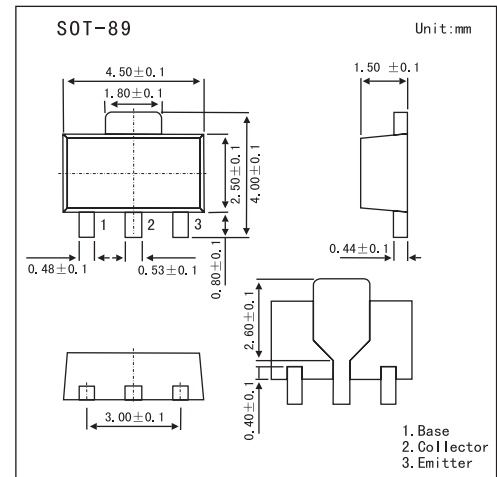


## Silicon PNP Epitaxial Planar Type

## 2SB1599

## ■ Features

- Low collector to emitter saturation voltage  $V_{CE(sat)}$ .
- Mini Power type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.

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

| Parameter                   | Symbol    | Rating      | Unit             |
|-----------------------------|-----------|-------------|------------------|
| Collector-base voltage      | $V_{CB0}$ | -50         | V                |
| Collector-emitter voltage   | $V_{CE0}$ | -40         | V                |
| Emitter-base voltage        | $V_{EB0}$ | -5          | V                |
| Peak collector current      | $I_{CP}$  | -3          | A                |
| Collector current           | $I_C$     | -0.6        | A                |
| Collector power dissipation | $P_C$     | 1           | W                |
| 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             | $I_{CB0}$     | $V_{CB} = -20\text{ V}, I_E = 0$                               |     |      | -1   | $\mu\text{A}$ |
|                                      | $I_{CE0}$     | $V_{CE} = -12\text{ V}, I_B = 0$                               |     |      | -100 | $\mu\text{A}$ |
| Emitter cutoff current               | $I_{EB0}$     | $V_{EB} = -5\text{ V}, I_C = 0$                                |     |      | -100 | $\mu\text{A}$ |
| Collector-base voltage               | $V_{CB0}$     | $I_C = -1\text{ mA}, I_E = 0$                                  | -50 |      |      | V             |
| Collector-emitter voltage            | $V_{CE0}$     | $I_C = -10\text{ mA}, I_B = 0$                                 | -40 |      |      | V             |
| Forward current transfer ratio       | $h_{FE}$      | $V_{CE} = -5\text{ V}, I_C = -1\text{ A}$                      | 50  |      | 220  |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -1.5\text{ A}, I_B = -0.15\text{ A}$                    |     | -0.4 | -1   | V             |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | $I_C = -2\text{ A}, I_B = -0.2\text{ A}$                       |     |      | -1.5 | V             |
| Transition frequency                 | $f_T$         | $V_{CB} = -5\text{ V}, I_E = 0.5\text{ A}, f = 200\text{ MHz}$ |     | 150  |      | MHz           |
| Collector output capacitance         | $C_{ob}$      | $V_{CB} = -5\text{ V}, I_E = 0, f = 1\text{ MHz}$              |     | 70   |      | pF            |

■  $h_{FE}$  Classification

| Marking  | 1X     |        |         |
|----------|--------|--------|---------|
| Rank     | P      | Q      | R       |
| $h_{FE}$ | 50~100 | 80~160 | 100~220 |