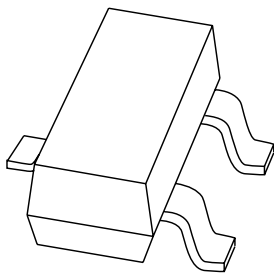


# DATA SHEET



## **BCX71 series** **PNP general purpose transistors**

Product specification  
Supersedes data of 1999 Apr 20

2004 Feb 16

# PNP general purpose transistors

# BCX71 series

### FEATURES

- Low current (max. 100 mA)
- Low voltage (max. 45 V)
- Low noise.

### APPLICATIONS

- Low level, low noise, low frequency applications in hybrid circuits
- General purpose switching and amplification.

### DESCRIPTION

PNP transistor in a plastic SOT23 package.  
NPN complements: BCX70 series.

### MARKING

TYPE NUMBER	MARKING CODE <sup>(1)</sup>
BCX71H	BH*
BCX71J	BJ*
BCX71K	BK*

### Note

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

### PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector

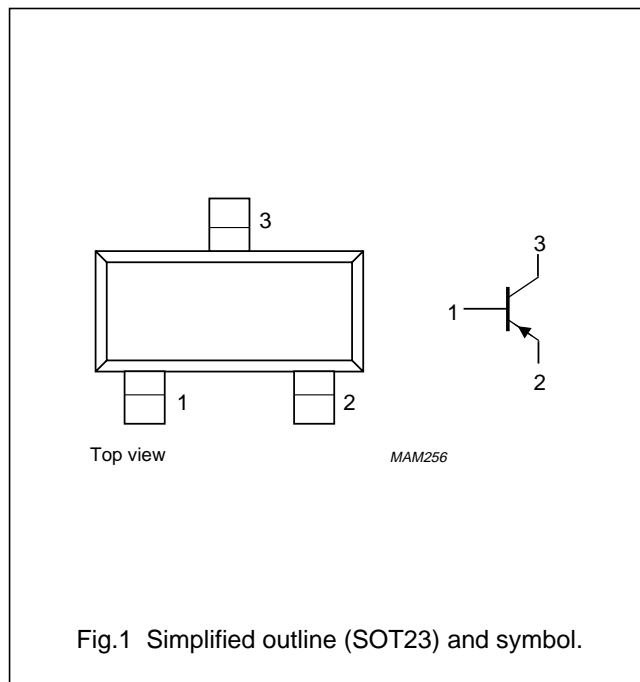


Fig.1 Simplified outline (SOT23) and symbol.

### ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BCX71H	-	plastic surface mounted package; 3 leads	SOT23
BCX71J			
BCX71K			

## PNP general purpose transistors

## BCX71 series

**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	–	–45	V
V <sub>CEO</sub>	collector-emitter voltage	open base	–	–45	V
V <sub>EBO</sub>	emitter-base voltage	open collector	–	–5	V
I <sub>C</sub>	collector current (DC)		–	–100	mA
I <sub>CM</sub>	peak collector current		–	–200	mA
I <sub>BM</sub>	peak base current		–	–200	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C	–	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

**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.

## PNP general purpose transistors

## BCX71 series

## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$I_{CBO}$	collector-base cut-off current	$I_E = 0; V_{CB} = -45\text{ V}$	–	–	–20	nA
		$I_E = 0; V_{CB} = -45\text{ V}; T_{amb} = 150\text{ }^{\circ}\text{C}$	–	–	–20	$\mu\text{A}$
$I_{EBO}$	emitter-base cut-off current	$I_C = 0; V_{EB} = -4\text{ V}$	–	–	–20	nA
$h_{FE}$	DC current gain BCX71H BCX71J BCX71K	$I_C = -10\text{ }\mu\text{A}; V_{CE} = -5\text{ V}$	30	–	–	
			40	–	–	
			100	–	–	
	DC current gain BCX71H BCX71J BCX71K	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$	180	–	310	
			250	–	460	
			380	–	630	
	DC current gain BCX71H BCX71J BCX71K	$I_C = -50\text{ mA}; V_{CE} = -1\text{ V}; \text{note 1}$	80	–	–	
			100	–	–	
			110	–	–	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.25\text{ mA}$	–60	–	–250	mV
		$I_C = -50\text{ mA}; I_B = -1.25\text{ mA}; \text{note 1}$	–120	–	–550	mV
$V_{BEsat}$	base-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.25\text{ mA}$	–600	–	–850	mV
		$I_C = -50\text{ mA}; I_B = -1.25\text{ mA}; \text{note 1}$	–680	–	–1050	mV
$V_{BE}$	base-emitter voltage	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$	–600	–650	–750	mV
		$I_C = -10\text{ }\mu\text{A}; V_{CE} = -5\text{ V}$	–	–550	–	mV
		$I_C = -50\text{ mA}; V_{CE} = -1\text{ V}; \text{note 1}$	–	–720	–	mV
$C_c$	collector capacitance	$I_E = I_e = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$	–	4.5	–	pF
$C_e$	emitter capacitance	$I_C = I_c = 0; V_{EB} = -0.5\text{ V}; f = 1\text{ MHz}$	–	11	–	pF
$f_T$	transition frequency	$I_C = -10\text{ mA}; V_{CE} = -5\text{ V}; f = 100\text{ MHz}$	100	–	–	MHz
F	noise figure	$I_C = -200\text{ }\mu\text{A}; V_{CE} = -5\text{ V}; R_S = 2\text{ k}\Omega;$ $f = 1\text{ kHz}; B = 200\text{ Hz}$	–	2	6	dB

## Note

1. Pulse test:  $t_p \leq 300\text{ }\mu\text{s}; \delta \leq 0.02$ .

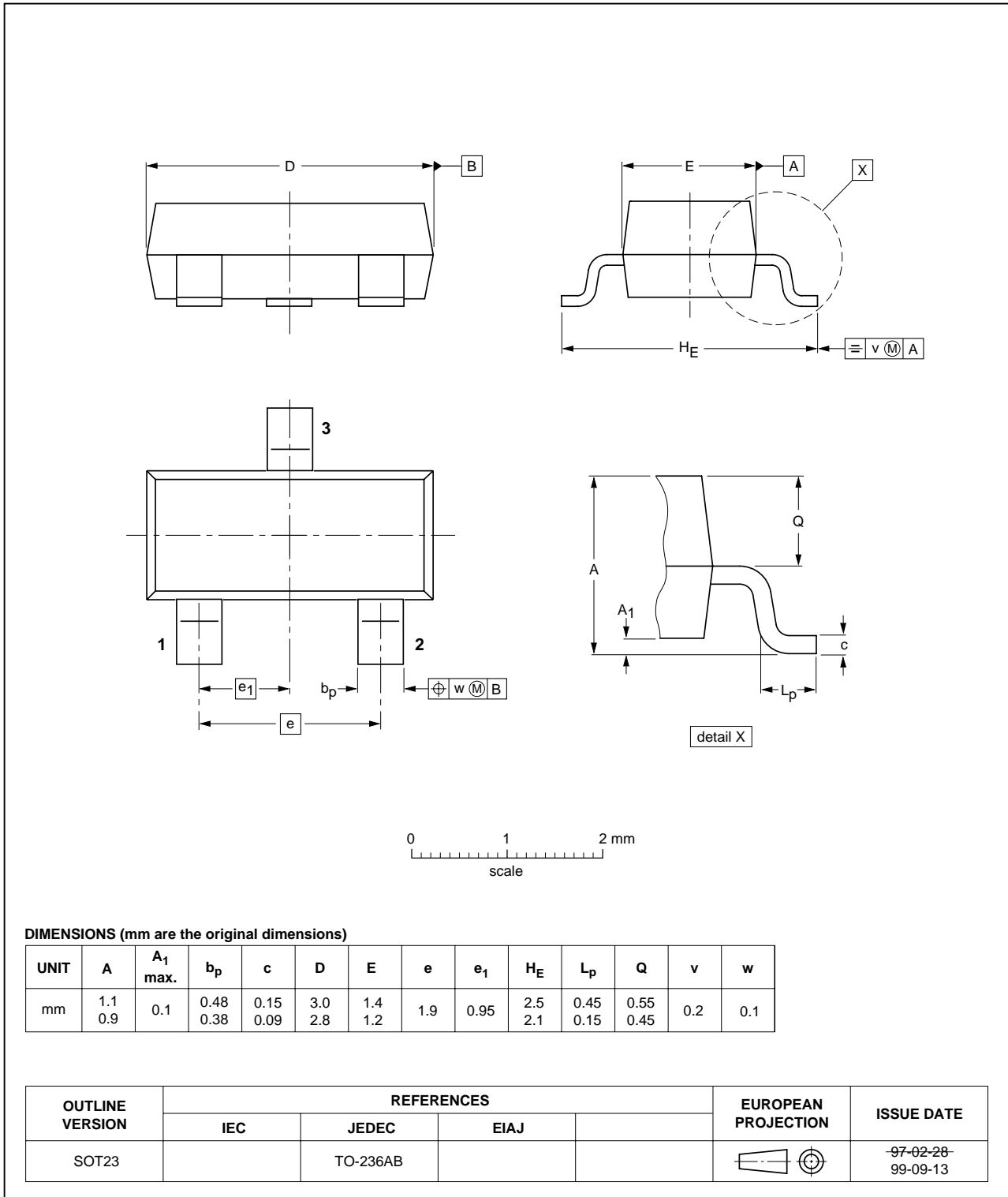
PNP general purpose transistors

BCX71 series

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



## PNP general purpose transistors

## BCX71 series

## DATA SHEET STATUS

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