

XN1501

Silicon NPN epitaxial planer transistor

For general amplification

Features

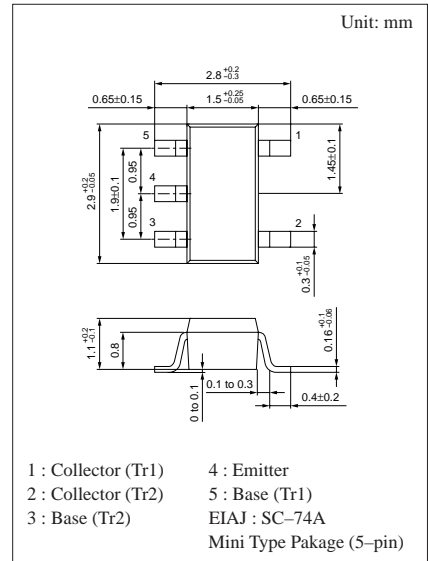
- Two elements incorporated into one package.
(Emitter-coupled transistors)
- Reduction of the mounting area and assembly cost by one half.

Basic Part Number of Element

- 2SD601A × 2 elements

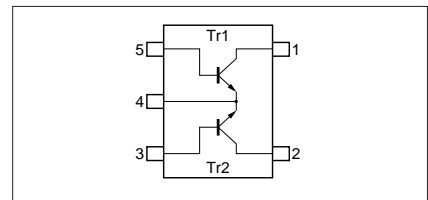
Absolute Maximum Ratings (Ta=25°C)

| | Parameter | Symbol | Rated | 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_{sig} | -55 to +150 | °C |



Marking Symbol: 5R

Internal Connection

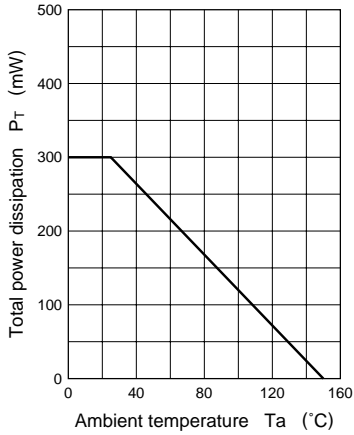


Electrical Characteristics (Ta=25°C)

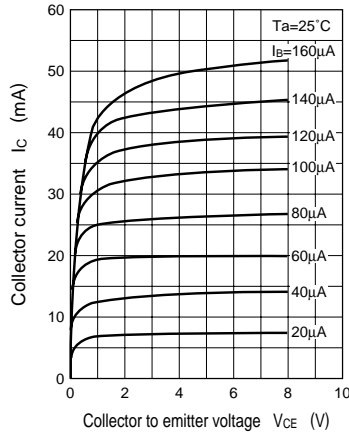
| Parameter | Symbol | Conditions | min | typ | max | Unit |
|---|-----------------------------------|--|-----|------|-----|---------|
| Collector to base voltage | V_{CBO} | $I_C = 10\mu A, I_E = 0$ | 60 | | | V |
| Collector to emitter voltage | V_{CEO} | $I_C = 2mA, I_B = 0$ | 50 | | | V |
| Emitter 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 | μA |
| | I_{CEO} | $V_{CE} = 10V, I_B = 0$ | | | 100 | μA |
| Forward current transfer ratio | h_{FE} | $V_{CE} = 10V, I_C = 2mA$ | 160 | | 460 | |
| Forward current transfer h_{FE} ratio | $h_{FE}(\text{small/large})^{*1}$ | $V_{CE} = 10V, I_C = 2mA$ | 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

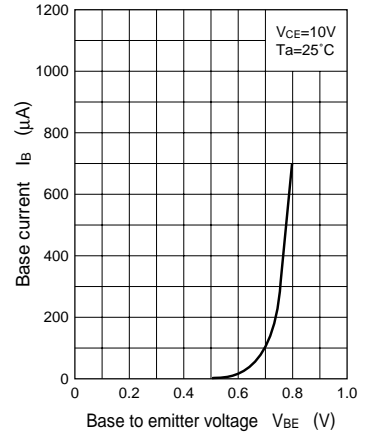
$P_T - T_a$



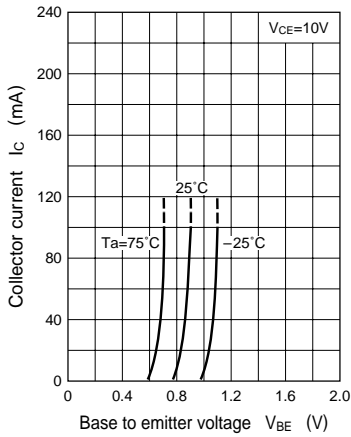
$I_C - V_{CE}$



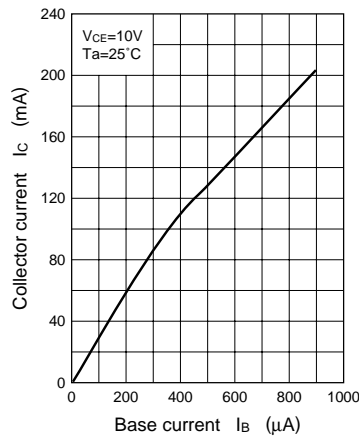
$I_B - V_{BE}$



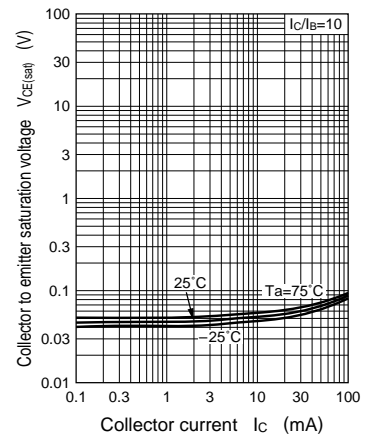
$I_C - V_{BE}$



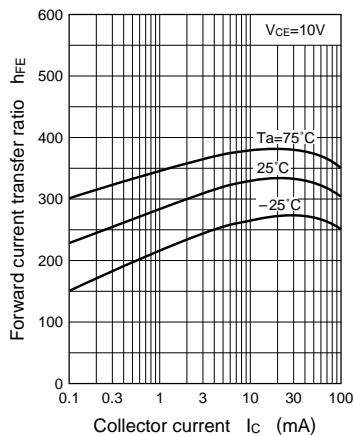
$I_C - I_B$



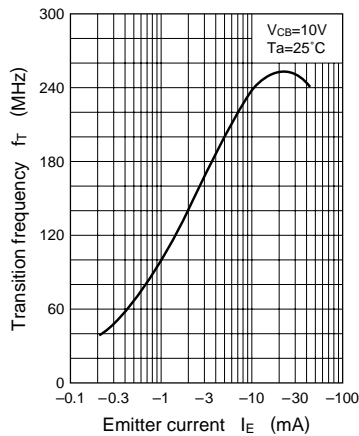
$V_{CE(sat)} - I_C$



$h_{FE} - I_C$



$f_T - I_E$



$NV - I_C$

