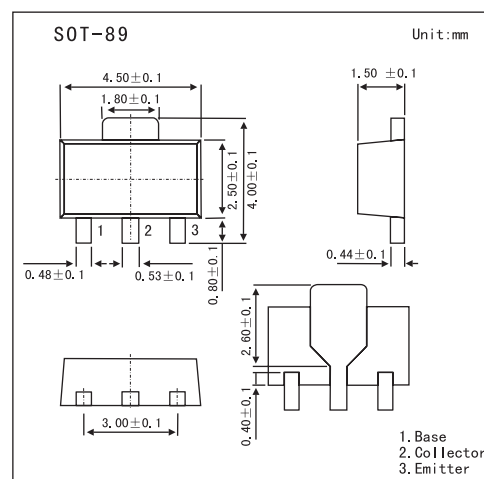


## NPN High-Voltage Transistors

## BST39; BST40

## ■ 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 BST39                              | $V_{CB0}$     | 400        | V                |
| (open emitter) BST40                                      |               | 300        | V                |
| collector-emitter voltage BST39                           | $V_{CE0}$     | 350        | V                |
| (open-base ) BST40                                        |               | 250        | V                |
| emitter-base voltage (open collector)                     | $V_{EB0}$     | 5          | V                |
| collector current (DC)                                    | $I_C$         | 100        | mA               |
| peak collector current                                    | $I_{CM}$      | 200        | mA               |
| peak base current                                         | $I_{BM}$      | 100        | mA               |
| total power dissipation $T_{amb} \leq 25^\circ\text{C}^*$ | $P_{tot}$     | 1.3        | W                |
| storage temperature                                       | $T_{stg}$     | -65 to 150 | $^\circ\text{C}$ |
| junction temperature                                      | $T_J$         | 150        | $^\circ\text{C}$ |
| operating ambient temperature                             | $T_{amb}$     | -65 to 150 | $^\circ\text{C}$ |
| thermal resistance from junction to ambient *             | $R_{th\ j-a}$ | 96         | K/W              |
| thermal resistance from junction to soldering point       | $R_{th\ j-s}$ | 16         | K/W              |

\* Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector  $6\text{ cm}^2$ .

**BST39; BST40**

■ Electrical Characteristics  $T_a = 25^\circ\text{C}$  unless otherwise specified.

| Parameter                            | Symbol      | Testconditions                                                       | Min | Typ | Max | Unit |
|--------------------------------------|-------------|----------------------------------------------------------------------|-----|-----|-----|------|
| collector cut-off current            | $I_{CBO}$   | $I_E = 0$ ; $V_{CB} = 300\text{ V}$                                  |     |     | 20  | nA   |
| emitter cut-off current              | $I_{EBO}$   | $I_C = 0$ ; $V_{EB} = 5\text{ V}$                                    |     |     | 100 | nA   |
| DC current gain                      | $h_{FE}$    | $I_C = 20\text{ mA}$ ; $V_{CE} = 10\text{ V}$                        |     |     | 40  |      |
| collector-emitter saturation voltage | $V_{CEsat}$ | $I_C = 50\text{ mA}$ ; $I_B = 4\text{ mA}$                           |     |     | 500 | mV   |
| collector capacitance                | $C_c$       | $I_E = I_E = 0$ ; $V_{CB} = 10\text{ V}$ ; $f = 1\text{ MHz}$        |     |     | 2   | pF   |
| transition frequency                 | $f_T$       | $I_C = 10\text{ mA}$ ; $V_{CE} = 10\text{ V}$ ; $f = 100\text{ MHz}$ | 70  |     |     | MHz  |

■ Marking

|             |       |       |
|-------------|-------|-------|
| Type Number | BST39 | BST40 |
| Marking     | AT1   | AT2   |