

Description

- General small signal amplifier

Features

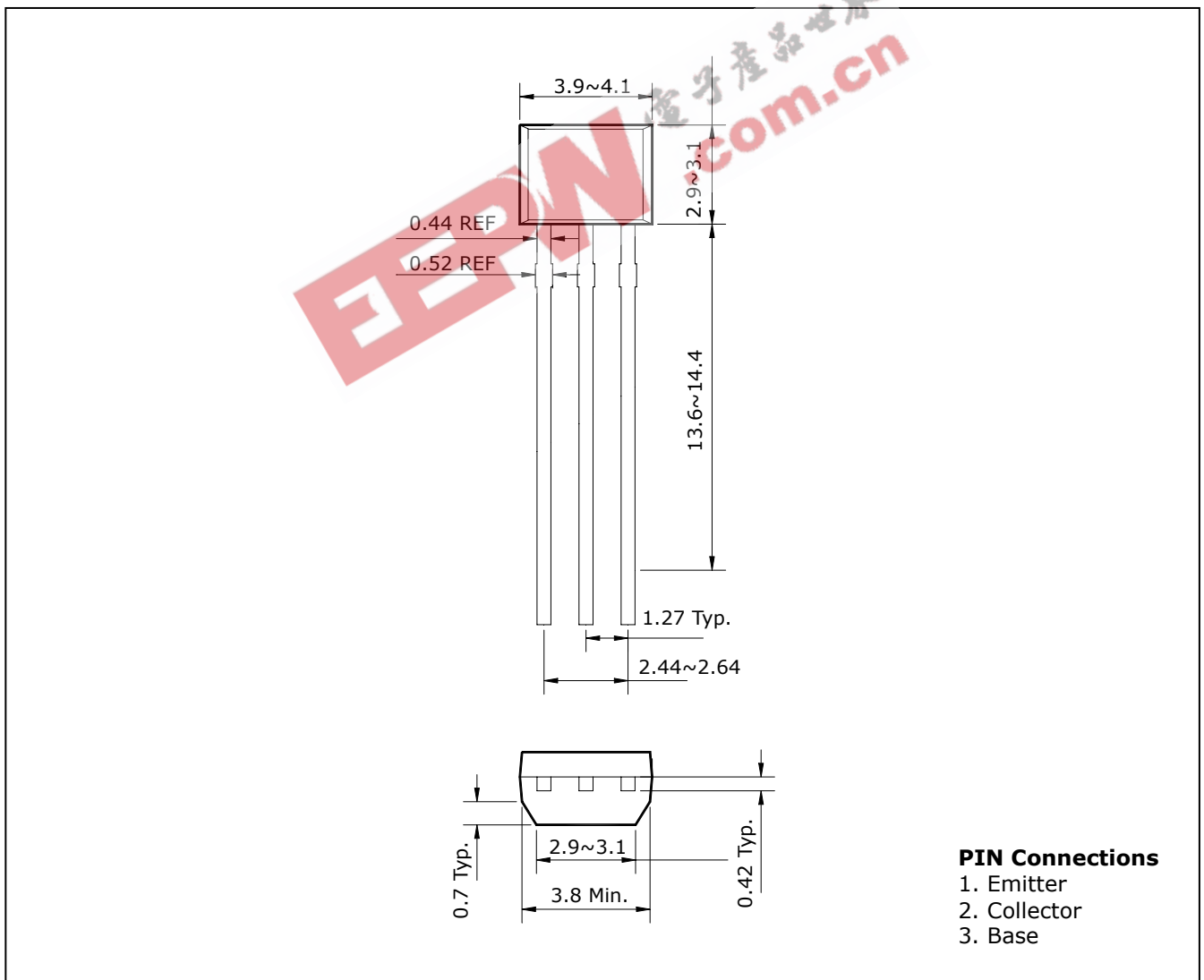
- Low collector saturation voltage : $V_{CE(sat)} = -0.3V(\text{Max.})$
- Low output capacitance : $C_{ob} = 4pF(\text{Typ.})$
- Complementary pair with 2SC5343M

Ordering Information

| Type NO. | Marking | Package Code |
|----------|---------|--------------|
| 2SA1980M | 1980 | TO-92M |

Outline Dimensions

unit : mm



Absolute maximum ratings

Ta=25°C

| Characteristic | Symbol | Ratings | Unit |
|---------------------------|-----------|---------|------|
| Collector-Base voltage | V_{CBO} | -50 | V |
| Collector-Emitter voltage | V_{CEO} | -50 | V |
| Emitter-Base voltage | V_{EBO} | -5 | V |
| Collector current | I_C | -150 | mA |
| Collector dissipation | P_C | 400 | mW |
| Junction temperature | T_j | 150 | °C |
| Storage temperature | T_{stg} | -55~150 | °C |

Electrical Characteristics

Ta=25°C

| Characteristic | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|--------------------------------------|---------------|---|------|------|------|---------|
| Collector-Base breakdown voltage | BV_{CBO} | $I_C = -100\mu A, I_E = 0$ | -50 | - | - | V |
| Collector-Emitter breakdown voltage | BV_{CEO} | $I_C = -1mA, I_B = 0$ | -50 | - | - | V |
| Emitter-Base breakdown voltage | BV_{EBO} | $I_E = -10\mu A, I_C = 0$ | -5 | - | - | V |
| Collector cut-off current | I_{CBO} | $V_{CB} = -50V, I_E = 0$ | - | - | -0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = -5V, I_C = 0$ | - | - | -0.1 | μA |
| DC current gain | h_{FE}^* | $V_{CE} = -6V, I_C = -2mA$ | 70 | - | 700 | - |
| Collector-Emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -100mA, I_B = -10mA$ | - | - | -0.3 | V |
| Transition frequency | f_T | $V_{CE} = -10V, I_C = -1mA$ | 80 | - | - | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = -10V, I_E = 0, f = 1MHz$ | - | 4 | 7 | pF |
| Noise figure | NF | $V_{CE} = -6V, I_C = -0.1mA$ $f = 1KHz, R_g = 10K\Omega$ | - | - | 10 | dB |

*: h_{FE} rank / O : 70~140, Y : 120~240, G : 200~400, L : 300~700.

Electrical Characteristic Curves

Fig. 1 P_C - T_a

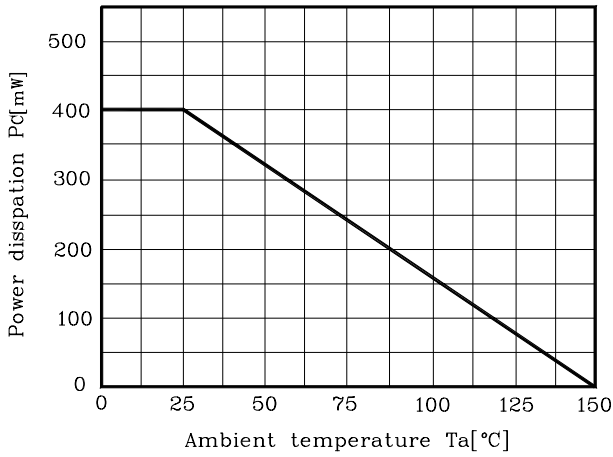


Fig. 2 I_C - V_{BE}

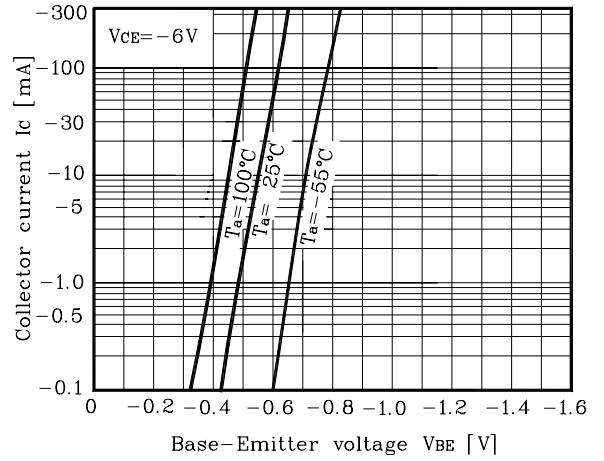


Fig. 3 I_C - V_{CE}

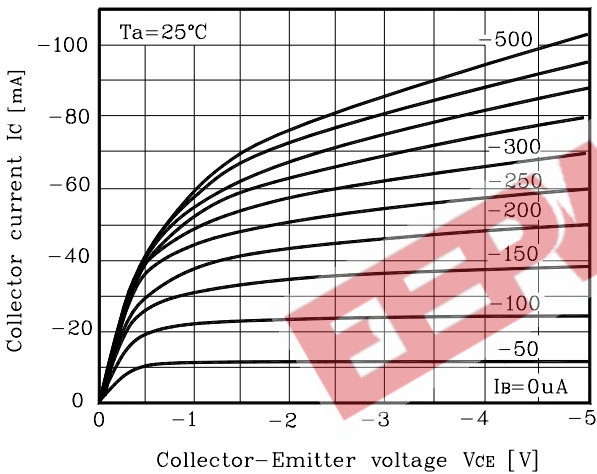


Fig. 4 h_{FE} - I_C

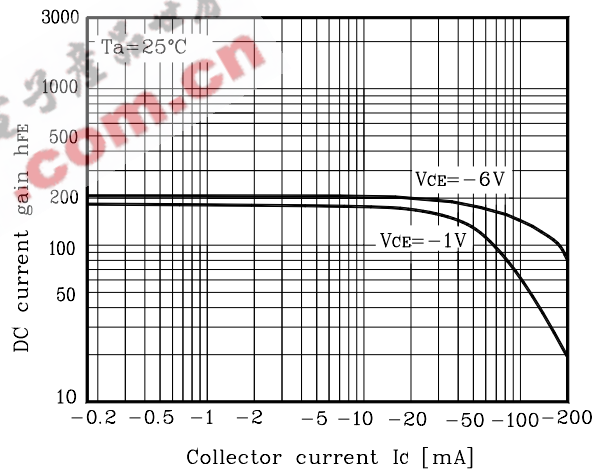
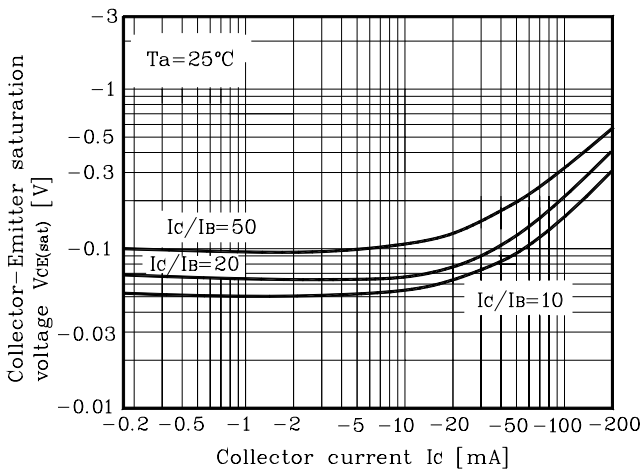


Fig. 5 $V_{CE(sat)}$ - I_C



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