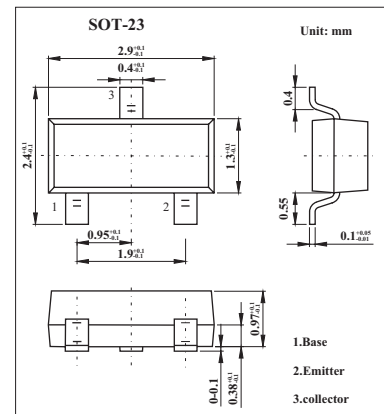


## PNP Silicon Switching Transistors

## BSS80,BSS82

## ■ Features

- High DC current gain: 0.1mA to 500 mA.
- Low collector-emitter saturation voltage.

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

| Parameter                                         | Symbol     | BSS80       | BSS82 | Unit             |
|---------------------------------------------------|------------|-------------|-------|------------------|
| Collector-emitter voltage                         | $V_{CEO}$  | 40          | 60    | V                |
| Collector-base voltage                            | $V_{CBO}$  | 60          |       | V                |
| Emitter-base voltage                              | $V_{EBO}$  | 5           |       | V                |
| Collector current                                 | $I_C$      | 800         |       | mA               |
| Peak collector current                            | $I_{CM}$   | 1           |       | A                |
| Base current                                      | $I_B$      | 100         |       | mA               |
| Peak base current                                 | $I_{BM}$   | 200         |       | mA               |
| Total power dissipation, $T_s = 77^\circ\text{C}$ | $P_{tot}$  | 330         |       | mW               |
| Junction temperature                              | $T_j$      | 150         |       | $^\circ\text{C}$ |
| Storage temperature                               | $T_{stg}$  | -65 to +150 |       | $^\circ\text{C}$ |
| Junction - soldering point                        | $R_{thJS}$ | $\leq 220$  |       | K/W              |

**BSS80,BSS82**

## ■ Electrical Characteristics Ta = 25°C

| Parameter                              |           | Symbol        | Testconditions                                                                                 | Min | Typ | Max | Unit          |
|----------------------------------------|-----------|---------------|------------------------------------------------------------------------------------------------|-----|-----|-----|---------------|
| Collector-emitter breakdown voltage    | BSS80     | $V_{(BR)CEO}$ | $I_C = 10\text{ mA}, I_B = 0$                                                                  | 40  |     |     | V             |
|                                        | BSS82     |               |                                                                                                | 60  |     |     |               |
| Collector-base breakdown voltage       |           | $V_{(BR)CBO}$ | $I_C = 10\text{ }\mu\text{A}, I_E = 0$                                                         | 60  |     |     | V             |
| Emitter-base breakdown voltage         |           | $V_{(BR)EBO}$ | $I_E = 10\text{ }\mu\text{A}, I_C = 0$                                                         | 5   |     |     | V             |
| Collector cutoff current               |           | $I_{CBO}$     | $V_{CB} = 50\text{ V}, I_E = 0$                                                                |     |     | 10  | nA            |
|                                        |           |               | $V_{CB} = 50\text{ V}, I_E = 0, T_A = 150^\circ\text{C}$                                       |     |     | 10  | $\mu\text{A}$ |
| Emitter cutoff current                 |           | $I_{EBO}$     | $V_{EB} = 3\text{ V}, I_C = 0$                                                                 |     |     | 10  | nA            |
| DC current gain *                      | BSS80/82B | hFE           | $I_C = 100\text{ }\mu\text{A}, V_{CE} = 10\text{ V}$                                           | 40  |     |     |               |
|                                        | BSS80/82C |               |                                                                                                | 75  |     |     |               |
|                                        | BSS80/82B |               | $I_C = 1\text{ mA}, V_{CE} = 10\text{ V}$                                                      | 40  |     |     |               |
|                                        | BSS80/82C |               |                                                                                                | 100 |     |     |               |
|                                        | BSS80/82B |               | $I_C = 10\text{ mA}, V_{CE} = 10\text{ V}$                                                     | 40  |     |     |               |
|                                        | BSS80/82C |               |                                                                                                | 100 |     |     |               |
|                                        | BSS80/82B |               | $I_C = 150\text{ mA}, V_{CE} = 10\text{ V}$                                                    | 40  |     | 120 |               |
|                                        | BSS80/82C |               |                                                                                                | 100 |     | 300 |               |
|                                        | BSS80/82B |               | $I_C = 500\text{ mA}, V_{CE} = 10\text{ V}$                                                    | 40  |     |     |               |
|                                        | BSS80/82C |               |                                                                                                | 50  |     |     |               |
| Collector-emitter saturation voltage * |           | $V_{CE(sat)}$ | $I_C = 150\text{ mA}, I_B = 15\text{ mA}$                                                      |     |     | 0.4 | V             |
|                                        |           |               | $I_C = 500\text{ mA}, I_B = 50\text{ mA}$                                                      |     |     | 1.6 |               |
| Base-emitter saturation voltage *      |           | $V_{BE(sat)}$ | $I_C = 150\text{ mA}, I_B = 15\text{ mA}$                                                      |     |     | 1.3 |               |
|                                        |           |               | $I_C = 500\text{ mA}, I_B = 50\text{ mA}$                                                      |     |     | 2.6 |               |
| Transition frequency                   |           | $f_T$         | $I_C = 20\text{ mA}, V_{CE} = 20\text{ V}, f = 100\text{ MHz}$                                 |     | 250 |     | MHz           |
| Collector-base capacitance             |           | $C_{cb}$      | $V_{CB} = 10\text{ V}, f = 1\text{ MHz}$                                                       |     | 6   |     | pF            |
| Delay time                             |           | $t_d$         | $V_{CC} = 30\text{ V}, I_C = 150\text{ mA}, I_{B1} = 15\text{ mA}, V_{BE(off)} = 0.5\text{ V}$ |     |     | 10  | ns            |
| Rise time                              |           | $t_r$         | $V_{CC} = 30\text{ V}, I_C = 150\text{ mA}, I_{B1} = 15\text{ mA}, V_{BE(off)} = 0.5\text{ V}$ |     |     | 40  | ns            |
| Storage time                           |           | $t_{stg}$     | $V_{CC} = 30\text{ V}, I_C = 150\text{ mA}, I_{B1} = I_{B2} = 15\text{ mA}$                    |     |     | 80  | ns            |
| Fall time                              |           | $t_f$         | $V_{CC} = 30\text{ V}, I_C = 150\text{ mA}, I_{B1} = I_{B2} = 15\text{ mA}$                    |     |     | 30  | ns            |

\* Pulse test:  $t \leq 300\mu\text{s}$ ,  $D = 2\%$ .

## ■ hFE Classification

| TYPE    | BSS80 |     |
|---------|-------|-----|
| Rank    | B     | C   |
| Marking | CHs   | CJs |

| TYPE    | BSS82 |     |
|---------|-------|-----|
| Rank    | B     | C   |
| Marking | CLs   | CMs |