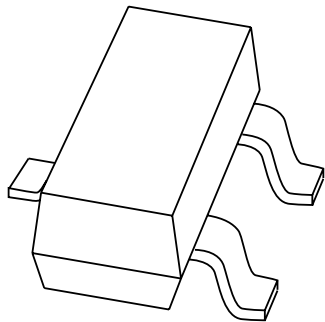


# DATA SHEET



## **BF821; BF823** PNP high-voltage transistors

Product specification  
Supersedes data of 1999 Apr 15

2004 Jan 16

# PNP high-voltage transistors

# BF821; BF823

### FEATURES

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

### APPLICATIONS

- Telephony and professional communication equipment.

### DESCRIPTION

PNP transistor in a SOT23 plastic package.  
 NPN complements: BF820, BF822.

### MARKING

TYPE NUMBER	MARKING CODE <sup>(1)</sup>
BF821	1W*
BF823	1Y*

### Note

- \* = p : Made in Hong Kong.  
 \* = t : Made in Malaysia.  
 \* = W : Made in China.

### PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector

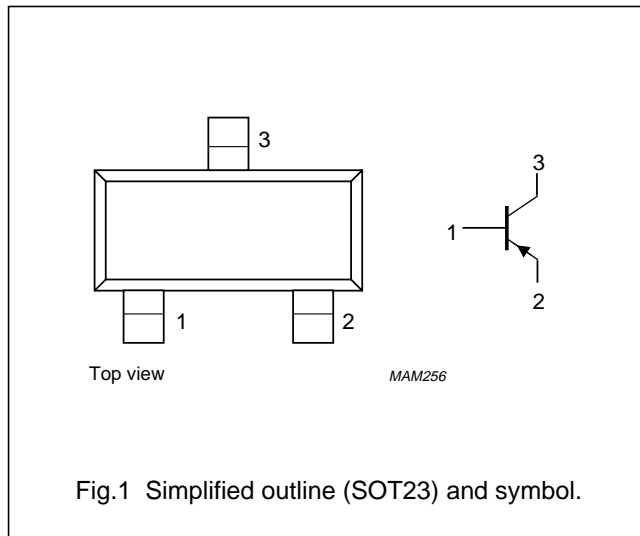


Fig.1 Simplified outline (SOT23) and symbol.

### ORDERING INFORMATION

TYPENUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BF821	–	plastic surface mounted package; 3 leads	SOT23
BF823	–	plastic surface mounted package; 3 leads	SOT23

## PNP high-voltage transistors

## BF821; BF823

**LIMITING VALUES**

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>CBO</sub>	collector-base voltage	open emitter	–	–300	V
	BF821				
V <sub>CEO</sub>	collector-emitter voltage	open base	–	–300	V
	BF823				
V <sub>EBO</sub>	emitter-base voltage	open collector	–	–5	V
I <sub>C</sub>	collector current (DC)		–	–50	mA
I <sub>CM</sub>	peak collector current		–	–100	mA
I <sub>BM</sub>	peak base current		–	–50	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C; note 1	–	250	mW
T <sub>stg</sub>	storage temperature		–65	+150	°C
T <sub>j</sub>	junction temperature		–	150	°C
T <sub>amb</sub>	operating ambient temperature		–65	+150	°C

**Note**

1. Transistor mounted on an FR4 printed-circuit board.

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R <sub>th(j-a)</sub>	thermal resistance from junction to ambient	note 1	500	K/W

**Note**

1. Transistor mounted on an FR4 printed-circuit board.

**CHARACTERISTICS**

T<sub>j</sub> = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I <sub>CBO</sub>	collector-base cut-off current	I <sub>E</sub> = 0; V <sub>CB</sub> = –200 V	–	–10	nA
		I <sub>E</sub> = 0; V <sub>CB</sub> = –200 V; T <sub>j</sub> = 150 °C	–	–10	μA
I <sub>EBO</sub>	emitter-base cut-off current	I <sub>C</sub> = 0; V <sub>EB</sub> = –5 V	–	–50	nA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> = –25 mA; V <sub>CE</sub> = –20 V	50	–	
V <sub>CEsat</sub>	collector-emitter saturation voltage	I <sub>C</sub> = –30 mA; I <sub>B</sub> = –5 mA	–	–800	mV
C <sub>re</sub>	feedback capacitance	I <sub>C</sub> = I <sub>c</sub> = 0; V <sub>CB</sub> = –30 V; f = 1 MHz	–	1.6	pF
f <sub>T</sub>	transition frequency	I <sub>C</sub> = –10 mA; V <sub>CE</sub> = –10 V; f = 100 MHz	60	–	MHz

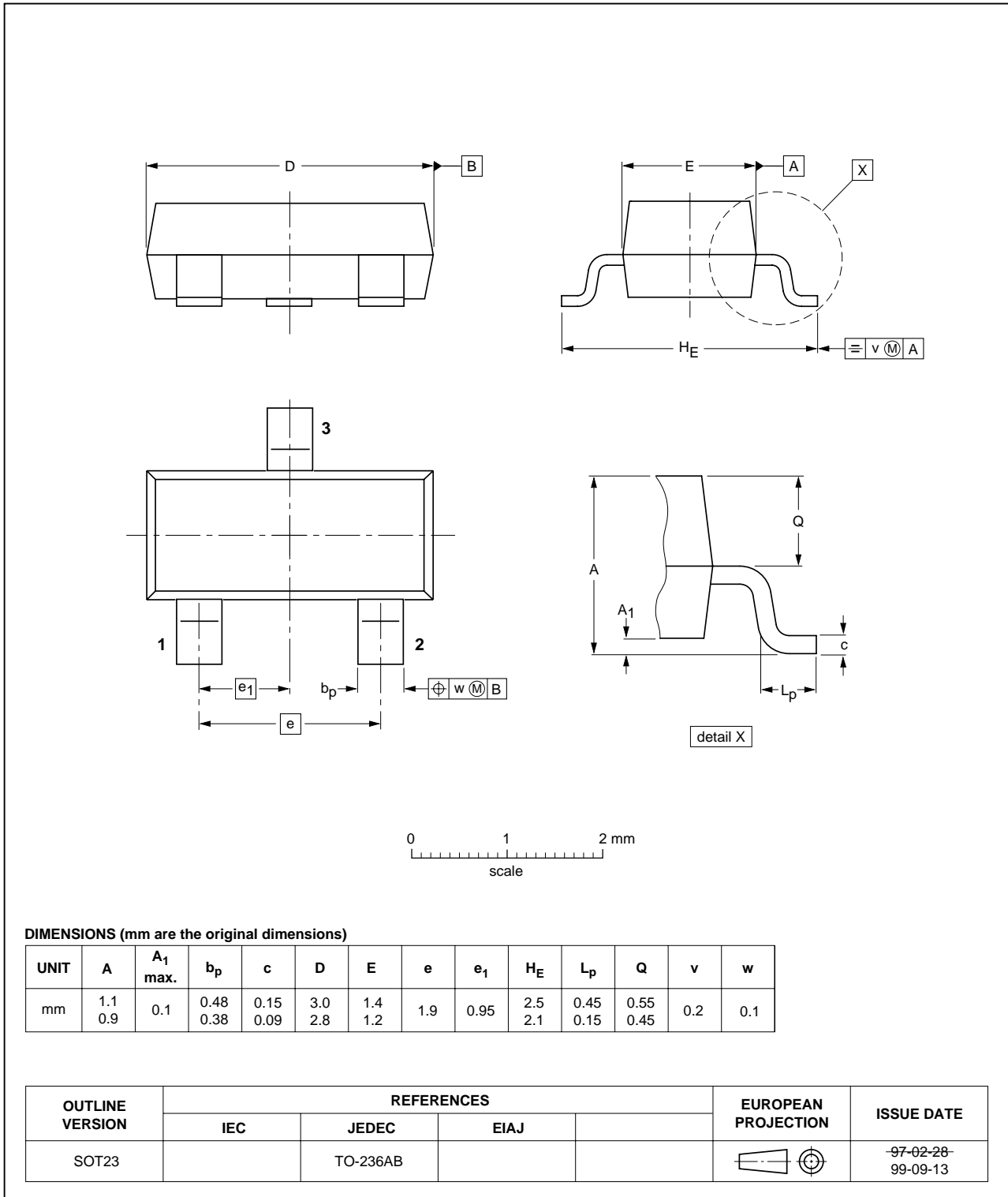
PNP high-voltage transistors

BF821; BF823

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



## PNP high-voltage transistors

BF821; BF823

## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
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