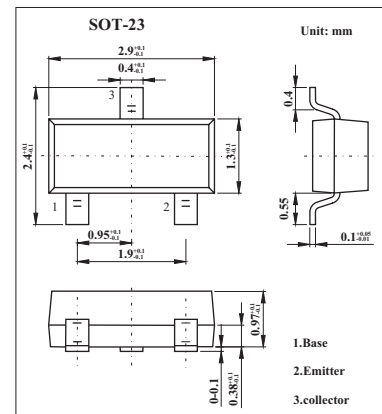


## NPN Silicon Epitaxial Transistor

## 2SC1654

## ■ Features

- High Voltage  $V_{CE0} = 160V$
- High DC Current Gain :  $h_{FE} = 130$  Typ. ( $V_{CE} = 3.0V, I_C = 15mA$ )

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

| Parameter                     | Symbol    | Rating      | Unit       |
|-------------------------------|-----------|-------------|------------|
| Collector-Emitter Voltage     | $V_{CE0}$ | 160         | V          |
| Collector-Base Voltage        | $V_{CB0}$ | 180         | V          |
| Emitter-Base Voltage          | $V_{EB0}$ | 5.0         | V          |
| Collector Current- Continuous | $I_C$     | 50          | mA         |
| Power Dissipation             | $P_T$     | 150         | mW         |
| Jumction temperature          | $T_j$     | 125         | $^\circ C$ |
| Storage temperature           | $T_{stg}$ | -55 to +125 | $^\circ C$ |

■ Electrical Characteristics  $T_a = 25^\circ C$ 

| Parameter                    | Symbol        | Testconditons                     | Min | Typ  | Max | Unit    |
|------------------------------|---------------|-----------------------------------|-----|------|-----|---------|
| Collector Cut-off Current    | $I_{CBO}$     | $V_{CB} = 130V, I_E = 0$          |     |      | 0.1 | $\mu V$ |
| Emitter Cut-off Current      | $I_{EBO}$     | $V_{EB} = 5.0V, I_C = 0$          |     |      | 0.1 | $\mu V$ |
| DC Current Gain              | $h_{FE1}$     | $V_{CE} = 3.0V, I_C = 1.0mA$      | 70  | 180  |     |         |
|                              | $h_{FE2}^*$   | $V_{CE} = 3.0V, I_C = 15mA$       | 90  | 200  | 400 |         |
| Collector Saturation Voltage | $V_{CE(sat)}$ | $I_C = 50mA, I_B = 5.0mA$         |     | 0.1  | 0.3 | V       |
| Base Saturation Voltage      | $V_{BE(sat)}$ | $I_C = 50mA, I_B = 5.0mA$         |     | 0.73 | 1.0 | V       |
| Gain Bandwidth Product       | $f_T$         | $V_{CE} = 10V, I_E = -10mA$       |     | 120  |     | MHz     |
| Output Capacitance           | $C_{OB}$      | $V_{CB} = 10V, I_E = 0, f = 1MHz$ |     | 2.3  |     | pF      |

\* Pulse :  $PW \leq 350\mu s, D.C. \leq 2\%$ .

■  $h_{FE}$  Classification

| Marking   | N5       | N6        | N7        |
|-----------|----------|-----------|-----------|
| $h_{FE2}$ | 90 ~ 180 | 135 ~ 270 | 200 ~ 400 |