

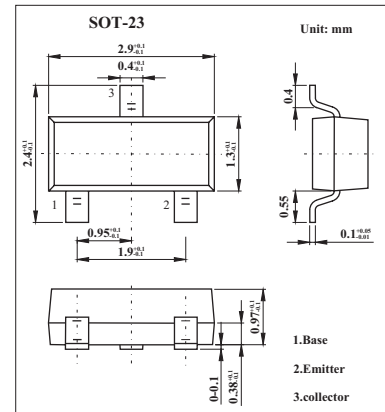
## ■ Features

- Low noise and high gain.

NF = 1.1 dB Typ.,  $G_a = 11$  dB Typ. @  $V_{CE} = 10$  V,  $I_c = 7$  mA,  $f = 1.0$  GHz

- High power gain.

MAG = 13 dB Typ. @  $V_{CE} = 10$  V,  $I_c = 20$  mA,  $f = 1.0$  GHz



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

| Parameter                    | Symbol    | Rating      | Unit             |
|------------------------------|-----------|-------------|------------------|
| Collector to base voltage    | $V_{CBO}$ | 20          | V                |
| Collector to emitter voltage | $V_{CEO}$ | 12          | V                |
| Emitter to base voltage      | $V_{EBO}$ | 3.0         | V                |
| Collector current (DC)       | $I_c$     | 100         | mA               |
| Total power dissipation      | $P_{tot}$ | 200         | mW               |
| Junction temperature         | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature range    | $T_{stg}$ | -65 to +150 | $^\circ\text{C}$ |

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

| Parameter                    | Symbol        | Testconditions                              | Min | Typ  | Max | Unit          |
|------------------------------|---------------|---------------------------------------------|-----|------|-----|---------------|
| Collector cutoff current     | $I_{CBO}$     | $V_{CB} = 10$ V, $I_E = 0$ mA               |     |      | 1.0 | $\mu\text{A}$ |
| Emitter cutoff current       | $I_{EBO}$     | $V_{EB} = 1.0$ V, $I_c = 0$ mA              |     |      | 1.0 | $\mu\text{A}$ |
| DC current gain *            | $h_{FE}$      | $V_{CE} = 10$ V, $I_c = 20$ mA              | 50  | 120  | 250 |               |
| Insertion power gain         | $ S_{21e} ^2$ | $V_{CE} = 10$ V, $I_c = 20$ mA, $f = 1$ GHz |     | 11.5 |     | dB            |
| Noise figure                 | NF            | $V_{CE} = 10$ V, $I_c = 7$ mA, $f = 1$ GHz  |     | 1.1  | 2.0 | dB            |
| Reverse transfer capacitance | $C_{re}$      | $V_{CB} = 10$ V, $I_E = 0$ mA, $f = 1$ MHz  |     | 0.55 | 1.0 | pF            |
| Transition frequency         | $f_t$         | $V_{CE} = 10$ V, $I_c = 20$ mA              |     | 7    |     | GHz           |

\*. Pulse measurement:  $PW \leq 350 \mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

## ■ $h_{FE}$ Classification

| Marking  | R23    | R24    | R25     |
|----------|--------|--------|---------|
| Rank     | Q      | R      | S       |
| $h_{FE}$ | 50~100 | 80~160 | 125~250 |