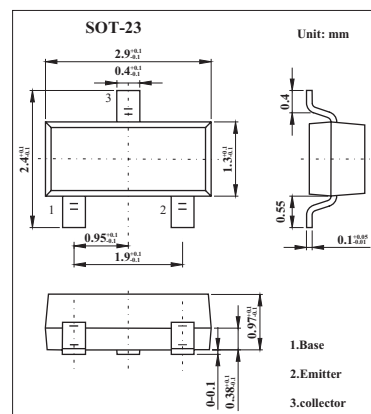


## NPN Silicon Epitaxia

## 2SC3739

## ■ Features

- High gain bandwidth product:  $f_T=200\text{MHz}$ .

■ Absolute Maximum Ratings  $T_a = 25^\circ\text{C}$ 

| Parameter  | Symbol    | Rating      | Unit             |
|--|-----------|-------------|------------------|
| Collector-base voltage   | $V_{CB0}$ | 60          | V                |
| Collector-emitter voltage  | $V_{CEO}$ | 40          | V                |
| Emitter-base voltage   | $V_{EBO}$ | 5           | V                |
| Collector current  | $I_C$     | 500         | mA               |
| Total power dissipation<br>at $25^\circ\text{C}$ ambient temperature | $P_T$     | 200         | mW               |
| Junction temperature   | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature  | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

■ Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

| Parameter                              | Symbol        | Testconditions                                    | Min | Typ  | Max  | Unit |
|--|---------------|---|-----|------|------|------|
| Collector cutoff current               | $I_{CBO}$     | $V_{CB} = 40\text{V}, I_E = 0$                    |     |      | 100  | nA   |
| Emitter cutoff current                 | $I_{EBO}$     | $V_{EB} = 4\text{V}, I_C = 0$                     |     |      | 100  | nA   |
| DC current gain *                      | $h_{FE}$      | $V_{CE} = 1\text{V}, I_C = 150\text{mA}$          | 75  | 150  | 300  |      |
| Collector-emitter saturation voltage * | $V_{CE(sat)}$ | $I_C = 500\text{mA}, I_B = 50\text{mA}$           |     | 0.25 | 0.75 | V    |
| Base-emitter saturation voltage *      | $V_{BE(sat)}$ | $I_C = 500\text{mA}, I_B = 50\text{mA}$           |     | 1.0  | 1.2  | V    |
| Gain bandwidth product                 | $f_T$         | $V_{CE} = 10\text{V}, I_E = -20\text{mA}$         | 200 | 400  |      | MHz  |
| Output capacitance                     | $C_{ob}$      | $V_{CB} = 10\text{V}, I_E = 0, f = 1.0\text{MHz}$ |     | 3.5  | 8.0  | pF   |
| Turn-on time                           | $t_{on}$      | $V_{CC} = 30\text{V},$                            |     |      | 35   | ns   |
| Storage time                           | $t_{stg}$     | $I_C = 150\text{mA},$                             |     |      | 225  | ns   |
| Turn-off time                          | $t_{off}$     | $I_{B1} = -I_{B2} = 15\text{mA}$                  |     |      | 275  | ns   |

\*.  $PW \leq 350\mu\text{s}, \text{duty cycle} \leq 2\%$

## ■ hFE Classification

| Marking | B12    | B13     | B14     |
|---------|--------|---------|---------|
| hFE     | 75~150 | 100~200 | 150~300 |