

SOT-23 Formed SMD Package

**BF821
BF823**

SILICON EPITAXIAL TRANSISTORS

P-N-P transistors

Marking

BF821 = 1W

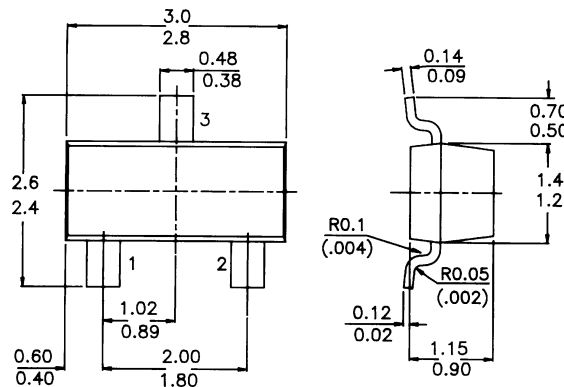
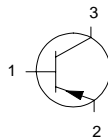
BF823 = 1Y

PACKAGE OUTLINE DETAILS

ALL DIMENSIONS IN mm

Pin configuration

- 1 = BASE
- 2 = EMITTER
- 3 = COLLECTOR



ABSOLUTE MAXIMUM RATINGS

| | BF821 | BF823 |
|---|---------------------|------------------|
| Collector-base voltage (open emitter) | $-V_{CB0}$ max. 300 | 250 V |
| Collector-emitter voltage (open base) | $-V_{CE0}$ max. — | 250 V |
| Collector-emitter voltage ($R_{BE} = 2,7 \text{ kW}$) | $-V_{CER}$ max. 300 | — V |
| Collector current (peak value) | $-I_{CM}$ max. 100 | mA |
| Total power dissipation up to $T_{amb} = 25 \text{ }^\circ\text{C}$ | P_{tot} max. 250 | mW |
| Junction temperature | T_j max. 150 | $^\circ\text{C}$ |
| D.C. current gain | h_{FE} > | 50 |
| Feedback capacitance at $f = 1 \text{ MHz}$ | C_{re} < | 1,6 pF |
| Transition frequency at $f = 35 \text{ MHz}$ | f_T > | 60 MHz |

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RATINGS (at $T_A = 25^\circ\text{C}$ unless otherwise specified)

Limiting values

| | BF821 | BF823 |
|---|----------------------------|------------------|
| Collector-base voltage (open emitter) | $-V_{CB0}$ max. 300 | 250 V |
| Collector-emitter voltage (open base) | $-V_{CE0}$ max. — | 250 V |
| Collector-emitter voltage ($R_{BE} = 2,7 \text{ kW}$) | $-V_{CER}$ max. 300 | — V |
| Emitter-base voltage (open collector) | $-V_{EB0}$ max. 5 | V |
| Collector current (d.c.) | $-I_C$ max. 50 | mA |
| Collector current (peak value) | $-I_{CM}$ max. 100 | mA |
| Total power dissipation up to $T_{amb} = 25^\circ\text{C}$ | P_{tot} max. 250 | mW |
| Storage temperature | T_{stg} max. -55 to +150 | $^\circ\text{C}$ |
| Junction temperature | T_j max. 150 | $^\circ\text{C}$ |

THERMAL RESISTANCE

From junction to ambient

| | | |
|---------------|-----|----|
| $R_{th\ j-a}$ | 500 | KW |
|---------------|-----|----|

CHARACTERISTICS

$T_j = 25^\circ\text{C}$ unless otherwise specified

Collector cut-off current

$I_E = 0; -V_{CB} = 200\text{V}$

| | BF821 | BF823 |
|--------------|--------------|--------------|
| $-I_{CB0} <$ | 10 | 10 nA |
| $-I_{CER} <$ | 50 | 50 nA |
| $-I_{CER} <$ | 10 | 10 mA |

Collector-emitter voltage

$R_{BE} = 2,7 \text{ kW}; V_{CE} = 250 \text{ V}$

$R_{BE} = 2,7 \text{ kW}; V_{CE} = 200\text{V}; T_j = 150^\circ\text{C}$

Saturation voltage

$-I_C = 30 \text{ mA}; -I_B = 5 \text{ mA}$

| | | |
|----------------|-----|---|
| $-V_{CEsat} <$ | 0,8 | V |
|----------------|-----|---|

D.C. current gain

$I_C = 25 \text{ mA}; -V_{CE} = 20 \text{ V}$

| | | |
|------------|----|--|
| $h_{FE} >$ | 50 | |
|------------|----|--|

Transition frequency at $f = 35 \text{ MHz}$

$-I_C = 10 \text{ mA}; -V_{CE} = 10 \text{ V}$

| | | |
|---------|----|-----|
| $f_T >$ | 60 | MHz |
|---------|----|-----|

Feedback capacitance at $f = 1 \text{ MHz}$

$I_C = 0; -V_{CE} = 30 \text{ V}$

| | | |
|------------|-----|----|
| $C_{re} <$ | 1,6 | pF |
|------------|-----|----|

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