

## Description

- General small signal amplifier

## Features

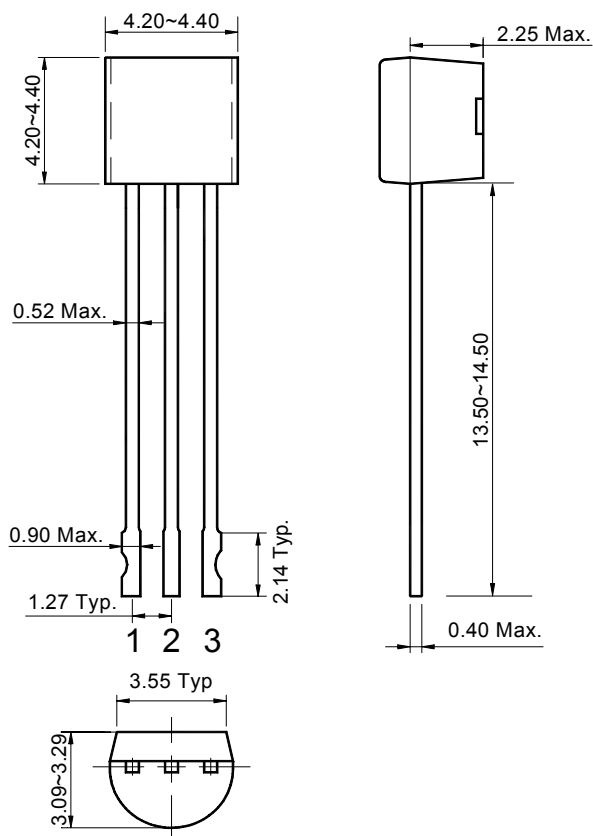
- Low collector saturation voltage :  $V_{CE(sat)} = -0.3V(\text{Max.})$
- Low output capacitance :  $C_{ob} = 4pF(\text{Typ.})$
- Complementary pair with 2SC5343N

## Ordering Information

| Type NO. | Marking | Package Code |
|----------|---------|--------------|
| 2SA1980N | A1980   | TO-92N       |

## Outline Dimensions

unit : mm



### PIN Connections

1. Emitter
2. Collector
3. Base

**Absolute Maximum Ratings**

(Ta=25°C)

| Characteristic              | Symbol    | Rating  | 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 power dissipation | $P_C$     | 400     | mW   |
| Junction temperature        | $T_J$     | 150     | °C   |
| Storage temperature range   | $T_{stg}$ | -55~150 | °C   |

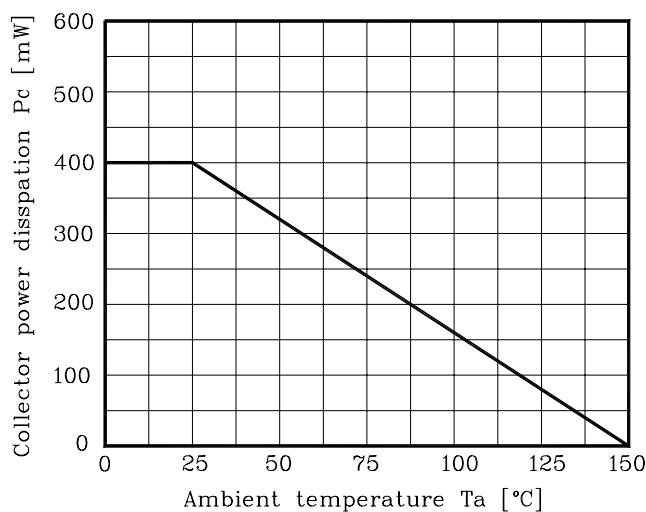
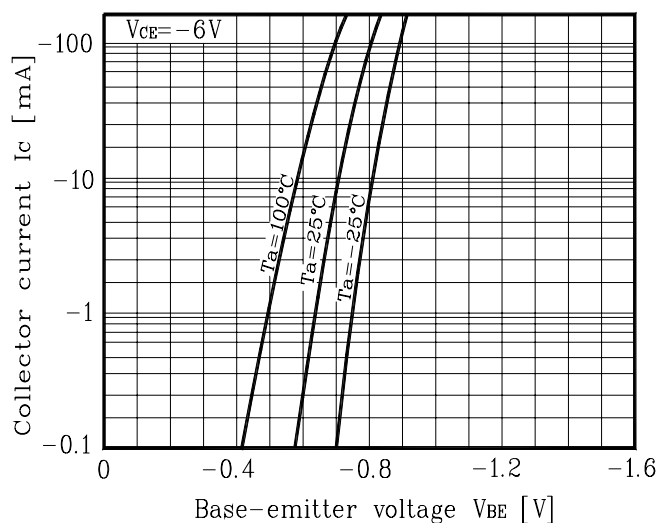
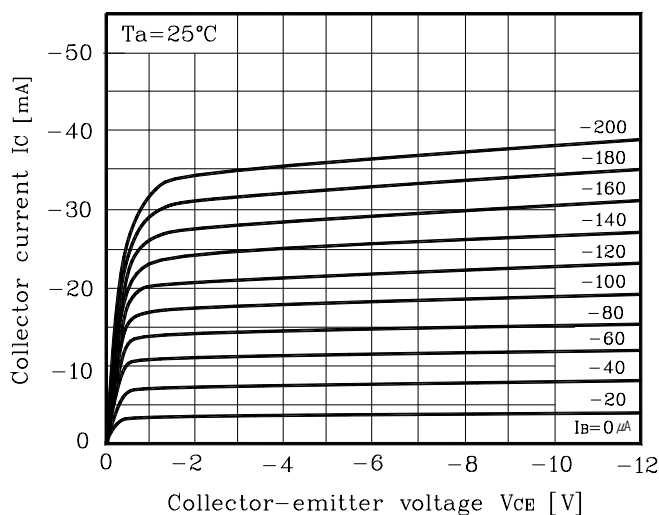
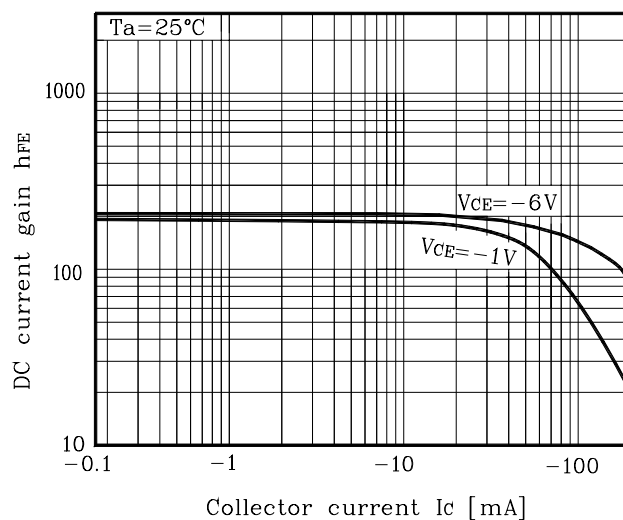
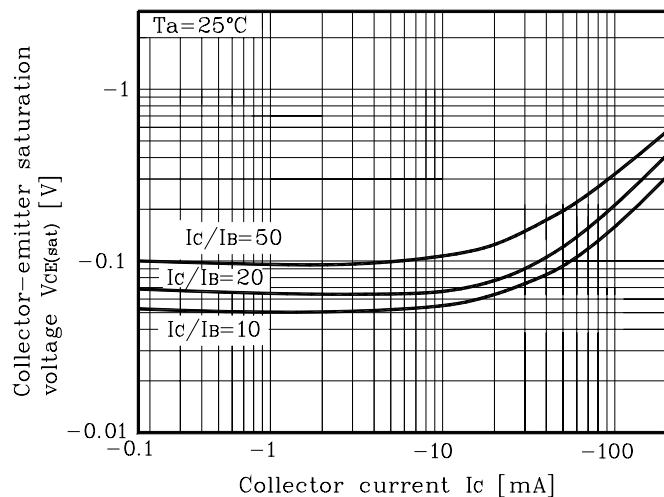
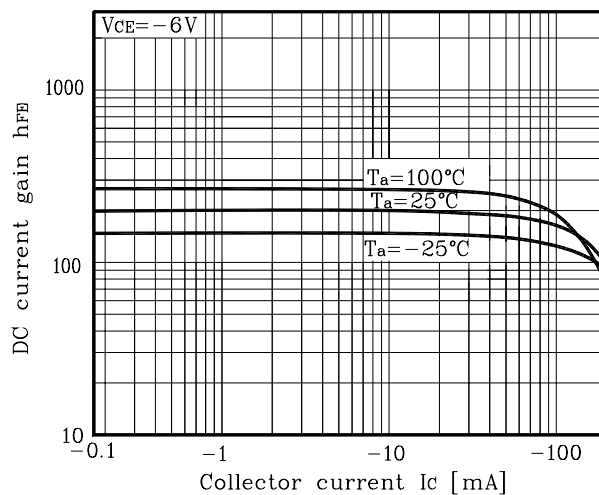
**Electrical Characteristics**

(Ta=25°C)

| Characteristic                       | Symbol        | Test Condition                     | Min. | Typ.  | Max. | Unit |
|--------------------------------------|---------------|------------------------------------|------|-------|------|------|
| Collector-emitter breakdown voltage  | $BV_{CEO}$    | $I_C = -1mA, I_B = 0$              | -50  | -     | -    | 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    |
| Base-emitter voltage                 | $V_{BE}$      | $V_{CE} = -6V, I_C = -2mA$         | -    | -0.67 | -0.9 | V    |
| Transition frequency                 | $f_T$         | $V_{CE} = -10V, I_C = -10mA$       | -    | 200   | -    | MHz  |
| Collector output capacitance         | $C_{ob}$      | $V_{CB} = -10V, I_E = 0, f = 1MHz$ | -    | 4     | -    | pF   |

\*:  $h_{FE}$  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  $V_{CE(sat)} - I_C$ Fig. 6  $h_{FE} - I_C$ 

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