

XN4604

Silicon NPN epitaxial planer transistor (Tr1)
 Silicon PNP epitaxial planer transistor (Tr2)

For amplification of low frequency output

■ Features

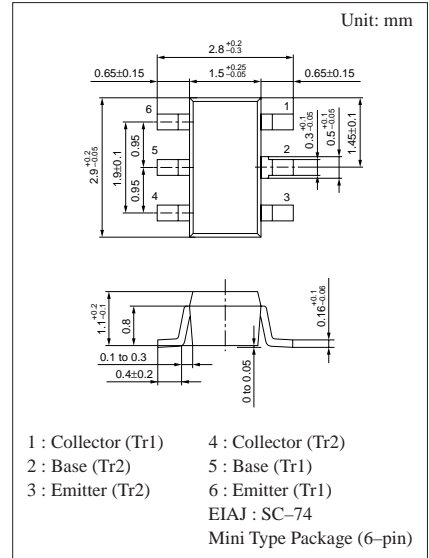
- Two elements incorporated into one package.
- Reduction of the mounting area and assembly cost by one half.

■ Basic Part Number of Element

- 2SD1328+2SB970

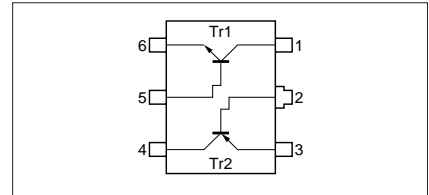
■ Absolute Maximum Ratings (Ta=25°C)

| | Parameter | Symbol | Ratings | Unit |
|---------|------------------------------|-----------|-------------|------|
| Tr1 | Collector to base voltage | V_{CBO} | 25 | V |
| | Collector to emitter voltage | V_{CEO} | 20 | V |
| | Emitter to base voltage | V_{EBO} | 12 | V |
| | Collector current | I_C | 0.5 | A |
| | Peak collector current | I_{CP} | 1 | A |
| Tr2 | Collector to base voltage | V_{CBO} | -15 | V |
| | Collector to emitter voltage | V_{CEO} | -10 | V |
| | Emitter to base voltage | V_{EBO} | -7 | V |
| | Collector current | I_C | -0.5 | A |
| | Peak collector current | I_{CP} | -1 | A |
| Overall | Total power dissipation | P_T | 300 | mW |
| | Junction temperature | T_j | 150 | °C |
| | Storage temperature | T_{sig} | -55 to +150 | °C |



Marking Symbol: 5I

Internal Connection



■ Electrical Characteristics (Ta=25°C)

● Tr1

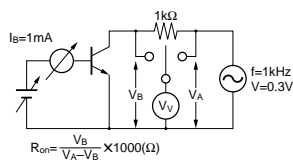
| Parameter | Symbol | Conditions | min | typ | max | Unit |
|---|-------------------------------|---|-----|------|-----|------|
| Collector to base voltage | V _{CBO} | I _C = 10μA, I _E = 0 | 25 | | | V |
| Collector to emitter voltage | V _{CEO} | I _C = 1mA, I _B = 0 | 20 | | | V |
| Emitter to base voltage | V _{EBO} | I _E = 10μA, I _C = 0 | 12 | | | V |
| Collector cutoff current | I _{CBO} | V _{CB} = 25V, I _E = 0 | | | 0.1 | μA |
| Forward current transfer ratio | h _{FE1} | V _{CE} = 2V, I _C = 0.5A ^{*1} | 200 | | 800 | |
| | h _{FE2} | V _{CE} = 2V, I _C = 1A ^{*1} | 60 | | | |
| Collector to emitter saturation voltage | V _{CE(sat)} | I _C = 0.5A, I _B = 20mA | | 0.13 | 0.4 | V |
| Base to emitter saturation voltage | V _{BE(sat)} | I _C = 0.5A, I _B = 20mA | | | 1.2 | V |
| Transition frequency | f _T | V _{CB} = 10V, I _E = -50mA, f = 200MHz | | 200 | | MHz |
| Collector output capacitance | C _{ob} | V _{CB} = 10V, I _E = 0, f = 1MHz | | 10 | | pF |
| ON Resistance | R _{on} ^{*2} | | | 1.0 | | Ω |

● Tr2

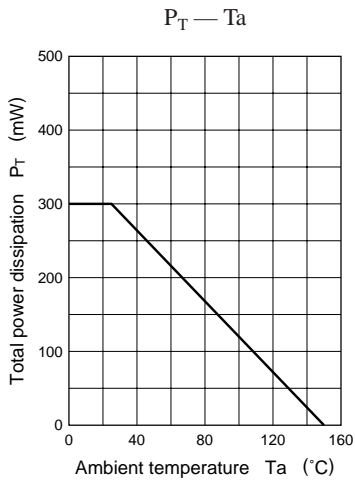
| Parameter | Symbol | Conditions | min | typ | max | Unit |
|---|----------------------|---|-----|-------|------|------|
| Collector to base voltage | V _{CBO} | I _C = -10μA, I _E = 0 | -15 | | | V |
| Collector to emitter voltage | V _{CEO} | I _C = -1mA, I _B = 0 | -10 | | | V |
| Emitter to base voltage | V _{EBO} | I _E = -10μA, I _C = 0 | -7 | | | V |
| Collector cutoff current | I _{CBO} | V _{CB} = -10V, I _E = 0 | | | -0.1 | μA |
| Forward current transfer ratio | h _{FE1} | V _{CE} = -2V, I _C = -0.5A ^{*1} | 100 | | 350 | |
| | h _{FE2} | V _{CE} = -2V, I _C = -1A ^{*1} | 60 | | | |
| Collector to emitter saturation voltage | V _{CE(sat)} | I _C = -0.4A, I _B = -8mA | | -0.16 | -0.3 | V |
| Base to emitter saturation voltage | V _{BE(sat)} | I _C = -0.4A, I _B = -8mA | | -0.8 | -1.2 | V |
| Transition frequency | f _T | V _{CB} = -10V, I _E = 50mA, f = 200MHz | | 130 | | MHz |
| Collector output capacitance | C _{ob} | V _{CB} = -10V, I _E = 0, f = 1MHz | | 22 | | pF |

*1 Pulse measurement

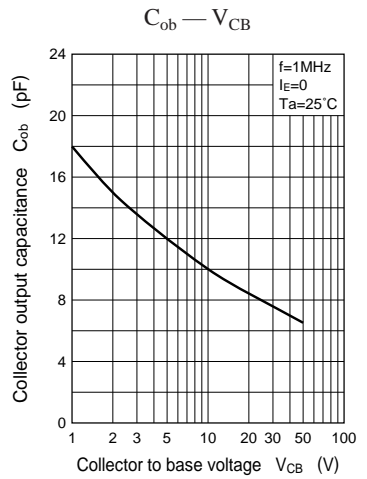
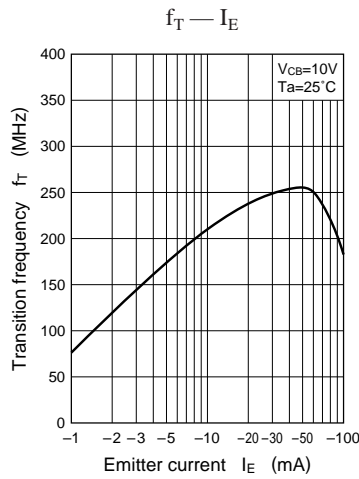
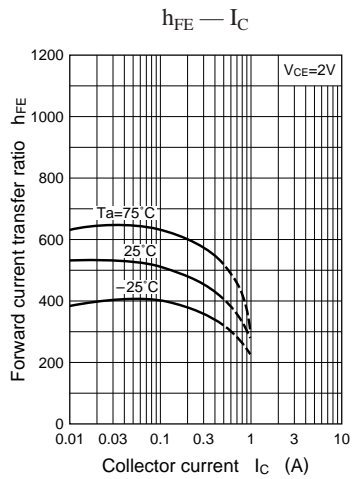
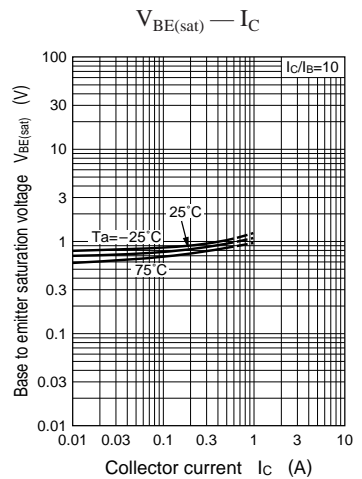
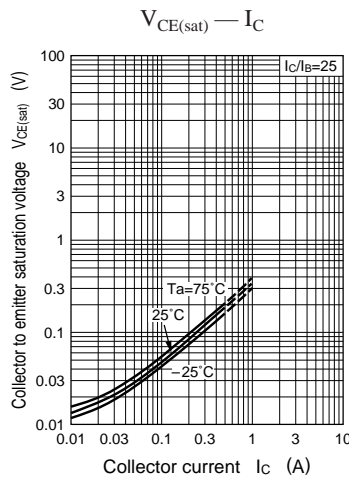
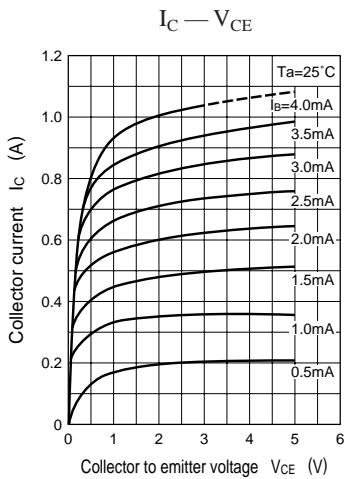
*2 R_{on} test circuit



Common characteristics chart



Characteristics charts of Tr1



Characteristics charts of Tr2

