

# XN01509 (XN1509)

## Silicon NPN epitaxial planar type

For high-frequency amplification

### ■ Features

- Two elements incorporated into one package  
(Emitter-coupled transistors)
- Reduction of the mounting area and assembly cost by one half

### ■ Basic Part Number

- 2SC4561 × 2

### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

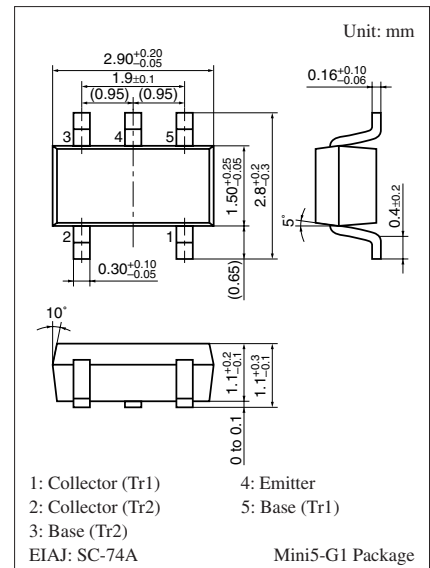
| Parameter                             | Symbol    | Rating      | Unit             |
|---------------------------------------|-----------|-------------|------------------|
| Collector-base voltage (Emitter open) | $V_{CBO}$ | 50          | V                |
| Collector-emitter voltage (Base open) | $V_{CEO}$ | 50          | V                |
| Emitter-base voltage (Collector open) | $V_{EBO}$ | 5           | V                |
| Collector current                     | $I_C$     | 50          | mA               |
| Total power dissipation               | $P_T$     | 200         | mW               |
| Junction temperature                  | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature                   | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter   | Symbol  | Conditions  | Min  | Typ  | Max  | Unit          |
|---|---|---|------|------|------|---------------|
| Collector-base voltage (Emitter open)                               | $V_{CBO}$                                     | $I_C = 10 \mu\text{A}, I_E = 0$                                   | 50   |      |      | V             |
| Collector-emitter voltage (Base open)                               | $V_{CEO}$                                     | $I_C = 1 \text{ mA}, I_B = 0$                                     | 50   |      |      | V             |
| Emitter-base voltage (Collector open)                               | $V_{EBO}$                                     | $I_E = 10 \mu\text{A}, I_C = 0$                                   | 5    |      |      | V             |
| Collector-base cutoff current (Emitter open)                        | $I_{CBO}$                                     | $V_{CB} = 10 \text{ V}, I_E = 0$                                  |      |      | 0.1  | $\mu\text{A}$ |
| Collector-emitter cutoff current (Base open)                        | $I_{CEO}$                                     | $V_{CE} = 10 \text{ V}, I_B = 0$                                  |      |      | 100  | $\mu\text{A}$ |
| Forward current transfer ratio                                      | $h_{FE}$                                      | $V_{CE} = 10 \text{ V}, I_C = 2 \text{ mA}$                       | 200  |      | 500  | —             |
| $h_{FE}$ ratio *  | $h_{FE(\text{Small})}$<br>$/L_{\text{Large}}$ | $V_{CE} = 10 \text{ V}, I_C = 2 \text{ mA}$                       | 0.50 | 0.99 |      | —             |
| Collector-emitter saturation voltage                                | $V_{CE(\text{sat})}$                          | $I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$                         |      | 0.06 | 0.30 | V             |
| Transition frequency  | $f_T$   | $V_{CB} = 10 \text{ V}, I_E = -2 \text{ mA}, f = 200 \text{ MHz}$ |      | 250  |      | MHz           |
| Collector output capacitance<br>(Common base, input open circuited) | $C_{ob}$                                      | $V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$               |      | 1.5  |      | pF            |

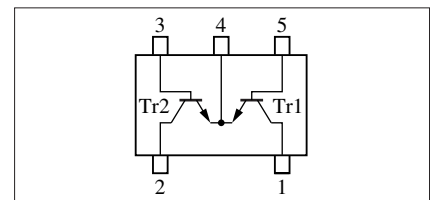
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*: Ratio between 2 elements

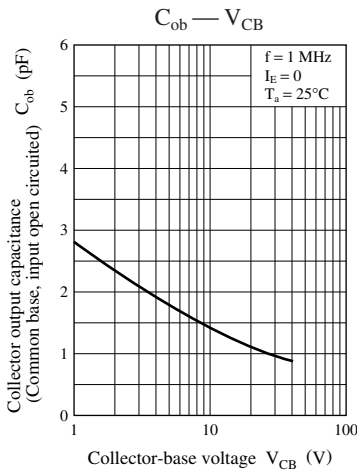
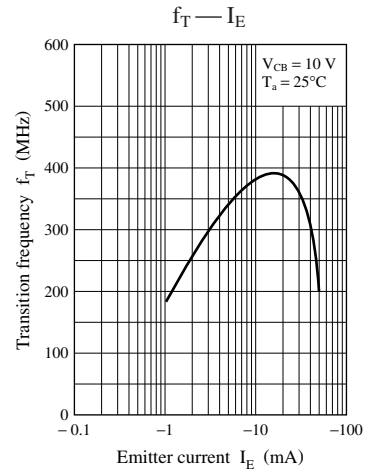
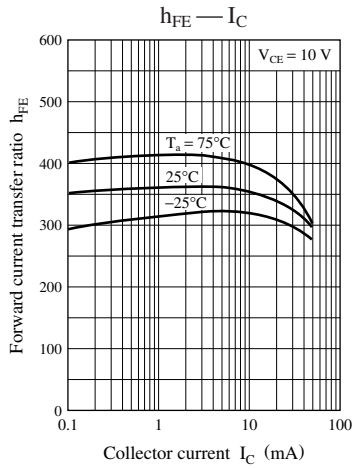
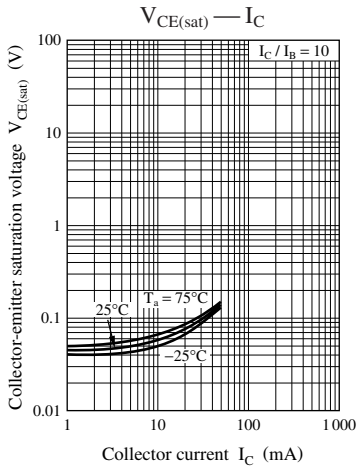
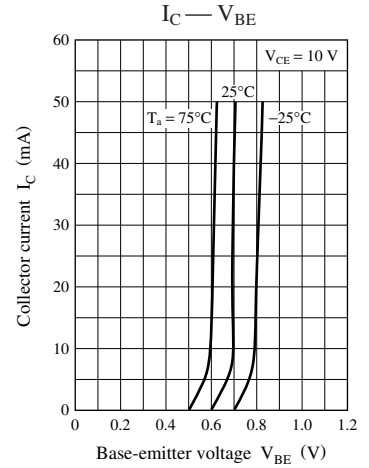
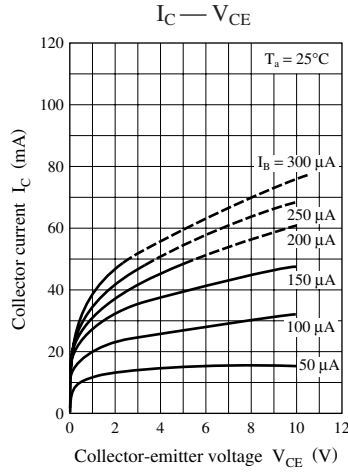
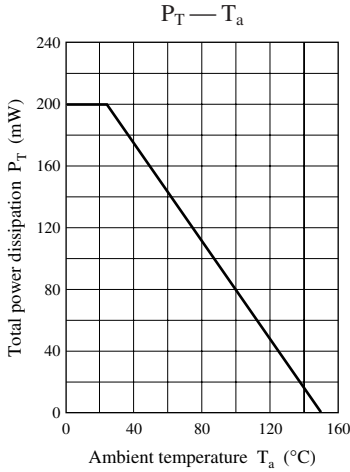


Marking Symbol: AN

Internal Connection



Note) The part number in the parenthesis shows conventional part number.



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