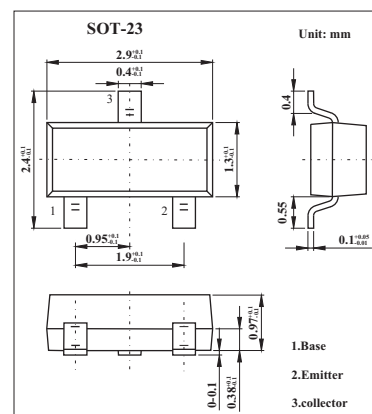


## NPN Silicon Transistor

### 2SC945

#### ■ Features

- Collector current up to 150mA
- High  $h_{FE}$  linearity



#### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter                    | Symbol    | Rating      | Unit             |
|------------------------------|-----------|-------------|------------------|
| Collector to base voltage    | $V_{CBO}$ | 60          | V                |
| Collector to emitter voltage | $V_{CEO}$ | 50          | V                |
| Emitter to base voltage      | $V_{EBO}$ | 5           | V                |
| Collector current (DC)       | $I_C$     | 150         | mA               |
| power dissipation            | $P_C$     | 200         | mW               |
| Junction temperature         | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature range    | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

#### ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

| Parameter                           | Symbol        | Testconditions                                                            | Min | Typ | Max | Unit          |
|-------------------------------------|---------------|---------------------------------------------------------------------------|-----|-----|-----|---------------|
| Collector-base breakdown voltage    | $V_{(BR)CBO}$ | $I_C=100\ \mu\text{A}, I_E=0$                                             | 60  |     |     | V             |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=1\text{mA}, I_B=0$                                                   | 50  |     |     | V             |
| Emitter-base breakdown voltage      | $V_{(BR)EBO}$ | $I_E=100\ \mu\text{A}, I_C=0$                                             | 5   |     |     | V             |
| Collector cutoff current            | $I_{CBO}$     | $V_{CB}=60\text{V}, I_E=0$                                                |     |     | 0.1 | $\mu\text{A}$ |
| Emitter cutoff current              | $I_{EBO}$     | $V_{EB}=5.0\text{V}, I_C=0$                                               |     |     | 0.1 | $\mu\text{A}$ |
| DC current gain                     | $h_{FE}$      | $V_{CE}=6.0\text{V}, I_C=1.0\text{mA}$                                    | 130 |     | 400 |               |
|                                     |               | $V_{CE}=6.0\text{V}, I_C=0.1\text{mA}$                                    | 40  |     |     |               |
| Collector saturation voltage        | $V_{CE(sat)}$ | $I_C=100\text{mA}, I_B=10\text{mA}$                                       |     |     | 0.3 | V             |
| Base saturation voltage             | $V_{BE(sat)}$ | $I_C=100\text{mA}, I_B=10\text{mA}$                                       |     |     | 1.0 | V             |
| Collector to base capacitance       | $C_{ob}$      | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$                                 |     |     | 3.0 | pF            |
| Noise figure                        | NF            | $V_{CE}=6\text{V}, I_C=0.1\text{mA}, R_g=10\text{k}\Omega, f=1\text{kHz}$ |     | 4   | 10  | dB            |
| Transition frequency                | $f_T$         | $V_{CE}=6\text{V}, I_C=10\text{mA}, f=30\text{MHz}$                       | 150 |     |     | MHz           |

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