

# XN02501 (XN2501)

## Silicon NPN epitaxial planar type

For general amplification

### ■ Features

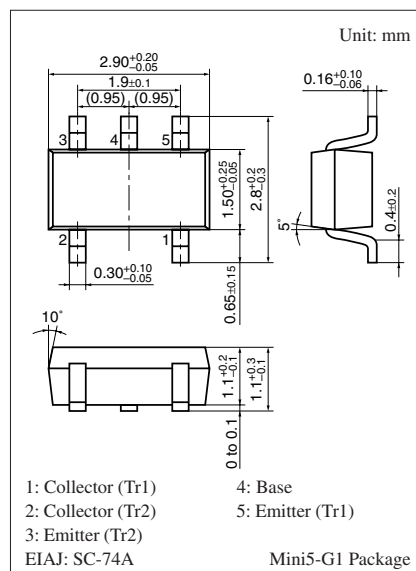
- Two elements incorporated into one package  
(Base-coupled transistors)
- Reduction of the mounting area and assembly cost by one half

### ■ Basic Part Number

- 2SD0601A (2SD601A) × 2

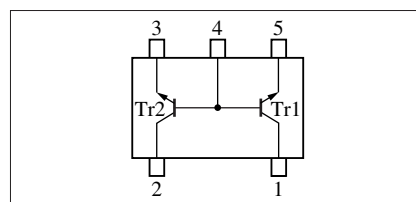
### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter                             | Symbol    | Rating      | Unit             |
|---------------------------------------|-----------|-------------|------------------|
| Collector-base voltage (Emitter open) | $V_{CBO}$ | 60          | V                |
| Collector-emitter voltage (Base open) | $V_{CEO}$ | 50          | V                |
| Emitter-base voltage (Collector open) | $V_{EBO}$ | 7           | V                |
| Collector current                     | $I_C$     | 100         | mA               |
| Peak collector current                | $I_{CP}$  | 200         | mA               |
| Total power dissipation               | $P_T$     | 300         | mW               |
| Junction temperature                  | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature                   | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |



Marking Symbol: 5W

Internal Connection



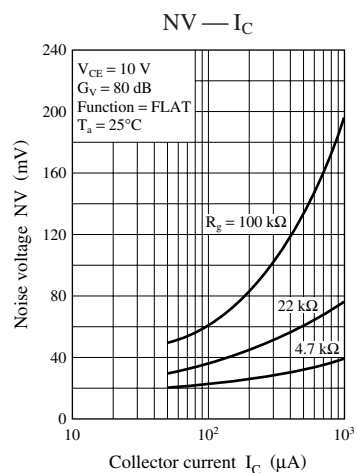
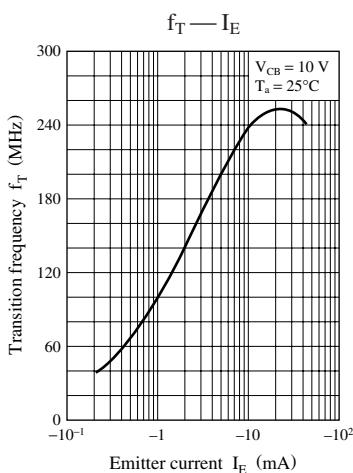
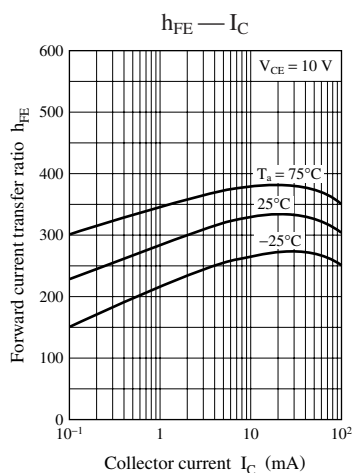
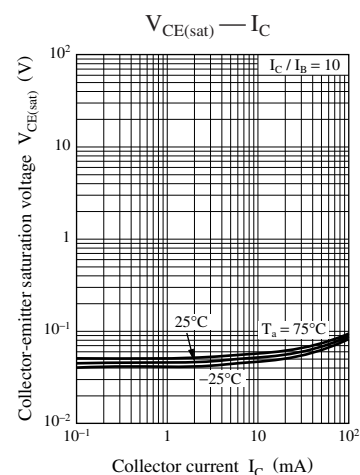
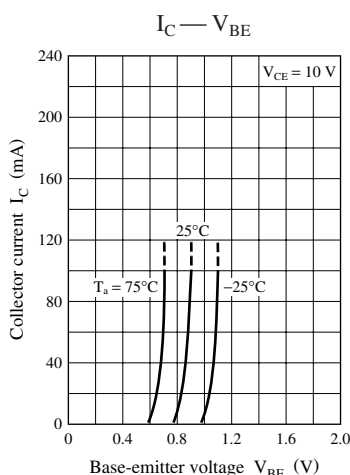
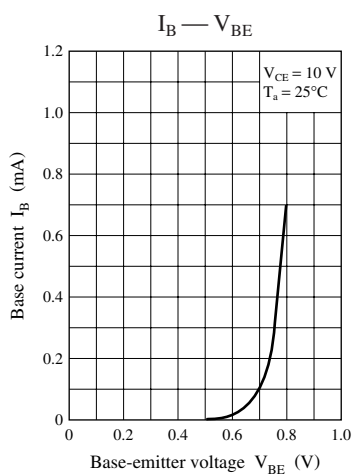
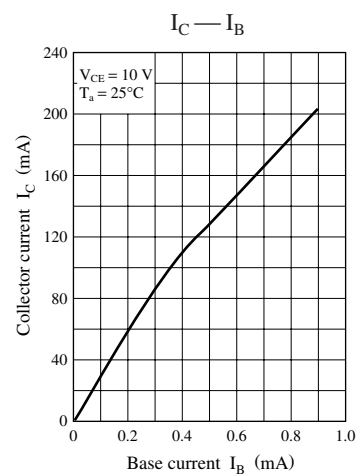
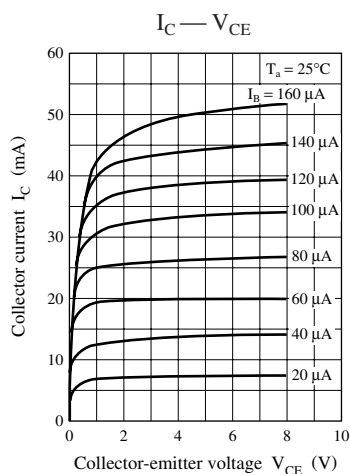
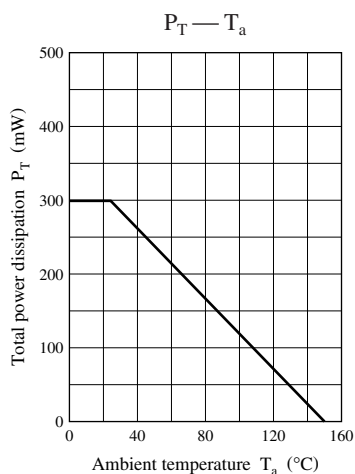
### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter                                                           | Symbol                       | Conditions                                                              | Min  | Typ  | Max | Unit          |
|---------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------|------|------|-----|---------------|
| Collector-base voltage (Emitter open)                               | $V_{CBO}$                    | $I_C = 10 \mu\text{A}$ , $I_E = 0$                                      | 60   |      |     | V             |
| Collector-emitter voltage (Base open)                               | $V_{CEO}$                    | $I_C = 2 \text{ mA}$ , $I_B = 0$                                        | 50   |      |     | V             |
| Emitter-base voltage (Collector open)                               | $V_{EBO}$                    | $I_E = 10 \mu\text{A}$ , $I_C = 0$                                      | 7    |      |     | V             |
| Collector-base cutoff current (Emitter open)                        | $I_{CBO}$                    | $V_{CB} = 20 \text{ V}$ , $I_E = 0$                                     |      |      | 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                                      | $h_{FE}$                     | $V_{CE} = 10 \text{ V}$ , $I_C = 2 \text{ mA}$                          | 160  |      | 460 | —             |
| $h_{FE}$ ratio *                                                    | $h_{FE(\text{Small/Large})}$ | $V_{CE} = 10 \text{ V}$ , $I_C = 2 \text{ mA}$                          | 0.50 | 0.99 |     | —             |
| Collector-emitter saturation voltage                                | $V_{CE(\text{sat})}$         | $I_C = 100 \text{ mA}$ , $I_B = 10 \text{ mA}$                          |      | 0.1  | 0.3 | V             |
| Transition frequency                                                | $f_T$                        | $V_{CB} = 10 \text{ V}$ , $I_E = -2 \text{ mA}$ , $f = 200 \text{ MHz}$ |      | 150  |     | MHz           |
| Collector output capacitance<br>(Common base, input open circuited) | $C_{ob}$                     | $V_{CB} = 10 \text{ V}$ , $I_E = 0$ , $f = 1 \text{ MHz}$               |      | 3.5  |     | pF            |

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

2. \*: Ratio between 2 elements

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



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