

# XN05501 (XN5501)

## Silicon NPN epitaxial planer transistor

For general amplification

### ■ Features

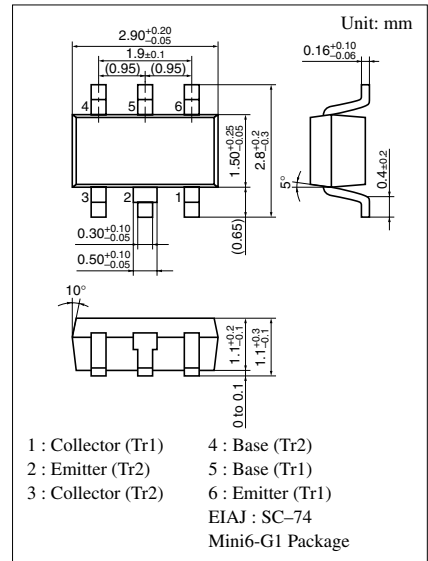
- Two elements incorporated into one package.
- Reduction of the mounting area and assembly cost by one half.

### ■ Basic Part Number of Element

- 2SD0601A(2SD601A) × 2 elements

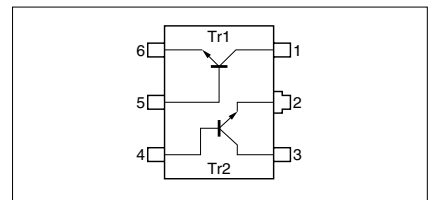
### ■ Absolute Maximum Ratings (Ta=25°C)

|                   | Parameter                    | Symbol    | Ratings     | Unit |
|-------------------|------------------------------|-----------|-------------|------|
| Rating of element | Collector to base voltage    | $V_{CBO}$ | 60          | V    |
|                   | Collector to emitter voltage | $V_{CEO}$ | 50          | V    |
|                   | Emitter to base voltage      | $V_{EBO}$ | 7           | V    |
|                   | Collector current            | $I_C$     | 100         | mA   |
|                   | Peak collector current       | $I_{CP}$  | 200         | mA   |
| Overall           | Total power dissipation      | $P_T$     | 300         | mW   |
|                   | Junction temperature         | $T_j$     | 150         | °C   |
|                   | Storage temperature          | $T_{stg}$ | -55 to +150 | °C   |



Marking Symbol: 5L

Internal Connection



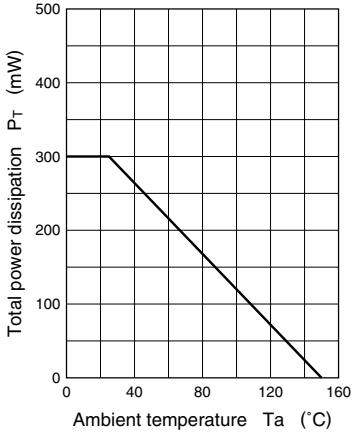
### ■ Electrical Characteristics (Ta=25°C)

| Parameter                               | Symbol                      | Conditions                             | min | typ  | max | Unit    |
|---|-----------------------------|--|-----|------|-----|---------|
| Collector to base voltage               | $V_{CBO}$                   | $I_C = 10\mu A, I_E = 0$               | 60  |      |     | V       |
| Collector to emitter voltage            | $V_{CEO}$                   | $I_C = 2mA, I_B = 0$                   | 50  |      |     | V       |
| Emitter to base voltage                 | $V_{EBO}$                   | $I_E = 10\mu A, I_C = 0$               | 7   |      |     | V       |
| Collector cutoff current                | $I_{CBO}$                   | $V_{CB} = 20V, I_E = 0$                |     |      | 0.1 | $\mu A$ |
|   | $I_{CEO}$                   | $V_{CE} = 10V, I_B = 0$                |     |      | 100 | $\mu A$ |
| Forward current transfer ratio          | $h_{FE}$                    | $V_{CE} = 10V, I_C = 2mA$              | 160 |      | 460 |         |
| Forward current transfer $h_{FE}$ ratio | $h_{FE} (small/large)^{*1}$ | $V_{CE} = 10V, I_C = 2mA$              | 0.5 | 0.99 |     |         |
| Collector to emitter saturation voltage | $V_{CE(sat)}$               | $I_C = 100mA, I_B = 10mA$              |     | 0.1  | 0.3 | V       |
| Transition frequency                    | $f_T$                       | $V_{CB} = 10V, I_E = -2mA, f = 200MHz$ |     | 150  |     | MHz     |
| Collector output capacitance            | $C_{ob}$                    | $V_{CB} = 10V, I_E = 0, f = 1MHz$      |     | 3.5  |     | pF      |

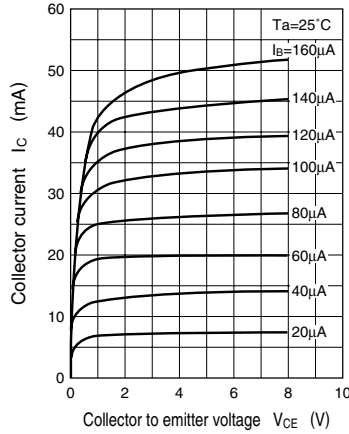
\*1 Ratio between 2 elements

Note) The Part number in the Parenthesis shows conventional part number.

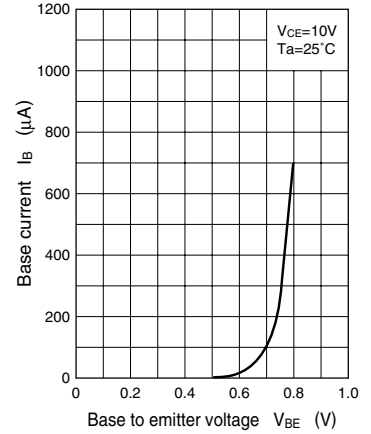
$P_T - T_a$



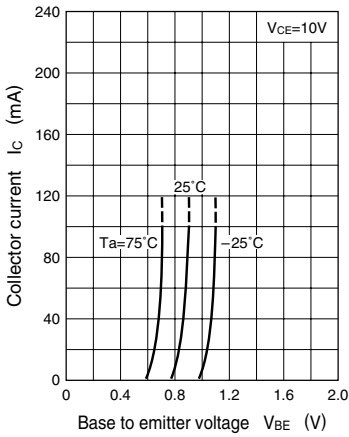
$I_C - V_{CE}$



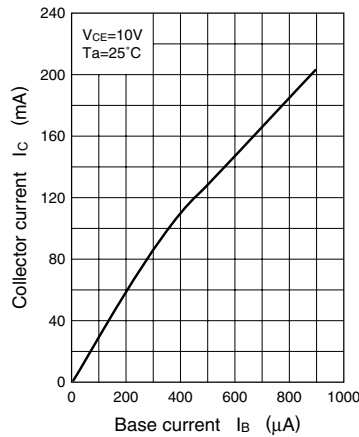
$I_B - V_{BE}$



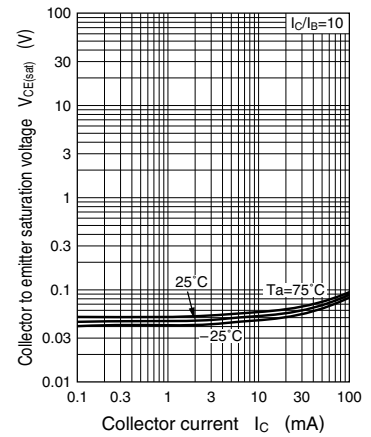
$I_C - V_{BE}$



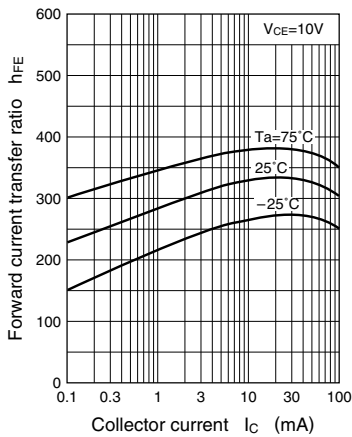
$I_C - I_B$



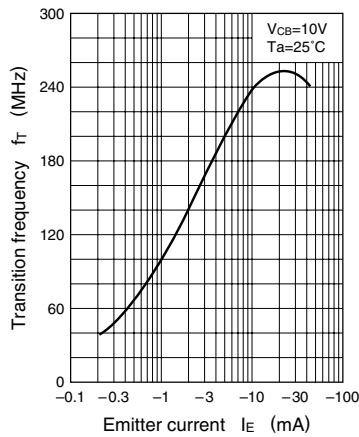
$V_{CE(sat)} - I_C$



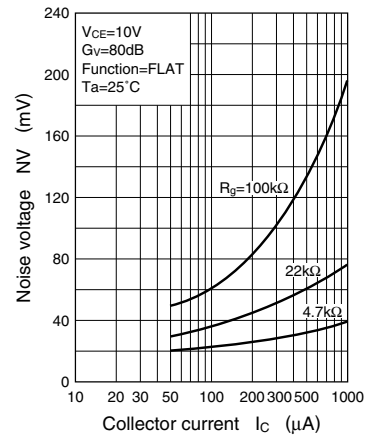
$h_{FE} - I_C$



$f_T - I_E$



$NV - I_C$



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