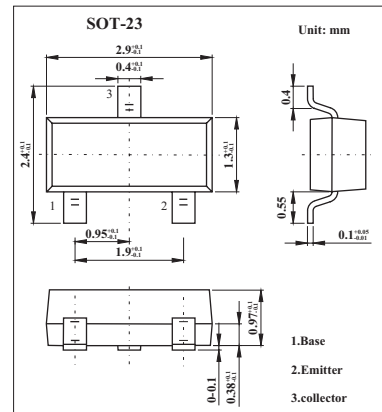


## Silicon PNP Epitaxial Planar Type

## 2SB970

## ■ Features

- Low collector-emitter saturation voltage  $V_{CE(sat)}$ .
- Mini 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      | $V_{CBO}$ | -15         | V                |
| Collector-emitter voltage   | $V_{CEO}$ | -10         | V                |
| Emitter-base voltage        | $V_{EBO}$ | -7          | V                |
| Collector current           | $I_C$     | -5          | A                |
| Peak collector current      | $I_{CP}$  | -1          | A                |
| Collector power 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-base voltage               | $V_{CBO}$     | $I_C = -10 \mu\text{A}$ , $I_E = 0$                                      | -15 |       |      | V    |
| Collector-emitter voltage            | $V_{CEO}$     | $I_C = -1 \text{ mA}$ , $I_B = 0$  | -10 |       |      | V    |
| Emitter-base voltage                 | $V_{EBO}$     | $I_E = -10 \mu\text{A}$ , $I_C = 0$                                      | -7  |       |      | V    |
| Collector-base cutoff current        | $I_{CBO}$     | $V_{CB} = -10 \text{ V}$ , $I_E = 0$                                     |     |       | -100 | nA   |
| Forward current transfer ratio       | $h_{FE}$      | $V_{CE} = -2 \text{ V}$ , $I_C = -0.5 \text{ A}$                         | 130 |       | 350  |      |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -0.4 \text{ A}$ , $I_B = -8 \text{ mA}$                           |     | -0.16 | -0.3 | V    |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | $I_C = -0.4 \text{ A}$ , $I_B = -8 \text{ mA}$                           |     | -0.8  | -1.2 | V    |
| Transition frequency                 | $f_T$         | $V_{CB} = -10 \text{ V}$ , $I_E = 50 \text{ mA}$ , $f = 200 \text{ MHz}$ |     | 130   |      | MHz  |
| Collector output capacitance         | $C_{ob}$      | $V_{CB} = -10 \text{ V}$ , $I_E = 0$ , $f = 1.0 \text{ MHz}$             |     | 22    |      | pF   |

\* Pulse measurement.

■  $h_{FE}$  Classification

| Marking  | 1R      |         |
|----------|---------|---------|
| Rank     | R       | S       |
| $h_{FE}$ | 130~220 | 180~350 |