

# DATA SHEET



**BF570**

**NPN medium frequency transistor**

Product data sheet  
Supersedes data of 2004 Jan 13

2004 Mar 15

# NPN medium frequency transistor

# BF570

### FEATURES

- Low current (max. 100 mA)
- Low voltage (max. 15 V)
- Low feedback capacitance (max. 2.2 pF).

### APPLICATIONS

- Monitors
- Battery equipped applications.

### DESCRIPTION

NPN transistor in a SOT23 plastic package.

### MARKING

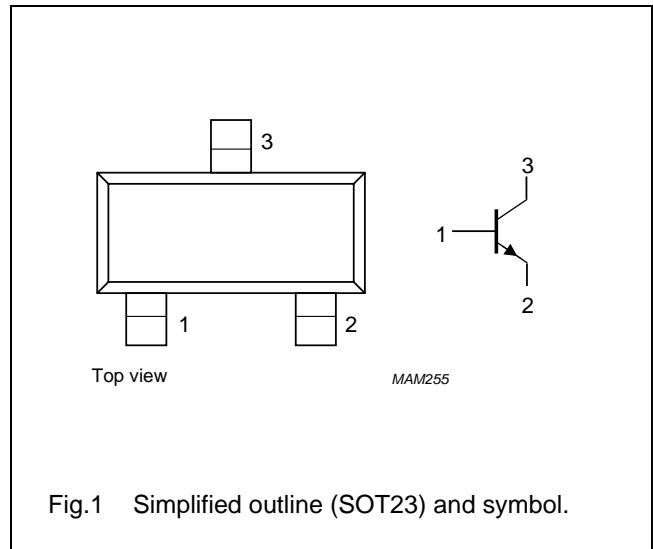
TYPE NUMBER	MARKING CODE <sup>(1)</sup>
BF570	61* or B26

### Note

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

### PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



### ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BF570	–	plastic surface mounted package; 3 leads	SOT23

### QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>CB0</sub>	collector-base voltage	open emitter	–	40	V
V <sub>CEO</sub>	collector-emitter voltage	open base	–	15	V
I <sub>CM</sub>	peak collector current		–	200	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C	–	250	mW
h <sub>FE</sub>	DC current gain	I <sub>C</sub> = 10 mA; V <sub>CE</sub> = 1 V	40	–	
f <sub>T</sub>	transition frequency	I <sub>C</sub> = 40 mA; V <sub>CE</sub> = 10 V; f = 100 MHz	490	–	MHz

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**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{CBO}$	collector-base voltage	open emitter	–	40	V
$V_{CEO}$	collector-emitter voltage	open base	–	15	V
$V_{EBO}$	emitter-base voltage	open collector	–	4.5	V
$I_C$	collector current (DC)		–	100	mA
$I_{CM}$	peak collector current		–	200	mA
$P_{tot}$	total power dissipation	$T_{amb} \leq 25\text{ °C}$	–	250	mW
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C
$T_{amb}$	operating ambient temperature		–65	+150	°C

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th(j-a)}$	thermal resistance from junction to ambient	500	K/W

**CHARACTERISTICS** $T_j = 25\text{ °C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$I_{CBO}$	collector cut-off current	$I_E = 0\text{ A}; V_{CB} = 20\text{ V}$	–	–	400	nA
		$I_E = 0\text{ A}; V_{CB} = 20\text{ V}; T_j = 125\text{ °C}$	–	–	30	$\mu\text{A}$
$I_{EBO}$	emitter cut-off current	$I_C = 0\text{ A}; V_{EB} = 2\text{ V}$	–	–	100	nA
$h_{FE}$	DC current gain	$I_C = 10\text{ mA}; V_{CE} = 1\text{ V}$	40	–	–	
$C_{re}$	feedback capacitance	$I_C = 0\text{ A}; V_{CE} = 10\text{ V}; f = 1\text{ MHz}$	–	1.6	2.2	pF
$f_T$	transition frequency	$I_C = 10\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz}$	500	–	–	MHz
		$I_C = 40\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz}$	490	–	–	MHz

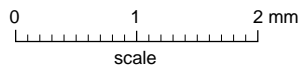
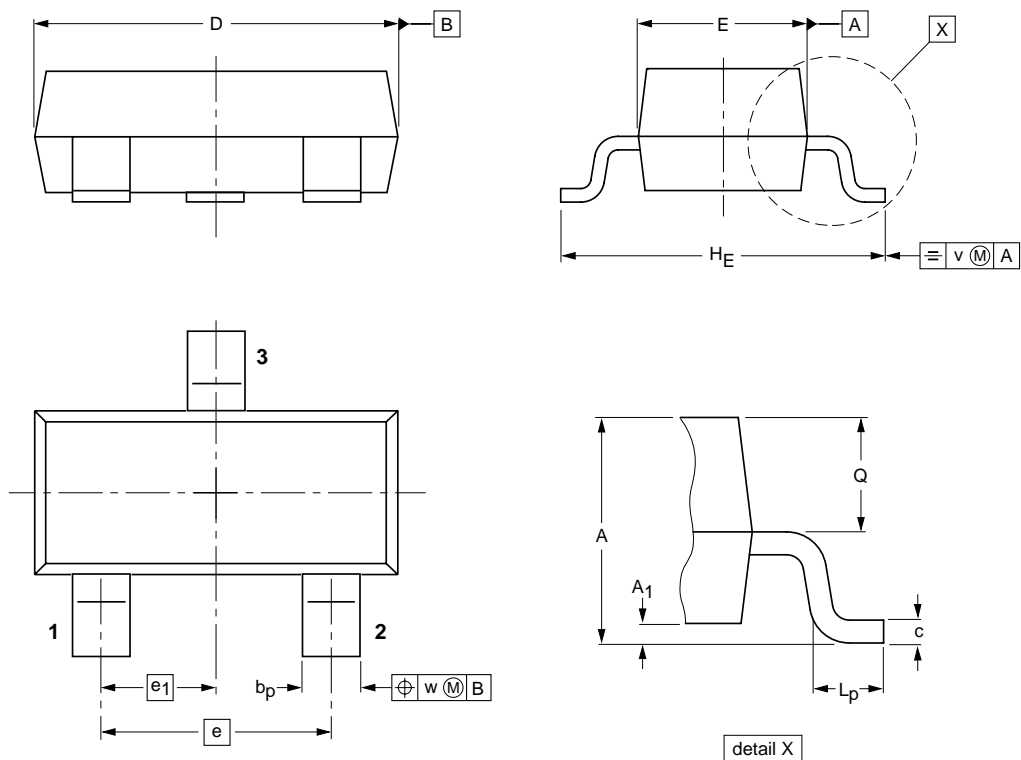
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PACKAGE OUTLINE

Plastic surface-mounted package; 3 leads

SOT23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max.	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT23		TO-236AB				04-11-04 06-03-16

## NPN medium frequency transistor

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## DATA SHEET STATUS

DOCUMENT STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

## Notes

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# ***NXP Semiconductors***

## **Customer notification**

This data sheet was changed to reflect the new company name NXP Semiconductors, including new legal definitions and disclaimers. No changes were made to the technical content, except for package outline drawings which were updated to the latest version.

## **Contact information**

For additional information please visit: <http://www.nxp.com>

For sales offices addresses send e-mail to: [salesaddresses@nxp.com](mailto:salesaddresses@nxp.com)

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### Наши контакты:

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331