

XP1C301

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

For general amplification

Features

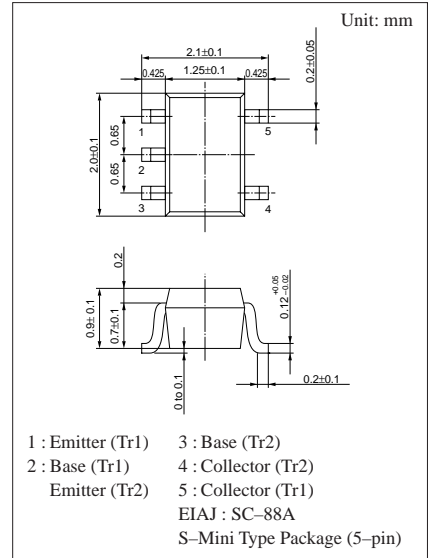
- Two elements incorporated into one package.
 (Tr1 base is connected to Tr2 emitter.)
- Reduction of the mounting area and assembly cost by one half.

Basic Part Number of Element

- 2SB709A+2SD601A

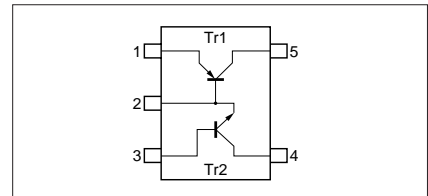
Absolute Maximum Ratings (Ta=25°C)

| | Parameter | Symbol | Rated | Unit |
|---------|------------------------------|-----------|-------------|------|
| Tr1 | 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 |
| Tr2 | 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_{sig} | -55 to +150 | °C |



Marking Symbol: 4R

Internal Connection



■ Electrical Characteristics (T_a=25°C)

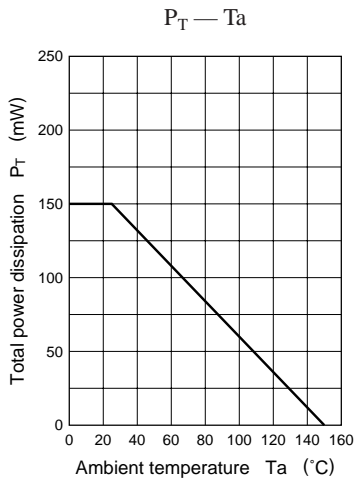
● Tr1

| Parameter | Symbol | Conditions | min | typ | max | Unit |
|---|----------------------|--|-----|------|------|------|
| Collector to base voltage | V _{CBO} | I _C = -10μA, 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 = -10μA, 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 | |
| Collector to emitter saturation voltage | V _{CE(sat)} | I _C = -100mA, I _B = -10mA | | -0.3 | -0.5 | V |
| Transition frequency | f _T | V _{CB} = -10V, I _E = 1mA, f = 200MHz | | 80 | | MHz |
| Collector output capacitance | C _{ob} | V _{CB} = -10V, I _E = 0, f = 1MHz | | 2.7 | | pF |

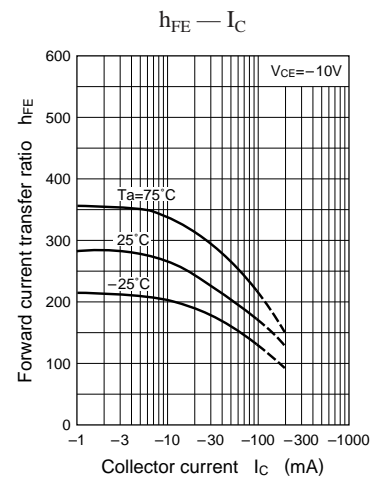
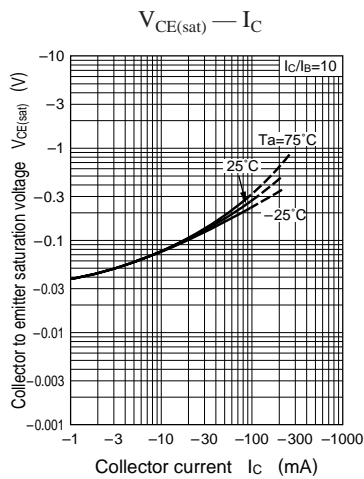
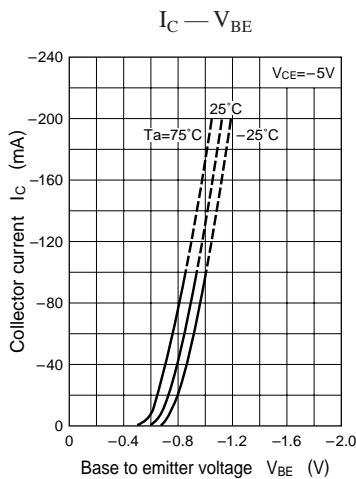
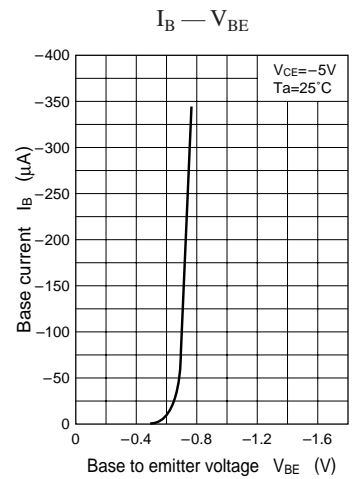
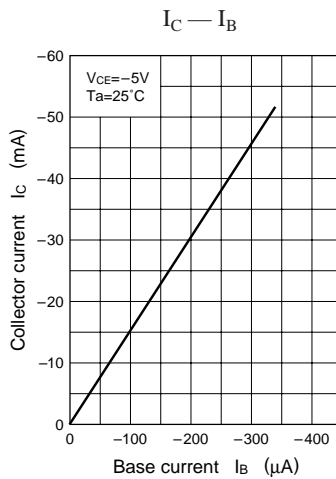
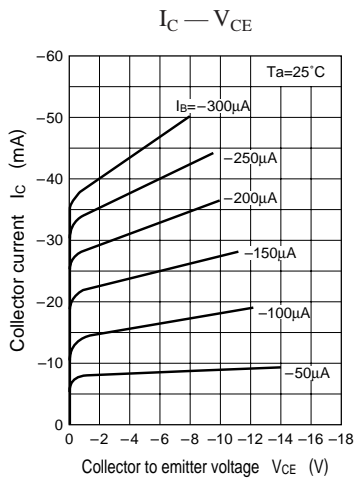
● Tr2

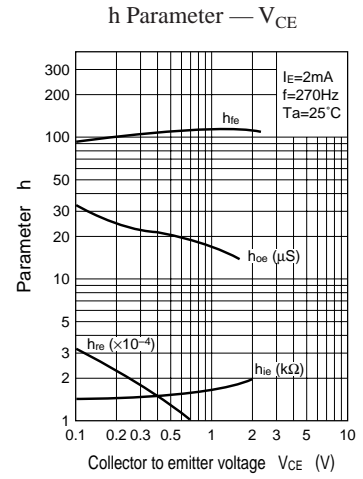
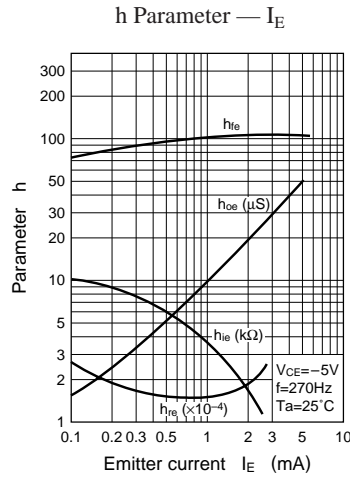
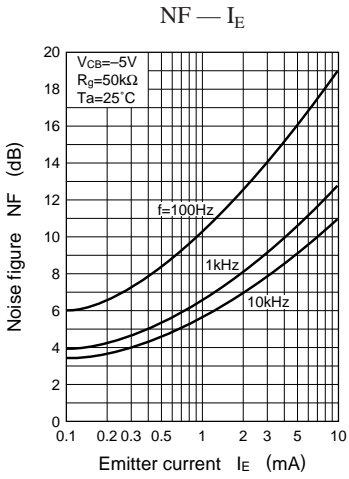
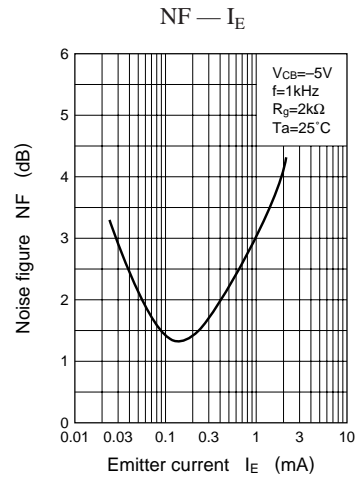
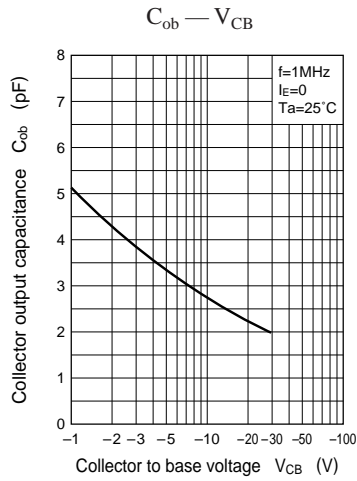
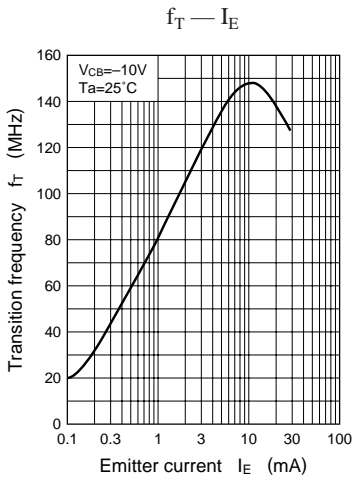
| Parameter | Symbol | Conditions | min | typ | max | Unit |
|---|----------------------|--|-----|-----|-----|------|
| Collector to base voltage | V _{CBO} | I _C = 10μA, I _E = 0 | 60 | | | V |
| Collector to emitter voltage | V _{CEO} | I _C = 2mA, I _B = 0 | 50 | | | V |
| Emitter to base voltage | V _{EBO} | I _E = 10μA, 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 | |
| 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 |

Common characteristics chart

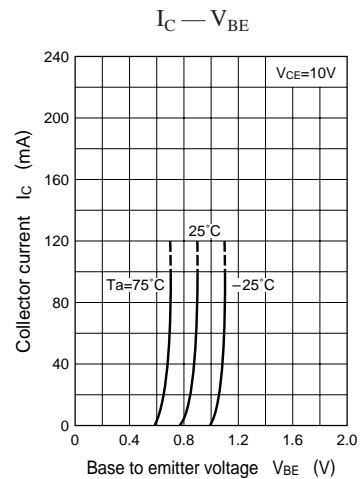
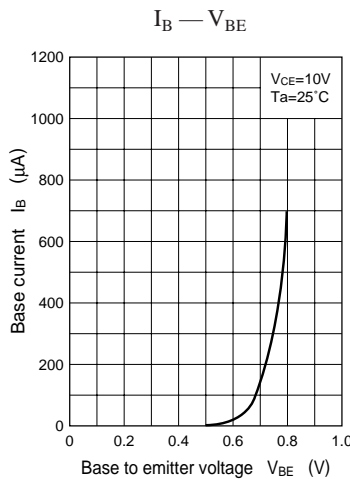
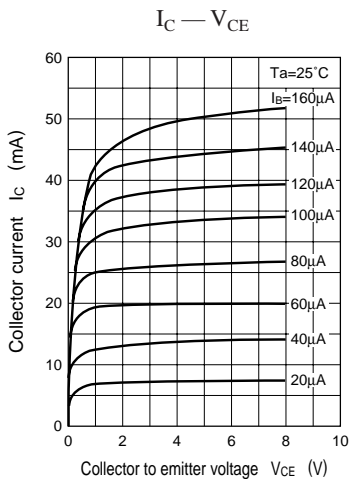


Characteristics charts of Tr1

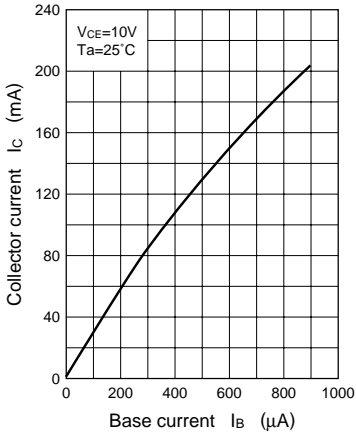




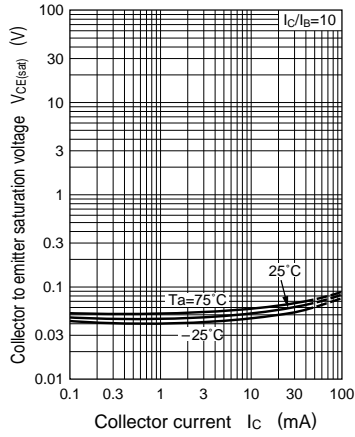
Characteristics charts of Tr2



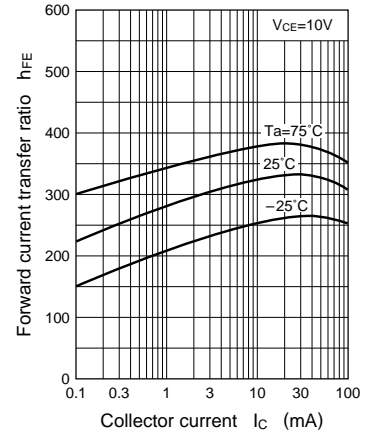
$I_C - I_B$



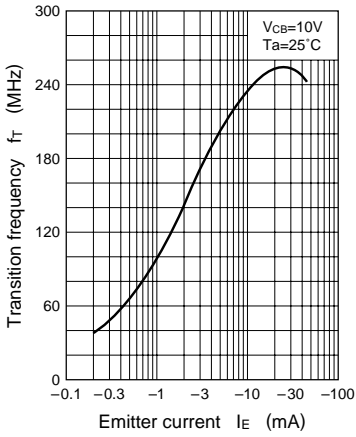
$V_{CE(sat)} - I_C$



$h_{FE} - I_C$



$f_T - I_E$



$NV - I_C$

