



# THE DATASHEET OF BSS44

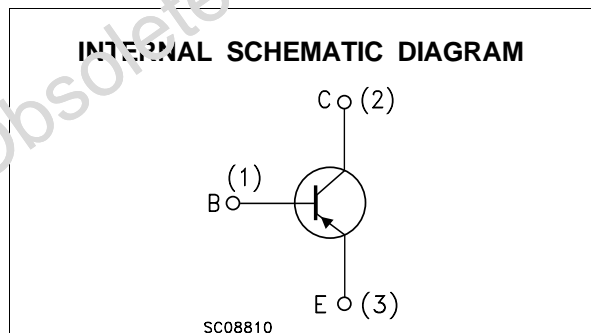
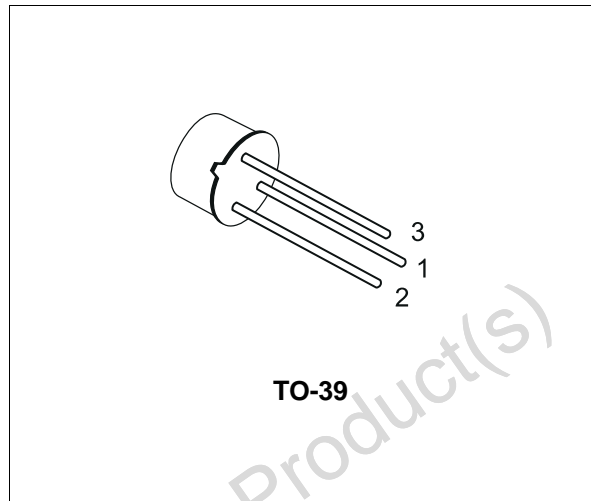


## SILICON PNP TRANSISTOR

- STMicroelectronics PREFERRED SALESTYPE
- PNP TRANSISTOR

### DESCRIPTION

The BSS44 is a silicon epitaxial planar PNP transistor in Jedec TO-39 metal case. It is used for high-current switching and power applications up to 5 A.



### ABSOLUTE MAXIMUM RATINGS

| Symbol    | Parameter  | Value      | Unit             |
|-----------|--|------------|------------------|
| $V_{CBO}$ | Collector-Base Voltage ( $I_E = 0$ )   | - 65       | V                |
| $V_{CEO}$ | Collector-Emitter Voltage ( $I_B = 0$ )  | - 60       | V                |
| $V_{EBO}$ | Emitter-Base Voltage ( $I_C = 0$ )   | - 6        | V                |
| $I_C$     | Collector Current  | - 5        | A                |
| $P_{tot}$ | Total Dissipation at $T_{case} \leq 25\text{ }^\circ\text{C}$<br>$T_{amb} \leq 25\text{ }^\circ\text{C}$ | 5          | W                |
|           |  | 0.87       | W                |
| $T_{stg}$ | Storage Temperature  | -65 to 200 | $^\circ\text{C}$ |
| $T_j$     | Max. Operating Junction Temperature  | 200        | $^\circ\text{C}$ |

## BSS44

### THERMAL DATA

|                       |                                  |     |     |      |
|-----------------------|----------------------------------|-----|-----|------|
| R <sub>thj-case</sub> | Thermal Resistance Junction-case | Max | 35  | °C/W |
| R <sub>thj-amb</sub>  | Thermal Resistance Junction-amb  | Max | 200 | °C/W |

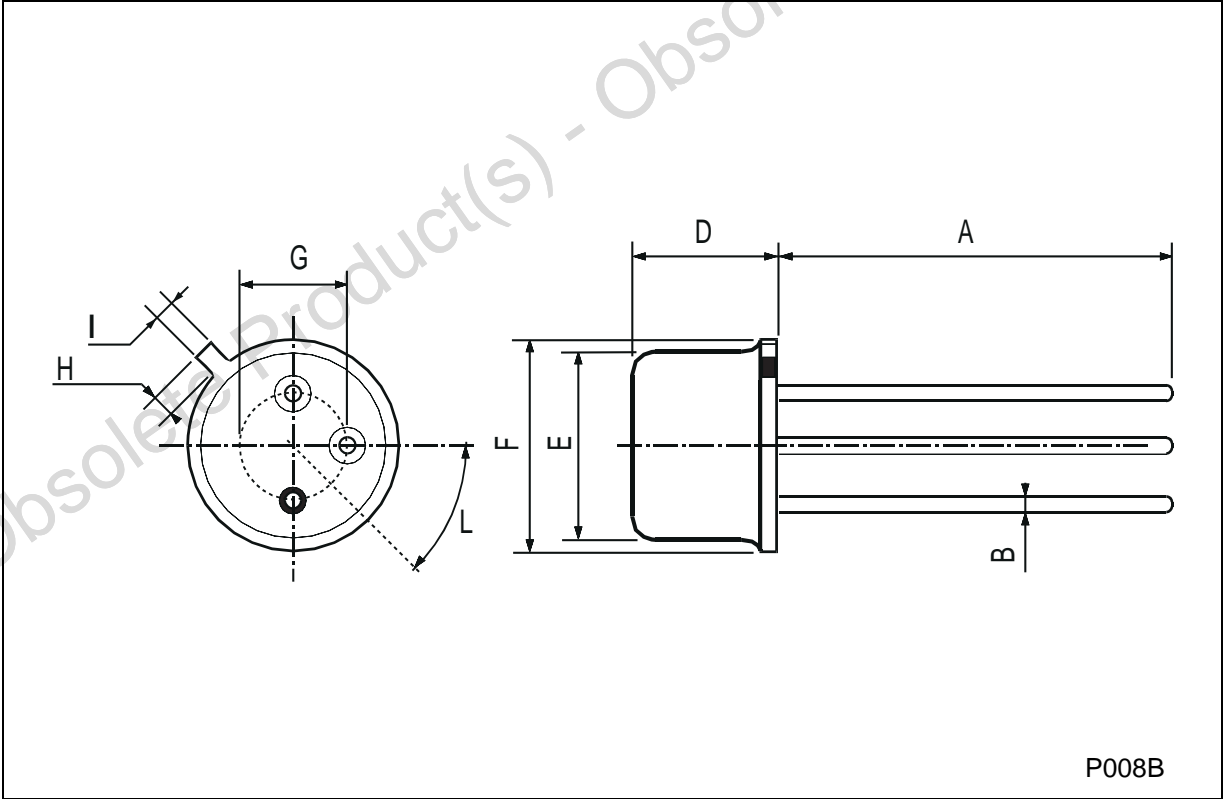
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

| Symbol                  | Parameter   | Test Conditions   |  | Min.     | Typ.         | Max. | Unit   |
|-------------------------|---|---|--|----------|--------------|------|--------|
| I <sub>CES</sub>        | Collector Cut-off Current (V <sub>BE</sub> =0)            | V <sub>CE</sub> = -60 V   |  |          |              | -0.5 | μA     |
| V <sub>(BR)CBO</sub> *  | Collector-base Breakdown Voltage (I <sub>E</sub> = 0)     | I <sub>C</sub> = -1 mA  |  | -65      |              |      | V      |
| V <sub>CEO(sus)</sub> * | Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0) | I <sub>C</sub> = -50 mA   |  | -60      |              |      | V      |
| V <sub>EBO</sub> *      | Emitter-base Voltage (I <sub>C</sub> = 0)                 | I <sub>E</sub> = -1 mA  |  | -6       |              |      | V      |
| V <sub>CE(sat)</sub> *  | Collector-Emitter Saturation Voltage                      | I <sub>C</sub> = -0.5 A<br>I <sub>C</sub> = -5 A                          | I <sub>B</sub> = -50 mA<br>I <sub>B</sub> = -0.5 A                         |          | -0.1<br>-0.4 | -1   | V<br>V |
| V <sub>BE(sat)</sub> *  | Base-Emitter Saturation Voltage                           | I <sub>C</sub> = -0.5 A<br>I <sub>C</sub> = -5 A                          | I <sub>B</sub> = -50 mA<br>I <sub>B</sub> = -0.5 A                         |          | -0.8<br>-1.1 | -1.6 | V<br>V |
| h <sub>FE</sub> *       | DC Current Gain   | I <sub>C</sub> = -0.5 A<br>I <sub>C</sub> = -2 A<br>I <sub>C</sub> = -5 A | V <sub>CE</sub> = -2 V<br>V <sub>CE</sub> = -2 V<br>V <sub>CE</sub> = -2 V | 30<br>40 | 70<br>45     |      |        |
| f <sub>T</sub> *        | Transition Frequency                                      | I <sub>C</sub> = -0.5 A   | V <sub>CE</sub> = -5 V   |          | 80           |      | MHz    |
| C <sub>CBO</sub>        | Collector-base Capacitance                                | I <sub>E</sub> = 0<br>f = 1 MHz   | V <sub>CB</sub> = 10 V   |          |              | 100  | pF     |
| t <sub>on</sub>         | Turn-on Time  | I <sub>C</sub> = -0.5 A   | V <sub>CC</sub> = -20 V  |          | 0.065        |      | μs     |
| t <sub>off</sub>        | Turn-off Time   | I <sub>B1</sub> = -I <sub>B2</sub> = -50 mA                               |  |          | 0.45         |      | μs     |

\* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

**TO-39 MECHANICAL DATA**

| DIM. | mm         |      |      | inch  |      |       |
|------|------------|------|------|-------|------|-------|
|      | MIN.       | TYP. | MAX. | MIN.  | TYP. | MAX.  |
| A    | 12.7       |      |      | 0.500 |      |       |
| B    |            |      | 0.49 |       |      | 0.019 |
| D    |            |      | 6.6  |       |      | 0.260 |
| E    |            |      | 8.5  |       |      | 0.334 |
| F    |            |      | 9.4  |       |      | 0.370 |
| G    | 5.08       |      |      | 0.200 |      |       |
| H    |            |      | 1.2  |       |      | 0.047 |
| I    |            |      | 0.9  |       |      | 0.035 |
| L    | 45° (typ.) |      |      |       |      |       |



P008B

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