# XP01501 (XP1501)

### Silicon NPN epitaxial planer transistor

#### For general amplification

#### Features

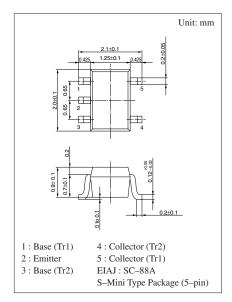
- Two elements incorporated into one package. (Emitter-coupled transistors)
- Reduction of the mounting area and assembly cost by one half.

#### Basic Part Number of Element

•  $2SD0601A(2SD601A) \times 2$  elements

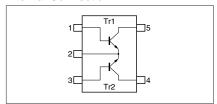
#### Absolute Maximum Ratings (Ta=25°C)

| Parameter               |                              | Symbol    | Ratings     | Unit |  |
|-------------------------|------------------------------|-----------|-------------|------|--|
| Rating<br>of<br>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      | $P_{T}$   | 150         | mW   |  |
|                         | Junction temperature         | $T_{j}$   | 150         | °C   |  |
|                         | Storage temperature          | $T_{stg}$ | -55 to +150 | °C   |  |



#### Marking Symbol: 5R

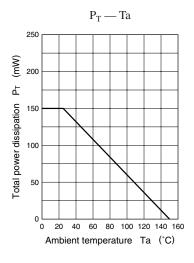
#### Internal Connection

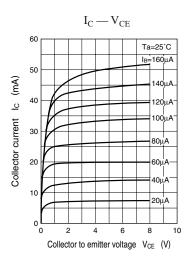


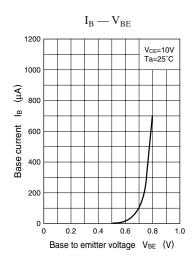
#### Electrical Characteristics (Ta=25°C)

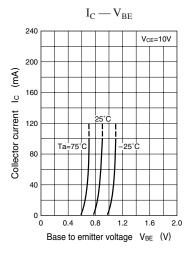
| Parameter                                      | Symbol                          | Conditions                                | min | typ  | max | Unit |
|--|---------------------------------|---|-----|------|-----|------|
| Collector to base voltage                      | V <sub>CBO</sub>         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

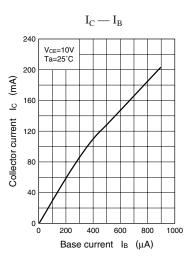
<sup>\*1</sup> Ratio between 2 elements

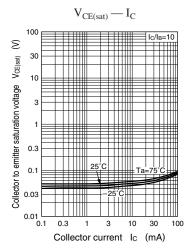


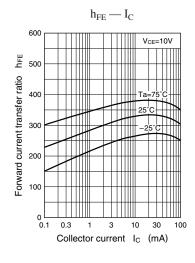


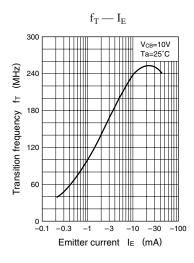


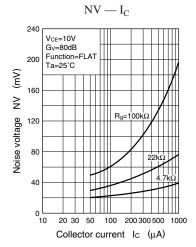












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