

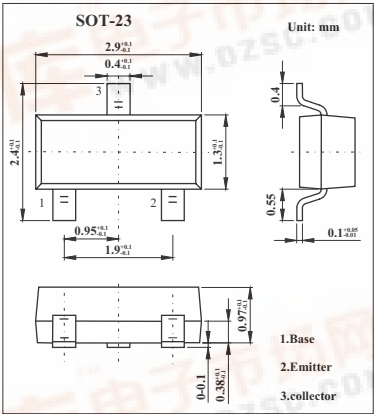
SMD Type

Transistors

NPN High-Voltage Transistors  
BF820,BF822

■ Features

- Low current (max. 50 mA)
- High voltage (max. 300 V).



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

| Parameter                                     | Symbol          | Rating      | Unit               |
|-----------------------------------------------|-----------------|-------------|--------------------|
| Collector-base voltage                        | BF820 $V_{CBO}$ | 300         | V                  |
|                                               | BF822 $V_{CBO}$ | 250         | V                  |
| Collector-emitter voltage                     | BF820 $V_{CEO}$ | 300         | V                  |
|                                               | BF822 $V_{CEO}$ | 250         | V                  |
| Emitter-base voltage                          | $V_{EBO}$       | 5           | V                  |
| Collector current                             | $I_C$           | 50          | mA                 |
| Peak collector current                        | $I_{CM}$        | 100         | mA                 |
| Peak base current                             | $I_{BM}$        | 50          | mA                 |
| Total power dissipation *                     | $P_{tot}$       | 250         | mW                 |
| Storage temperature                           | $T_{stg}$       | -65 to +150 | $^{\circ}\text{C}$ |
| Junction temperature                          | $T_j$           | 150         | $^{\circ}\text{C}$ |
| Operating ambient temperature                 | $R_{amb}$       | -65 to +150 | $^{\circ}\text{C}$ |
| Thermal resistance from junction to ambient * | $R_{th\ j-a}$   | 500         | K/W                |

\* Transistor mounted on an FR4 printed-circuit board.

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

| Parameter                            | Symbol      | Testconditons                                                       | Min | Typ | Max | Unit          |
|--------------------------------------|-------------|---------------------------------------------------------------------|-----|-----|-----|---------------|
| Collector cutoff current             | $I_{CBO}$   | $I_E = 0; V_{CB} = 200\text{ V}$                                    |     |     | 10  | nA            |
|                                      |             | $I_E = 0; V_{CB} = 200\text{ V}; T_j = 150\text{ }^{\circ}\text{C}$ |     |     | 10  | $\mu\text{A}$ |
| Emitter cutoff current               | $I_{EBO}$   | $I_C = 0; V_{EB} = 5\text{ V}$                                      |     |     | 50  | nA            |
| DC current gain *                    | $h_{FE}$    | $I_C = 25\text{ mA}; V_{CE} = 20\text{ V}$                          | 50  |     |     |               |
| collector-emitter saturation voltage | $V_{CEsat}$ | $I_C = 30\text{ mA}; I_B = 5\text{ mA}$                             |     |     | 600 | mV            |
| Feedback capacitance                 | $C_{re}$    | $I_C = I_C = 0; V_{CB} = 30\text{ V}; f = 1\text{ MHz}$             |     |     | 1.6 | pF            |
| Transition frequency                 | $f_T$       | $I_C = 10\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz}$      | 60  |     |     | MHz           |

■ hFE Classification

| TYPE    | BF820 | BF822 |
|---------|-------|-------|
| Marking | 1V    | 1X    |

