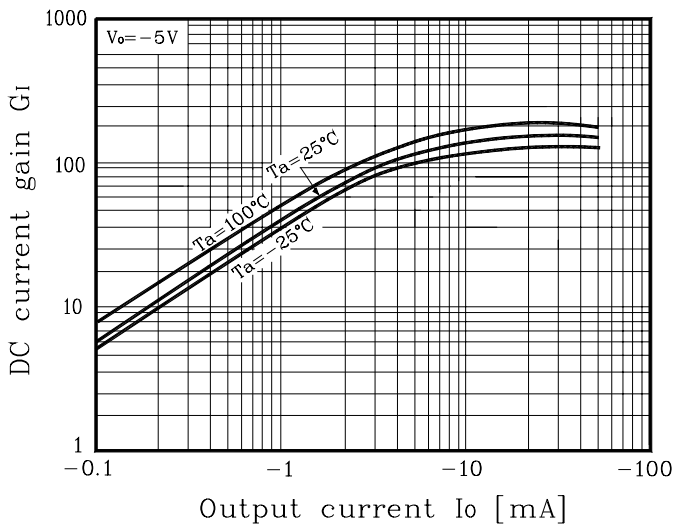


Fig. 3  $G_I - I_O$



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