

# SOT89 NPN SILICON PLANAR HIGH VOLTAGE TRANSISTOR

ISSUE 4 – JUNE 1996



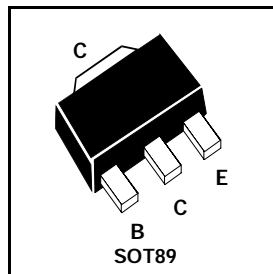
## BST39

### FEATURES

- \* Fast Switching
- \* High  $h_{FE}$ .

COMPLEMENTARY TYPE – BST16

PARTMAKING DETAIL – AT1



### ABSOLUTE MAXIMUM RATINGS.

| PARAMETER                                  | SYMBOL         | VALUE       | UNIT        |
|--|----------------|-------------|-------------|
| Collector-Base Voltage                     | $V_{CBO}$      | 400         | V           |
| Collector-Emitter Voltage                  | $V_{CEO}$      | 350         | V           |
| Emitter-Base Voltage                       | $V_{EBO}$      | 5           | V           |
| Peak Pulse Current                         | $I_{CM}$       | 1           | A           |
| Continuous Collector Current               | $I_C$          | 500         | mA          |
| Power Dissipation at $T_{amb}=25^{\circ}C$ | $P_{tot}$      | 1           | W           |
| Operating and Storage Temperature Range    | $T_j; T_{stg}$ | -65 to +150 | $^{\circ}C$ |

### ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$ unless otherwise stated).

| PARAMETER                             | SYMBOL        | MIN. | MAX. | UNIT | CONDITIONS.                    |
|---------------------------------------|---------------|------|------|------|--------------------------------|
| Collector-Base Breakdown Voltage      | $V_{(BR)CBO}$ | 400  |      | V    | $I_C=10\mu A$                  |
| Collector-Emitter Breakdown Voltage   | $V_{(BR)CEO}$ | 350  |      | V    | $I_C=1mA^*$                    |
| Emitter-Base Breakdown Voltage        | $V_{(BR)EBO}$ | 5    |      | V    | $I_E=10\mu A$                  |
| Collector Cut-Off Current             | $I_{CBO}$     |      | 20   | nA   | $V_{CB}=300V$                  |
| Collector-Emitter Saturation Voltage  | $V_{CE(sat)}$ |      | 0.5  | V    | $I_C=50mA, I_B=4mA$            |
| Base-Emitter Saturation Voltage       | $V_{BE(sat)}$ |      | 1.3  | V    | $I_C=50mA, I_B=4mA$            |
| Static Forward Current Transfer Ratio | $h_{FE}$      | 40   |      |      | $I_C=20mA, V_{CE}=10V^*$       |
| Output Capacitance                    | $C_{obo}$     |      | 2    | pF   | $V_{CB}=10V, f=1MHz$           |
| Input Capacitance                     | $C_{ibo}$     |      | 20   | pF   | $V_{EB}=10V, f=1MHz$           |
| Transition Frequency                  | $f_T$         | 70   |      | MHz  | $I_C=10mA, V_{CE}=10V, f=5MHz$ |

\* Measured under pulsed conditions. Pulse width=300 $\mu s$ . Duty cycle  $\leq 2\%$   
For typical characteristics graphs see FMMT458 datasheet.