

# 2SC3910

## Silicon NPN Triple-Diffused Junction Mesa Type

High Speed Switching

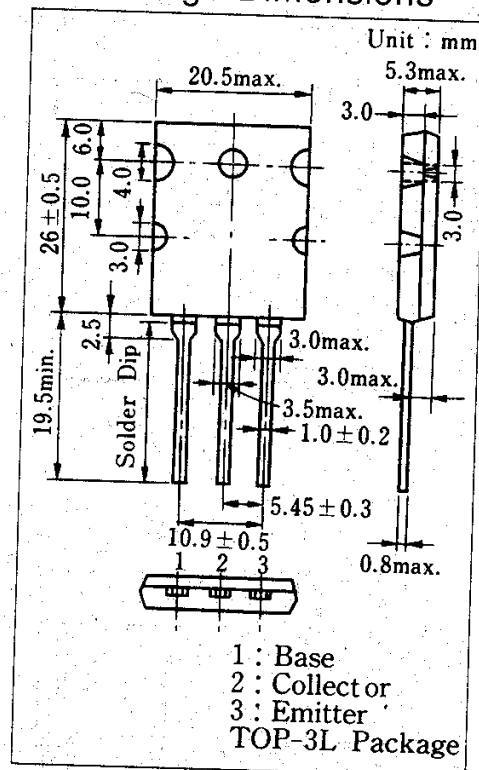
### ■ Features

- High speed switching
- High collector-base voltage ( $V_{CB0}$ )
- Wide area of safety operation (ASO)
- Good linearity of  $h_{FE}$

### ■ Absolute Maximum Ratings ( $T_c=25^\circ\text{C}$ )

| Item                        | Symbol    | Value                  | Unit             |   |
|-----------------------------|-----------|------------------------|------------------|---|
| Collector-base voltage      | $V_{CB0}$ | 800                    | V                |   |
| Collector-emitter voltage   | $V_{CES}$ | 800                    | V                |   |
|                             | $V_{CEO}$ | 500                    | V                |   |
| Emitter-base voltage        | $V_{EBO}$ | 7                      | V                |   |
| Peak collector current      | $I_{CP}$  | 30                     | A                |   |
| Collector current           | $I_C$     | 15                     | A                |   |
| Base current                | $I_B$     | 5                      | A                |   |
| Collector power dissipation | $P_C$     | $T_c=25^\circ\text{C}$ | 150              | W |
|                             |           | $T_a=25^\circ\text{C}$ | 3.5              |   |
| Junction temperature        | $T_j$     | 150                    | $^\circ\text{C}$ |   |
| Storage temperature         | $T_{stg}$ | -55 ~ +150             | $^\circ\text{C}$ |   |

### ■ Package Dimensions



### ■ Electrical Characteristics ( $T_c=25^\circ\text{C}$ )

| Item                                 | Symbol         | Condition   | min. | typ. | max. | Unit          |
|--------------------------------------|----------------|---|------|------|------|---------------|
| Collector cutoff current             | $I_{CBO}$      | $V_{CB}=800\text{V}, I_E=0$                           |      |      | 100  | $\mu\text{A}$ |
| Emitter cutoff current               | $I_{EBO}$      | $V_{EB}=7\text{V}, I_C=0$                             |      |      | 0.1  | mA            |
| Collector-emitter voltage            | $V_{CEO(sus)}$ | $I_C=0.5\text{A}, L=25\text{mH}$                      | 500  |      |      | V             |
| DC current gain                      | $h_{FE1}$      | $V_{CE}=5\text{V}, I_C=0.1\text{A}$                   | 15   |      |      |               |
|                                      | $h_{FE2}$      | $V_{CE}=5\text{V}, I_C=8\text{A}$                     | 10   |      |      |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$  | $I_C=8\text{A}, I_B=1.6\text{A}$                      |      |      | 1    | V             |
| Base-emitter saturation voltage      | $V_{BE(sat)}$  | $I_C=8\text{A}, I_B=1.6\text{A}$                      |      |      | 1.5  | V             |
| Turn-on time                         | $t_{on}$       | $I_C=8\text{A}$                                       |      |      | 1    | $\mu\text{s}$ |
| Storage time                         | $t_{stg}$      | $I_{B1}=1.6\text{A}, I_{B2}=-1.6\text{A}$             |      |      | 3    | $\mu\text{s}$ |
| Collector current fall time          | $t_f$          | $V_{CC}=200\text{V}$                                  |      |      | 1    | $\mu\text{s}$ |
| Transition frequency                 | $f_T$          | $V_{CE}=10\text{V}, I_C=0.5\text{A}, f=0.5\text{MHz}$ |      | 2    |      | MHz           |