

## Description

- General small signal amplifier

## Features

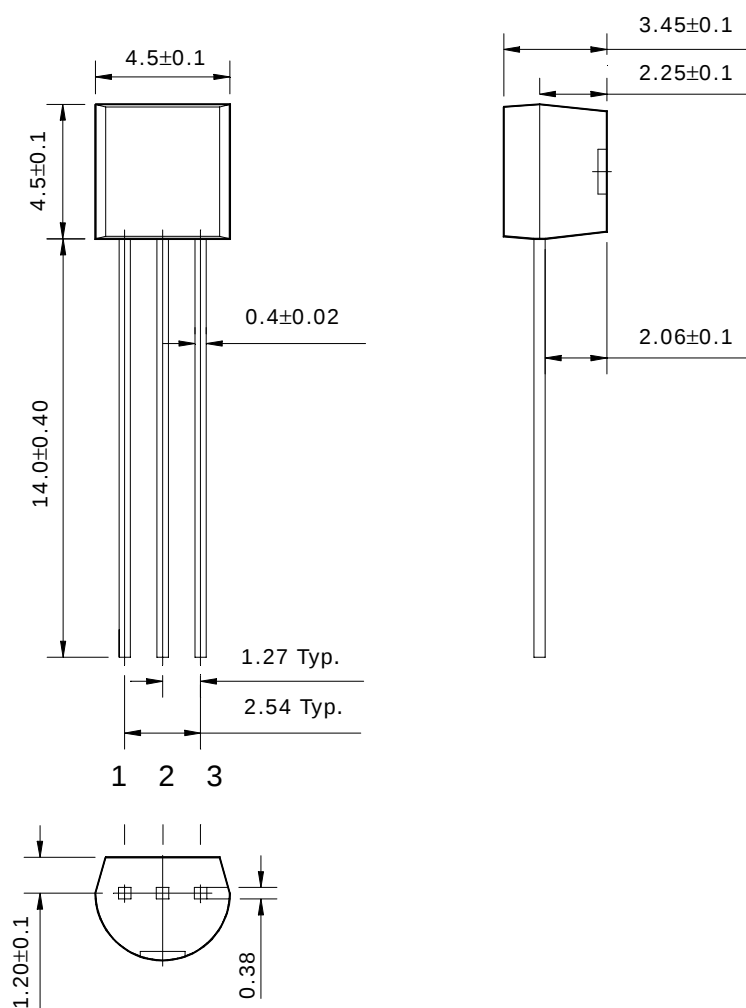
- Low collector saturation voltage :  $V_{CE(sat)} = 0.25V(\text{Max.})$
- Low output capacitance :  $C_{ob} = 2pF(\text{Typ.})$
- Complementary pair with STA733

## Ordering Information

| Type NO. | Marking | Package Code |
|----------|---------|--------------|
| STC945   | STC945  | TO-92        |

## Outline Dimensions

unit : mm



### PIN Connections

1. Emitter
2. Collector
3. Base

**Absolute maximum ratings**

(Ta=25°C)

| Characteristic            | Symbol    | Ratings   | Unit |
|---------------------------|-----------|-----------|------|
| Collector-Base voltage    | $V_{CBO}$ | 50        | V    |
| Collector-Emitter voltage | $V_{CEO}$ | 40        | V    |
| Emitter-Base voltage      | $V_{EBO}$ | 5         | V    |
| Collector current         | $I_C$     | 150       | mA   |
| Collector dissipation     | $P_C$     | 625       | 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     | $BV_{CBO}$    | $I_C = 50\mu A, I_E = 0$                              | 50   | -    | -    | V       |
| Collector-Emitter breakdown voltage  | $BV_{CEO}$    | $I_C = 1mA, I_B = 0$                                  | 40   | -    | -    | V       |
| Emitter-Base breakdown voltage       | $BV_{EBO}$    | $I_E = 50\mu A, I_C = 0$                              | 5    | -    | -    | V       |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB} = 50V, I_E = 0$                               | -    | -    | 0.1  | $\mu A$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = 5V, I_C = 0$                                | -    | -    | 0.1  | $\mu A$ |
| DC current gain                      | $h_{FE}^*$    | $V_{CE} = 6V, I_C = 2mA$                              | 70   | -    | 700  | -       |
| Collector-Emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 100mA, I_B = 10mA$                             | -    | -    | 0.25 | V       |
| Transistion frequency                | $f_T$         | $V_{CE} = 10V, I_C = 1mA$                             | 80   | -    | -    | MHz     |
| Collector output capacitance         | $C_{ob}$      | $V_{CB} = 10V, I_E = 0, f = 1MHz$                     | -    | 2    | 3.5  | 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  $P_C - T_a$

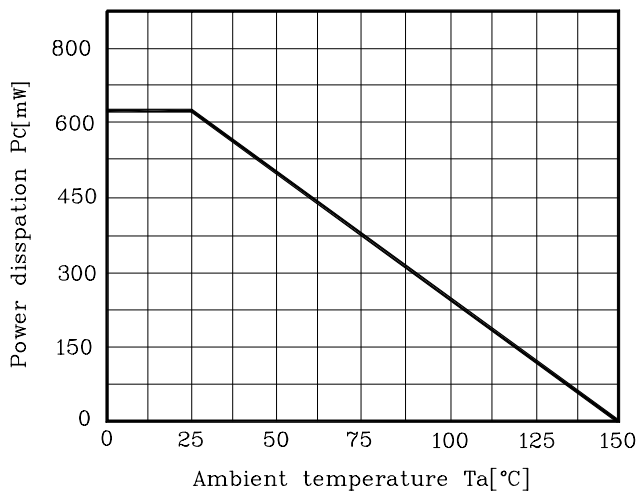


Fig. 2  $I_C - V_{BE}$

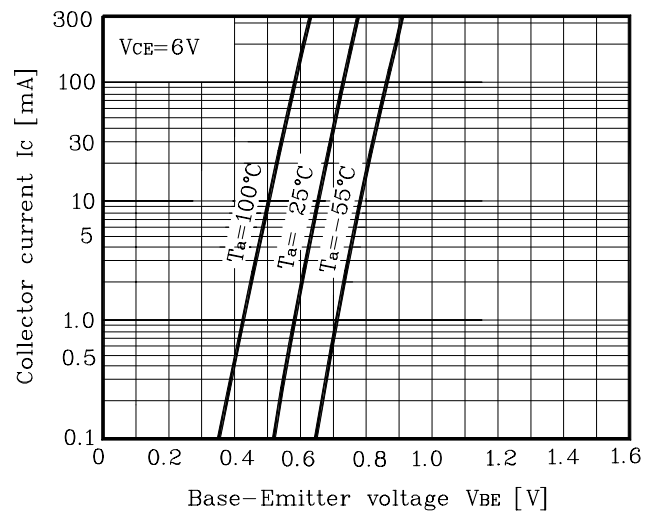


Fig. 3  $I_C - V_{CE}$

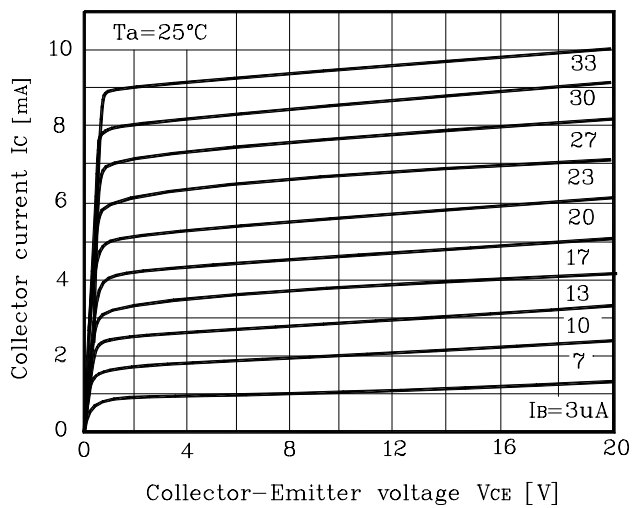


Fig. 4  $h_{FE} - I_C$

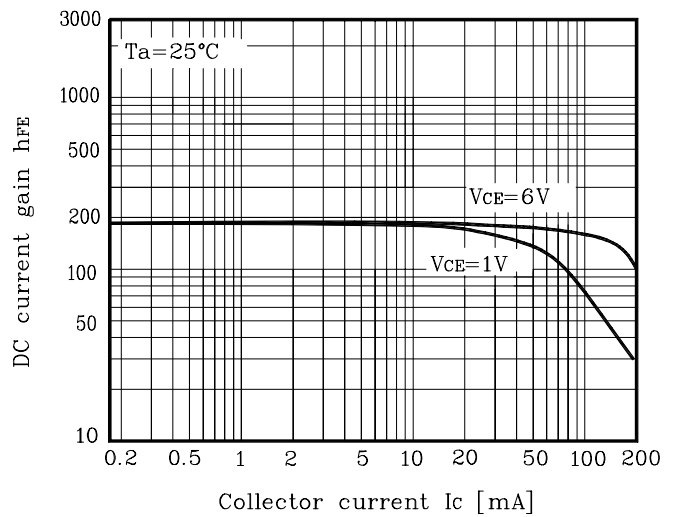


Fig. 5  $V_{CE(sat)} - I_C$

