

## PNP Epitaxial Planar Silicon Transistors

## 2SB1397

## ■ Features

- Low saturation voltage.
- Contains diode between collector and emitter.
- Contains bias resistance between base and emitter.
- Large current capacity.
- Small-sized package making it easy to provide highdensity, small-sized hybrid ICs.

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

| Parameter                 | Symbol    | Rating      | Unit             |
|---------------------------|-----------|-------------|------------------|
| Collector-base voltage    | $V_{CB0}$ | -25         | V                |
| Collector-emitter voltage | $V_{CE0}$ | -20         | V                |
| Emitter-base voltage      | $V_{EB0}$ | -6          | V                |
| Collector current         | $I_C$     | -2          | A                |
| Collector current (pulse) | $I_{CP}$  | -4          | A                |
| Collector dissipation     | $P_C^*$   | 1.3         | W                |
| Junction temperature      | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature       | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

\* Mounted on ceramic board (250mm<sup>2</sup>X0.8mm)

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

| Parameter                              | Symbol         | Testconditions                               | Min | Typ   | Max  | Unit       |
|----------------------------------------|----------------|----------------------------------------------|-----|-------|------|------------|
| Collector cutoff current               | $I_{CBO}$      | $V_{CB} = -20\text{V}$ , $I_E = 0$           |     |       | -1   | nA         |
| DC current Gain                        | $h_{FE}$       | $V_{CE} = -2\text{V}$ , $I_C = -0.5\text{A}$ | 70  |       |      |            |
|                                        |                | $V_{CE} = -2\text{V}$ , $I_C = -2\text{A}$   | 50  |       |      |            |
| Gain bandwidth product                 | $f_T$          | $V_{CE} = -2\text{V}$ , $I_C = -0.5\text{A}$ |     | 300   |      | MHz        |
| Output capacitance                     | $C_{ob}$       | $V_{CB} = -10\text{V}$ , $f = 1\text{MHz}$   |     | 40    |      | pF         |
| Collector-emitter saturation voltage   | $V_{CE(sat)}$  | $I_C = -1\text{A}$ , $I_B = -50\text{mA}$    |     | -0.25 | -0.5 | V          |
| Base-emitter saturation voltage        | $V_{BE(sat)}$  | $I_C = -1\text{A}$ , $I_B = -50\text{mA}$    |     |       | -1.5 | V          |
| Collector-to-base breakdown voltage    | $V_{(BR)CB0}$  | $I_C = -10\mu\text{A}$ , $I_E = 0$           | -25 |       |      | V          |
| Collector-to-emitter breakdown voltage | $V_{(BR)CE01}$ | $I_C = -10\mu\text{A}$ , $R_{BE} = \infty$   | -25 |       |      | V          |
| Collector-to-emitter breakdown voltage | $V_{(BR)CE02}$ | $I_C = -10\text{mA}$ , $R_{BE} = \infty$     | -20 |       |      | V          |
| Diode forward voltage                  | $V_F$          | $I_F = 0.5\text{A}$                          |     |       | -1.5 | V          |
| Base-emitter resistance                | $R_{BE}$       |                                              |     | 1.6   |      | K $\Omega$ |

## ■ Marking

|         |    |
|---------|----|
| Marking | BP |
|---------|----|

