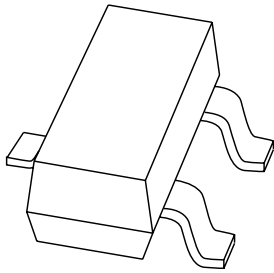


# DATA SHEET



**BCX19**

**NPN general purpose transistor**

Product data sheet  
Supersedes data of 2000 Jul 28

2004 Jan 16

# NPN general purpose transistor

# BCX19

### FEATURES

- High current (500 mA)
- Low voltage (45 V).

### APPLICATIONS

- General purpose amplification
- Saturated switching and driver applications.

### DESCRIPTION

NPN transistor in a SOT23 plastic package.  
PNP complement: BCX17.

### MARKING

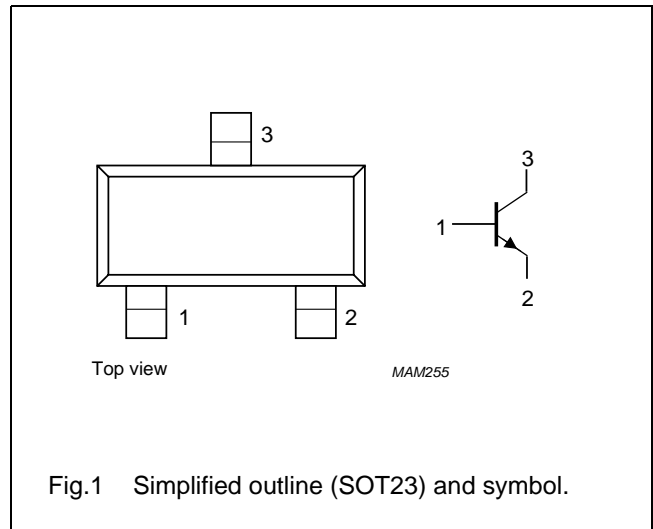
TYPE NUMBER	MARKING CODE <sup>(1)</sup>
BCX19	U1*

### 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
BCX19	–	plastic surface mounted package; 3 leads	SOT23

### 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	–	50	V
V <sub>CEO</sub>	collector-emitter voltage	open base; I <sub>C</sub> = 10 mA	–	45	V
V <sub>EBO</sub>	emitter-base voltage	open collector	–	5	V
I <sub>C</sub>	collector current (DC)		–	500	mA
I <sub>CM</sub>	peak collector current		–	1	A
I <sub>BM</sub>	peak base current		–	200	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.

## NPN general purpose transistor

## BCX19

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th(j-a)}$	thermal resistance from junction to ambient	note 1	500	K/W

## Note

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

## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$I_{CBO}$	collector cut-off current	$I_E = 0; V_{CB} = 20\text{ V}$	–	–	100	nA
		$I_E = 0; V_{CB} = 20\text{ V}; T_j = 150\text{ }^\circ\text{C}$	–	–	5	$\mu\text{A}$
$I_{EBO}$	emitter cut-off current	$I_C = 0; V_{EB} = 5\text{ V}$	–	–	100	nA
$h_{FE}$	DC current gain	$V_{CE} = 1\text{ V};$ note 1				
		$I_C = 100\text{ mA}$	100	–	600	
		$I_C = 300\text{ mA}$	70	–	–	
		$I_C = 500\text{ mA}$	40	–	–	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = 500\text{ mA}; I_B = 50\text{ mA};$ note 2	–	–	620	mV
$V_{BE}$	base-emitter voltage	$I_C = 500\text{ mA}; V_{CE} = 1\text{ V};$ notes 1 and 2	–	–	1.2	V
$C_c$	collector capacitance	$I_E = I_e = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$	–	5	–	pF
$f_T$	transition frequency	$I_C = 10\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$	100	–	–	MHz

## Notes

1. Pulse test:  $t_p \leq 300\text{ }\mu\text{s}; \delta \leq 0.02$ .
2.  $V_{BE}$  decreases by approximately  $-2\text{ mV}/^\circ\text{C}$  with increasing temperature.

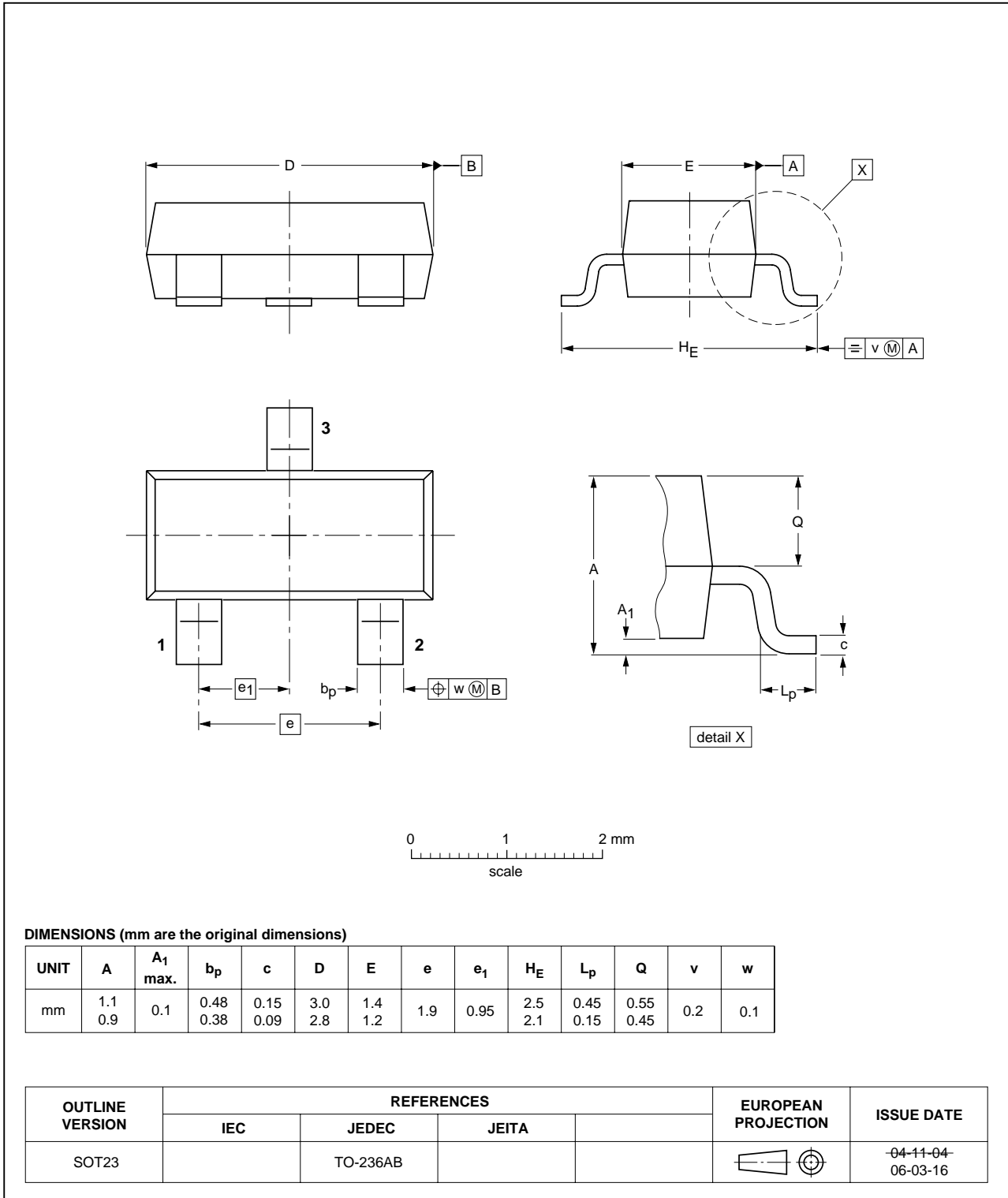
NPN general purpose transistor

BCX19

PACKAGE OUTLINE

Plastic surface-mounted package; 3 leads

SOT23



NPN general purpose transistor

BCX19

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**

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Printed in The Netherlands

R75/05/pp6

Date of release: 2004 Jan 16

Document order number: 9397 750 12407

