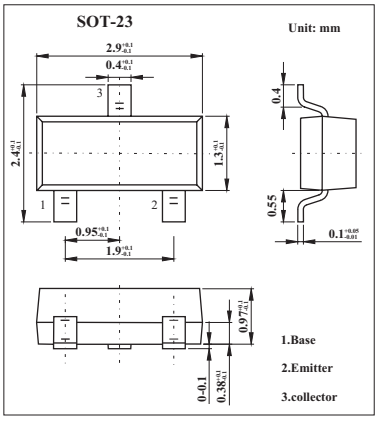
TY Semicondutor®

**Product specification**

# BF821,BF823




## ■ Features

- Low current (max. 50 mA)
- High voltage (max. 300 V).

## ■ Absolute Maximum Ratings Ta = 25℃

| Parameter | | Symbol | Rating | Unit |
|---|---|---|---|---|
| Collector-base voltage | BF821 | $V_{CBO}$ | -300 | V |
| | BF823 | | -250 | V |
| Collector-emitter voltage | BF821 | $V_{CEO}$ | -300 | V |
| | BF823 | | -250 | V |
| Emitter-base voltage | | $V_{EBO}$ | -5 | V |
| Collector current | | $I_C$ | -50 | mA |
| Peak collector current | | $I_{CM}$ | -100 | mA |
| Peak base current | | $I_{BM}$ | -50 | mA |
| Total power dissipation * | | $P_{tot}$ | 250 | mW |
| Storage temperature | | $T_{stg}$ | -65 to +150 | ℃ |
| Junction temperature | | $T_j$ | 150 | ℃ |
| Operating ambient temperature | | $R_{amb}$ | -65 to +150 | ℃ |
| Thermal resistance from junction to ambient * | | $R_{th\ j\text{-}a}$ | 500 | K/W |

* Transistor mounted on an FR4 printed-circuit board.

## ■ Electrical Characteristics Ta = 25℃

| Parameter | Symbol | Testconditons | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector cutoff current | $I_{CBO}$ | $I_E$ = 0; $V_{CB}$ = -200 V | | | -10 | nA |
| | | $I_E$ = 0; $V_{CB}$ = -200 V; $T_j$ = 150 ℃ | | | -10 | μA |
| Emitter cutoff current | $I_{EBO}$ | $I_C$ = 0; $V_{EB}$ = -5 V | | | -50 | nA |
| DC current gain | $h_{FE}$ | $I_C$ = -25 mA; $V_{CE}$ = -20 V | 50 | | | |
| collector-emitter saturation voltage | $V_{CEsat}$ | $I_C$ = -30 mA; $I_B$ = -5 mA | | | -800 | mV |
| Feedback capacitance | $C_{re}$ | $I_C$ = ic = 0; $V_{CB}$ = -30 V; f = 1 MHz | | | 1.6 | pF |
| Transition frequency | $f_T$ | $I_C$ = -10 mA; $V_{CE}$ = -10 V; f = 100 MHz | 60 | | | MHz |

## ■ $h_{FE}$ Classification

| TYPE | BF821 | BF823 |
|---|---|---|
| Marking | 1W | 1Y |