

# XN01504 (XN1504)

## Silicon NPN epitaxial planer transistor

For amplification of low frequency output

### Features

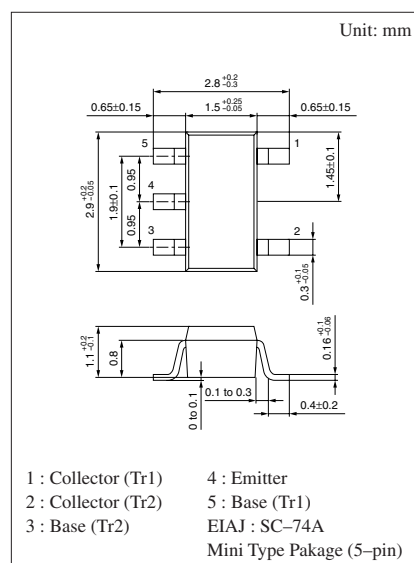
- Two elements incorporated into one package.  
(Emitter-coupled transistors)
- Reduction of the mounting area and assembly cost by one half.

### Basic Part Number of Element

- 2SD1915F × 2 elements

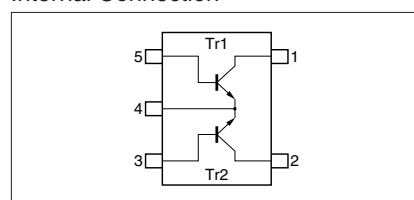
### Absolute Maximum Ratings (Ta=25°C)

| Parameter         | Symbol                       | Ratings   | Unit           |
|-------------------|------------------------------|-----------|----------------|
| Rating of element | Collector to base voltage    | $V_{CBO}$ | 50 V           |
|                   | Collector to emitter voltage | $V_{CEO}$ | 20 V           |
|                   | Emitter to base voltage      | $V_{EBO}$ | 25 V           |
|                   | Collector current            | $I_C$     | 300 mA         |
|                   | Peak collector current       | $I_{CP}$  | 500 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: 5S

Internal Connection

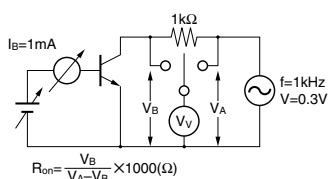


### Electrical Characteristics (Ta=25°C)

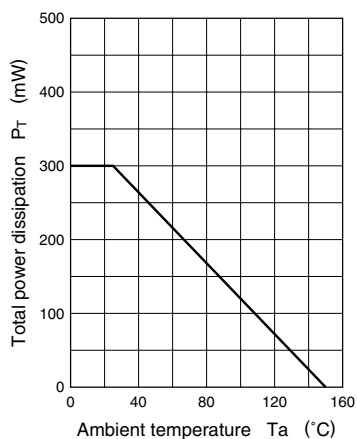
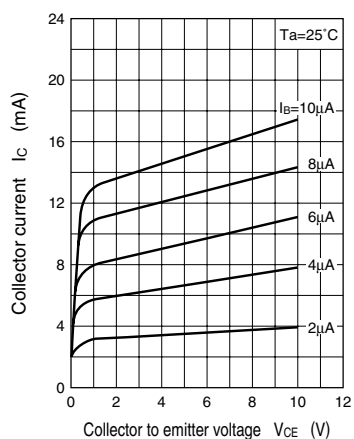
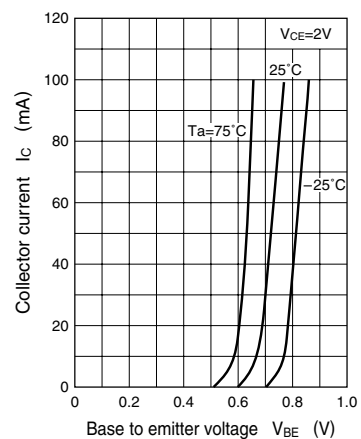
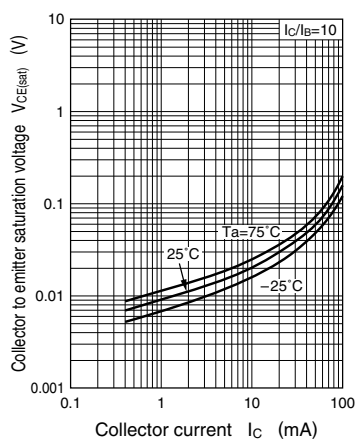
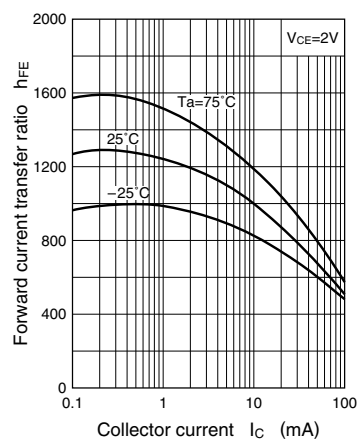
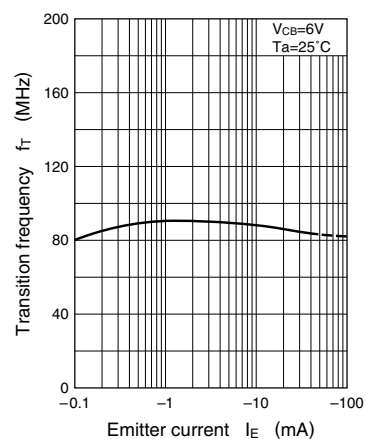
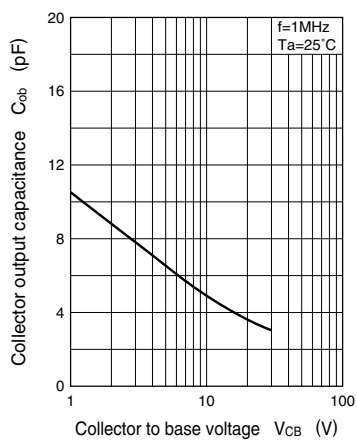
| Parameter                               | Symbol                            | Conditions                                                       | min | typ  | max  | Unit          |
|-----------------------------------------|-----------------------------------|------------------------------------------------------------------|-----|------|------|---------------|
| Collector to emitter voltage            | $V_{CEO}$                         | $I_C = 1\text{mA}$ , $I_B = 0$                                   | 20  |      |      | V             |
| Collector cutoff current                | $I_{CBO}$                         | $V_{CB} = 50\text{V}$ , $I_E = 0$                                |     |      | 0.1  | $\mu\text{A}$ |
| Emitter cutoff current                  | $I_{EBO}$                         | $V_{EB} = 25\text{V}$ , $I_C = 0$                                |     |      | 0.1  | $\mu\text{A}$ |
| Forward current transfer ratio          | $h_{FE}$                          | $V_{CE} = 2\text{V}$ , $I_C = 4\text{mA}$                        | 500 |      | 2500 |               |
| Forward current transfer $h_{FE}$ ratio | $h_{FE}(\text{small/large})^{*1}$ | $V_{CE} = 2\text{V}$ , $I_C = 4\text{mA}$                        | 0.5 | 0.99 |      |               |
| Collector to emitter saturation voltage | $V_{CE(\text{sat})}$              | $I_C = 30\text{mA}$ , $I_B = 3\text{mA}$                         |     |      | 0.1  | V             |
| Base to emitter voltage                 | $V_{BE}$                          | $V_{CE} = 2\text{V}$ , $I_C = 4\text{mA}$                        |     | 0.6  |      | V             |
| Transition frequency                    | $f_T$                             | $V_{CB} = 6\text{V}$ , $I_E = -4\text{mA}$ , $f = 200\text{MHz}$ |     | 80   |      | MHz           |
| Collector output capacitance            | $C_{ob}$                          | $V_{CB} = 10\text{V}$ , $I_E = 0$ , $f = 1\text{MHz}$            |     |      | 7    | pF            |
| ON Resistance                           | $R_{on}^{*2}$                     |                                                                  |     | 1.0  |      | $\Omega$      |

\*1 Ratio between 2 elements

\*2  $R_{on}$  test circuit



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

$P_T - T_a$  $I_C - V_{CE}$  $I_C - V_{BE}$  $V_{CE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_E$  $C_{ob} - V_{CB}$ 

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