

DESCRIPTION

2SA1602 is a super mini package resin sealed silicon PNP epitaxial transistor, It is designed for low frequency voltage application.

FEATURE

- Small collector to emitter saturation voltage.
VCE(sat)=-0.3V max
- Excellent linearity of DC forward gain.
- Super mini package for easy mounting

APPLICATION

For Hybrid IC,small type machine low frequency voltage Amplify application.

MAXIMUM RATINGS(Ta=25)

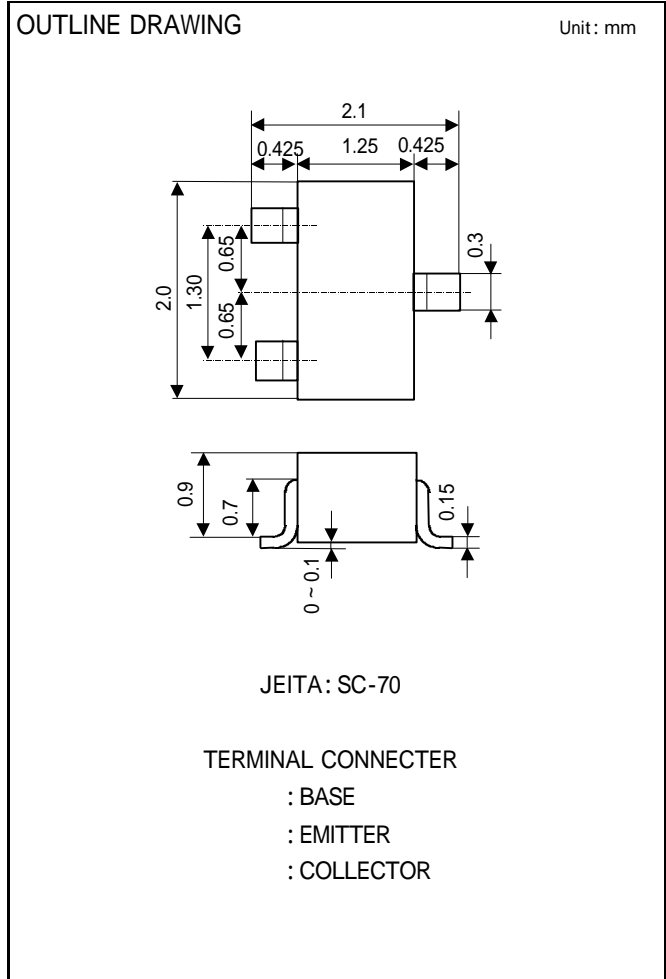
| Symbol | Parameter | Ratings | Unit |
|------------------|------------------------------|-------------|------|
| V _{CBO} | Collector to Base voltage | -50 | V |
| V _{CEO} | Collector to Emitter voltage | -50 | V |
| V _{EBO} | Emitter to Base voltage | -6 | V |
| I _O | Collector current | -200 | mA |
| P _C | Collector dissipation | 150 | mW |
| T _j | Junction temperature | + 125 | |
| T _{stg} | Storage temperature | -55 ~ + 125 | |

ELECTRICAL CHARACTERISTICS(Ta=25)

| Parameter | Symbol | Test conditions | Limits | | | Unit |
|------------------------------|----------------------|--|--------|-----|------|------|
| | | | Min | Typ | Max | |
| C to E break down voltage | V(BR) _{CEO} | I _C =-100 μA, R _{BE} = | -50 | - | - | V |
| Collector cut off current | ICBO | V _{CB} =-50V, I _E =0mA | - | - | -0.1 | μA |
| Emitter cut off current | IEBO | V _{EB} =-6V, I _C =0mA | - | - | -0.1 | μA |
| DC forward current gain | hFE | V _{CE} =-6V, I _C =-1mA | 150 | - | 800 | |
| DC forward current gain | hFE | V _{CE} =-6V, I _C =-0.1mA | 90 | - | - | |
| C to E Saturation Vlotage | VCE(sat) | I _C =-100mA, I _B =-10mA | - | - | -0.3 | V |
| Gain bandwidth product | fT | V _{CE} =-6V, I _E =-10mA | - | 200 | - | MHz |
| Collector output capacitance | Cob | V _{CB} =-6V, I _E =0,f=1MHz | - | 4.0 | - | pF |

) It shows hFE classification in below table.

| Item | E | F | G |
|------------|---------|---------|---------|
| h F E Item | 150-300 | 250-500 | 400-800 |

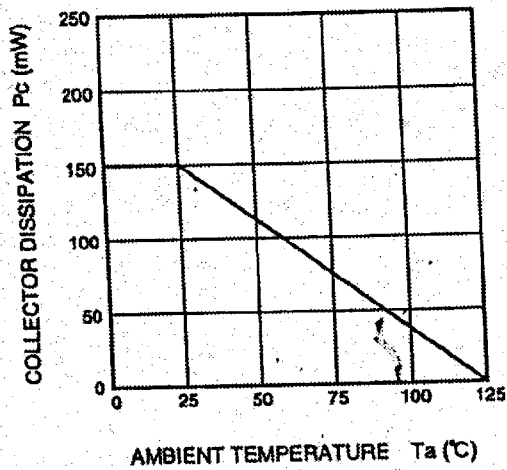


2SA1602

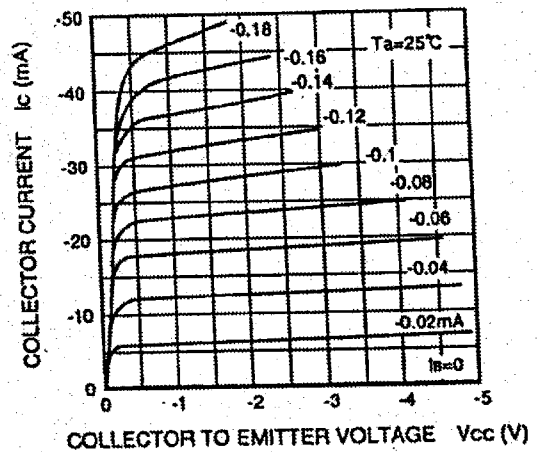
For Low Frequency Amplify Application
Silicon PNP Epitaxial Type (Super Mini type)

TYPICAL CHARACTERISTICS

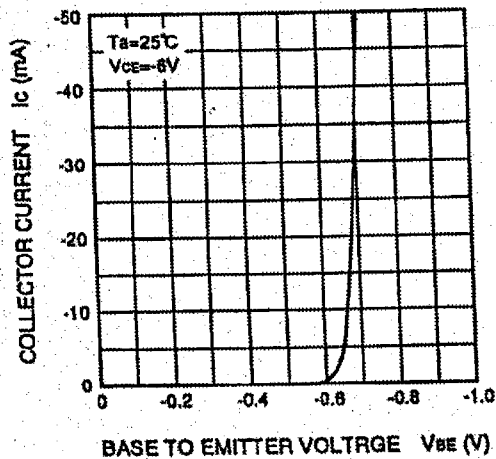
COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE



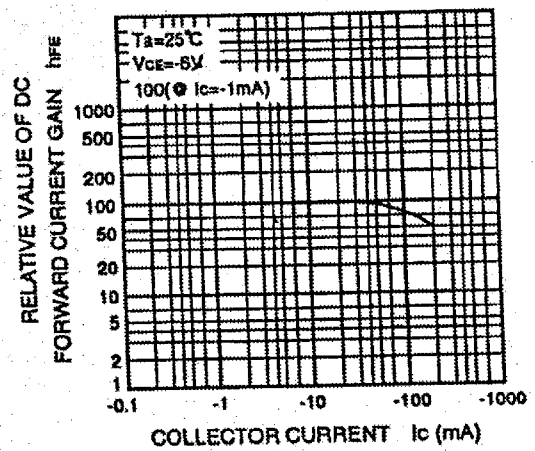
COMMON EMITTER OUTPUT



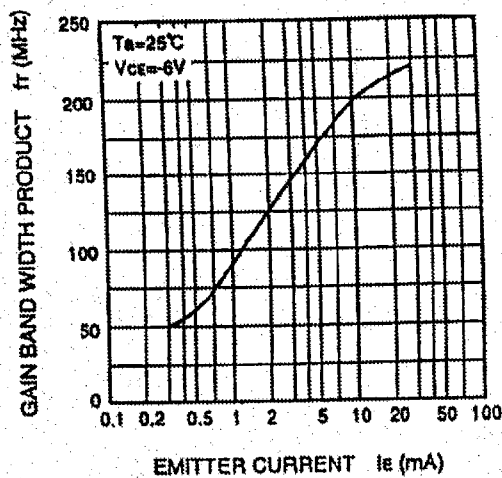
COMMON EMITTER TRANSFER



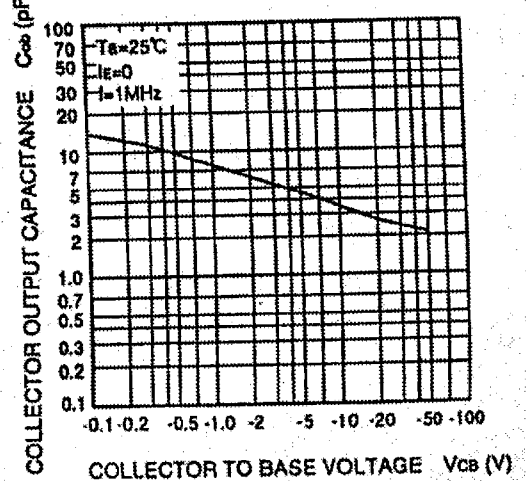
DC FORWARD CURRENT GAIN VS. COLLECTOR CURRENT



GAIN BAND WIDTH PRODUCT VS. EMITTER CURRENT



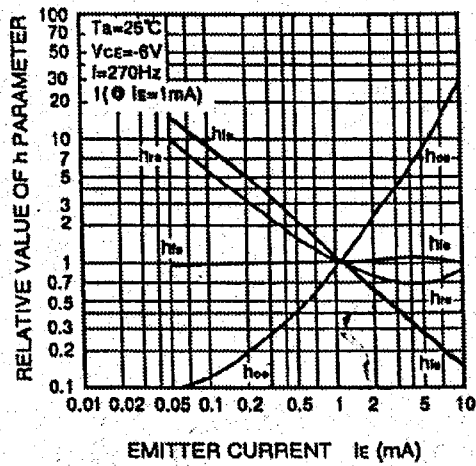
COLLECTOR OUTPUT CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE



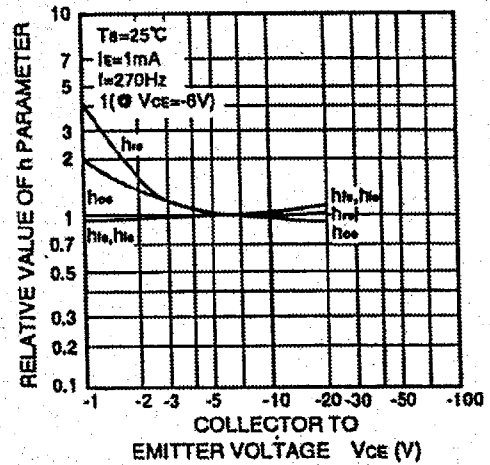
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Silicon PNP Epitaxial Type (Super Mini type)

h PARAMETER VS. EMITTER CURRENT



h PARAMETER VS. COLLECTOR TO EMITTER VOLTAGE



COMMON EMITTER h PARAMETER (TYPICAL VALUE)

| Symbol | Parameter | Test conditions | Limits | Unit |
|----------|---|---|--------|------------------|
| h_{ie} | Closed loop small signal input impedance | $T_a=25^\circ\text{C}$ $V_{ce}=-6\text{V}$ $I_e=1\text{mA}$ $f=270\text{Hz}$ | 7.0 | $k\Omega$ |
| h_{re} | Open loop small signal reverse voltage amplification factor | | 0.1 | $\times 10^{-3}$ |
| h_{fe} | Closed loop small signal forward current amplification factor | | 250 | — |
| h_{oe} | Open loop small signal output admittance | | 18 | μS |



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