

STC945

NPN Silicon Transistor

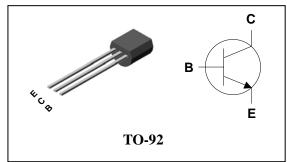
Description

• General small signal amplifier

Features

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

PIN Connection



Ordering Information

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

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 | 500 | mW |
| Junction temperature | T _j | 150 | °C |
| Storage temperature | T _{stg} | -55~150 | °C |

Electrical Characteristics

(Ta=25°C)

| Characteristic | Symbol | Test Condition | Min. | Тур. | Max. | Unit |
|--------------------------------------|----------------------|--|------|------|------|------|
| Collector-Base breakdown voltage | BV _{CBO} | $I_C = 50 \mu A, I_E = 0$ | 50 | - | - | V |
| Collector-Emitter breakdown voltage | BV _{CEO} | $I_C=1$ mA, $I_B=0$ | 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 | μΑ |
| Emitter cut-off current | I _{EBO} | $V_{EB} = 5V$, $I_{C} = 0$ | - | - | 0.1 | μΑ |
| DC current gain | h _{FE} * | $V_{CE}=6V$, $I_{C}=2mA$ | 70 | - | 700 | - |
| Collector-Emitter saturation voltage | V _{CE(sat)} | $I_C = 100 \text{mA}, I_B = 10 \text{mA}$ | - | - | 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, Rg=10K Ω | - | - | 10 | dB |

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

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Electrical Characteristic Curves

Fig. 1 $P_C - T_a$

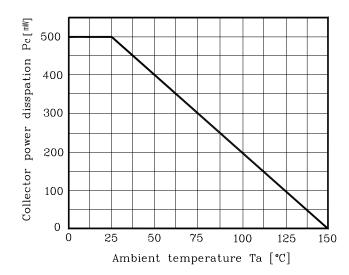


Fig. 2 I_{C} -V $_{\text{BE}}$

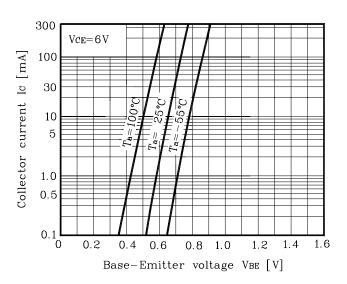


Fig. 3 I_C - V_{CE}

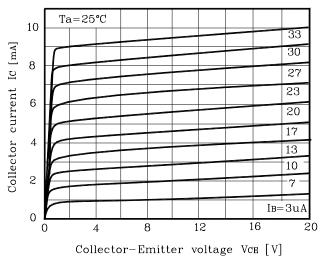


Fig. 4 h_{FE} - I_C

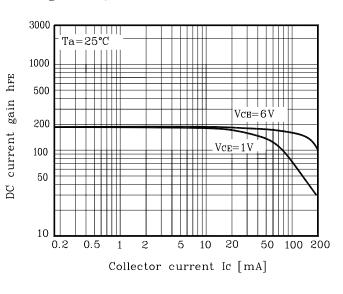
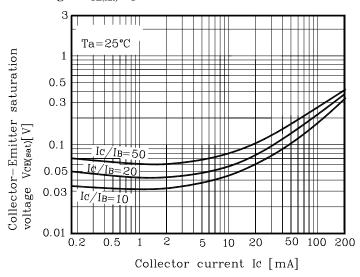
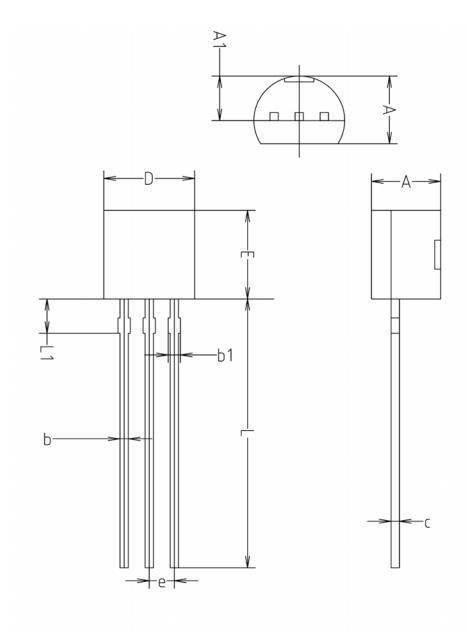


Fig. 5 $V_{\text{CE}(\text{sat})}$ -I $_{\text{C}}$



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Outline Dimension



| | MILLMETERS(mm) | | | |
|--------|----------------|---------|---------|--|
| SYMBOL | MINIMUM | NOMINAL | MAXIMUM | |
| Α | 3.40 | 3.50 | 3.66 | |
| A1 | 2.46 | 2.51 | 2.59 | |
| b | 0.39 | 0.44 | 0.53 | |
| b1 | 0.39 | _ | 0.63 | |
| С | 0.35 | 0.42 | 0.47 | |
| D | 4.48 | 4.60 | 4.70 | |
| Ε | 4.48 | 4.60 | 4.70 | |
| е | 1.17 | 1.27 | 1.37 | |
| L | 13.70 | 14.00 | 14.77 | |
| L1 | 1.55 | 1.70 | 2.15 | |

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