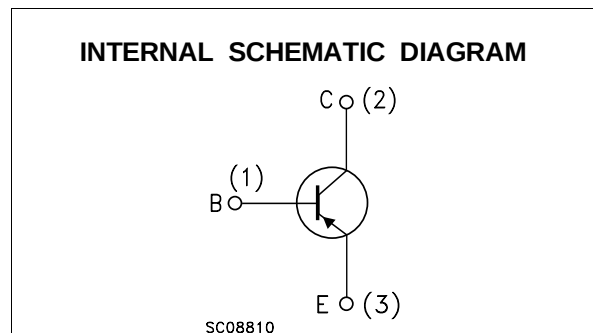
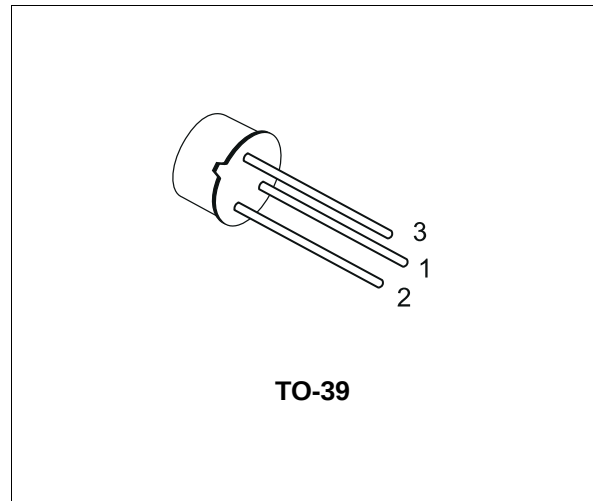


## SILICON PNP TRANSISTOR

- 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        | $^{\circ}\text{C}$ |

## 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 |

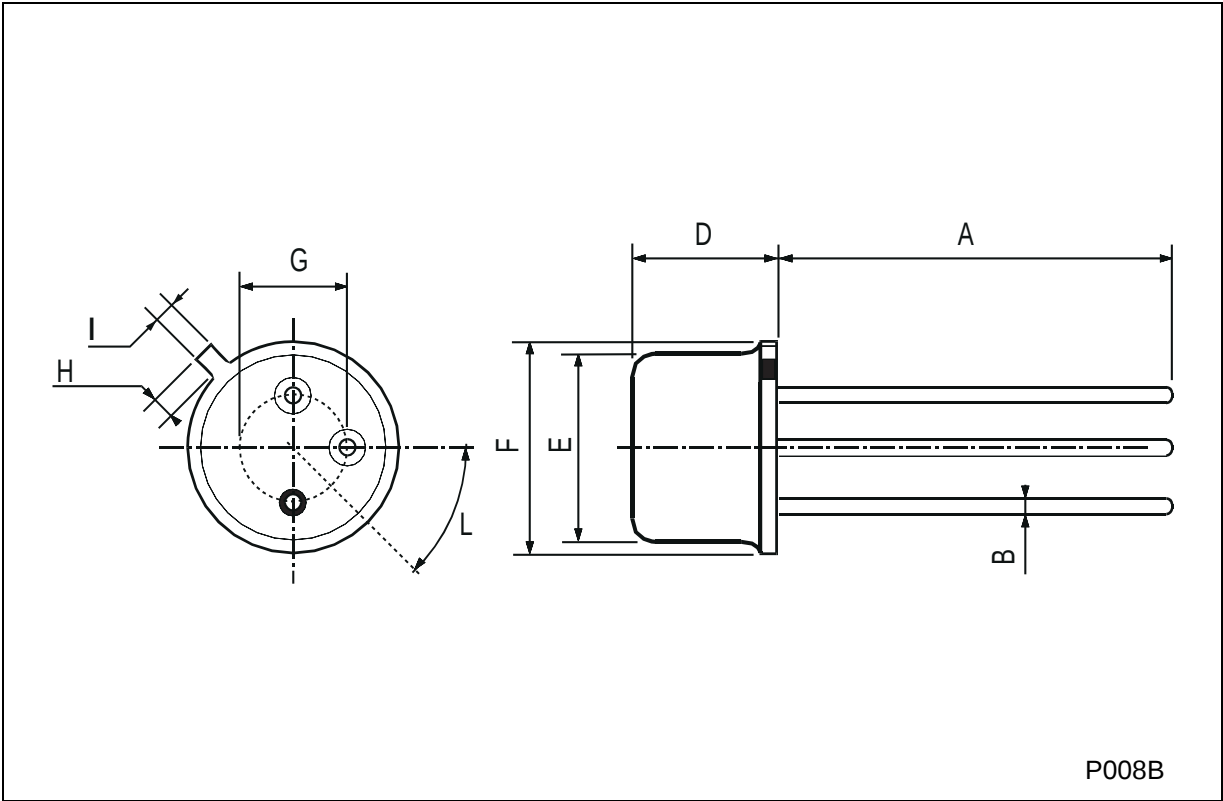
ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

| 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                     | I <sub>B</sub> = -50 mA |      | -0.1  |      | V    |
|                         |                                                           | I <sub>C</sub> = -5 A                       | I <sub>B</sub> = -0.5 A |      | -0.4  | -1   | V    |
| V <sub>BE(sat)</sub> *  | Base-Emitter Saturation Voltage                           | I <sub>C</sub> = -0.5 A                     | I <sub>B</sub> = -50 mA |      | -0.8  |      | V    |
|                         |                                                           | I <sub>C</sub> = -5 A                       | I <sub>B</sub> = -0.5 A |      | -1.1  | -1.6 | V    |
| h <sub>FE</sub> *       | DC Current Gain                                           | I <sub>C</sub> = -0.5 A                     | V <sub>CE</sub> = -2 V  | 30   |       |      |      |
|                         |                                                           | I <sub>C</sub> = -2 A                       | V <sub>CE</sub> = -2 V  | 40   | 70    |      |      |
|                         |                                                           | I <sub>C</sub> = -5 A                       | V <sub>CE</sub> = -2 V  |      | 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.) |      |      |       |      |       |



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