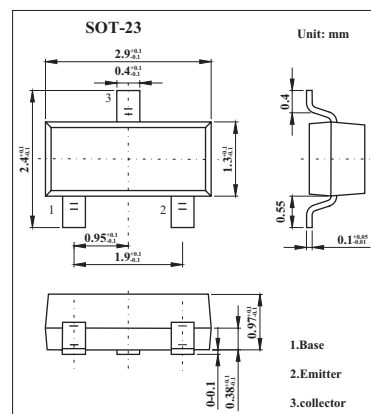


## NPN Epitaxial Planar Silicon Transistor

## 2SC4577

## ■ Features

- Low collector-to-emitter saturation voltage.
- Small-sized package.

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

| Parameter                 | Symbol    | Rating      | Unit             |
|---------------------------|-----------|-------------|------------------|
| Collector-base voltage    | $V_{CB0}$ | 20          | V                |
| Collector-emitter voltage | $V_{CEO}$ | 15          | V                |
| Emitter-base voltage      | $V_{EBO}$ | 5           | V                |
| Collector current         | $I_C$     | 500         | mA               |
| Collector current (pulse) | $I_{cp}$  | 1           | A                |
| Collector dissipation     | $P_C$     | 200         | mW               |
| Junction temperature      | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature       | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

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

| Parameter                            | Symbol        | Testconditions                           | Min | Typ  | Max | Unit          |
|--------------------------------------|---------------|------------------------------------------|-----|------|-----|---------------|
| Collector cutoff current             | $I_{CBO}$     | $V_{CB} = 15\text{V}, I_E = 0$           |     |      | 0.1 | $\mu\text{A}$ |
| Emitter cutoff current               | $I_{EBO}$     | $V_{EB} = 4\text{V}, I_C = 0$            |     |      | 0.1 | $\mu\text{A}$ |
| DC current gain                      | $h_{FE}$      | $V_{CE} = 2\text{V}, I_C = 10\text{mA}$  | 135 |      | 600 |               |
| Gain bandwidth product               | $f_T$         | $V_{CE} = 2\text{V}, I_C = 50\text{mA}$  |     | 300  |     | MHz           |
| Output capacitance                   | $C_{ob}$      | $V_{CB} = 10\text{V}, f = 1.0\text{MHz}$ |     | 4.0  |     | pF            |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 5\text{mA}, I_B = 0.5\text{mA}$   |     | 15   | 30  | mV            |
|                                      |               | $I_C = 200\text{mA}, I_B = 10\text{mA}$  |     | 160  | 300 | mV            |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | $I_C = 200\text{mA}, I_B = 10\text{mA}$  |     | 0.95 | 1.2 | V             |
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C = 10\mu\text{A}, I_E = 0$           | 20  |      |     | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C = 1\text{mA}, R_{BE} = \infty$      | 15  |      |     | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E = 10\mu\text{A}, I_C = 0$           | 5   |      |     | V             |

■  $h_{FE}$  Classification

| Marking  | UT      |         |         |
|----------|---------|---------|---------|
| Rank     | 5       | 6       | 7       |
| $h_{FE}$ | 135~270 | 200~400 | 300~600 |