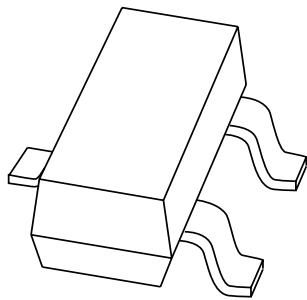


DATA SHEET



BCX71 series PNP general purpose transistors

Product specification
Supersedes data of 1997 Apr 18

1999 Apr 20

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

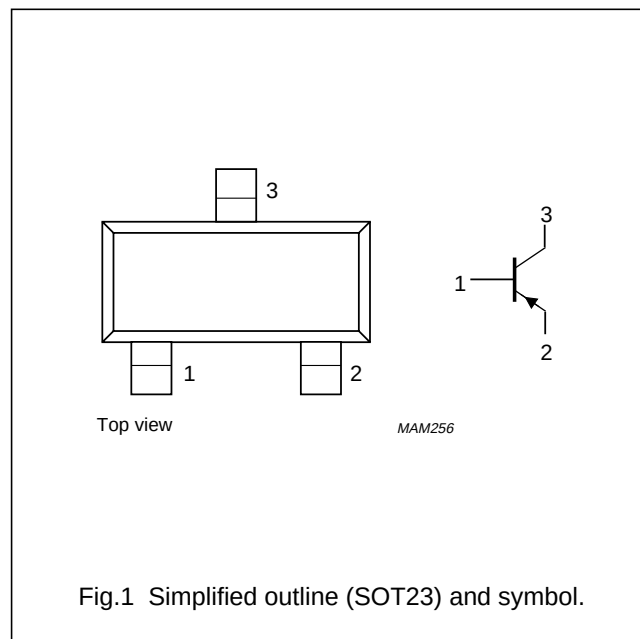
TYPE NUMBER	MARKING CODE ⁽¹⁾	TYPE NUMBER	MARKING CODE ⁽¹⁾
BCX71G	BG*	BCX71J	BJ*
BCX71H	BH*	BCX71K	BK*

Note

1. * = p : Made in Hong Kong.
* = t : Made in Malaysia.

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	–	–45	V
V_{CEO}	collector-emitter voltage	open base	–	–45	V
V_{EBO}	emitter-base voltage	open collector	–	–5	V
I_C	collector current (DC)		–	–100	mA
I_{CM}	peak collector current		–	–200	mA
I_{BM}	peak base current		–	–200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ }^{\circ}\text{C}$	–	250	mW
T_{stg}	storage temperature		–65	+150	$^{\circ}\text{C}$
T_j	junction temperature		–	150	$^{\circ}\text{C}$
T_{amb}	operating ambient temperature		–65	+150	$^{\circ}\text{C}$

PNP general purpose transistors

BCX71 series

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

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = -45\text{ V}$	–	–	–20	nA
		$I_E = 0; V_{CB} = -45\text{ V}; T_{amb} = 150\text{ °C}$	–	–	–20	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = -4\text{ V}$	–	–	–20	nA
h_{FE}	DC current gain	$I_C = -10\text{ }\mu\text{A}; V_{CE} = -5\text{ V}$				
	BCX71G		–	–	–	
	BCX71H		30	–	–	
	BCX71J		40	–	–	
	BCX71K		100	–	–	
	DC current gain	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$				
	BCX71G		120	–	220	
	BCX71H		180	–	310	
	BCX71J		250	–	460	
	BCX71K		380	–	630	
	DC current gain	$I_C = -50\text{ mA}; V_{CE} = -1\text{ V}; \text{note 1}$				
	BCX71G		60	–	–	
	BCX71H		80	–	–	
	BCX71J		100	–	–	
	BCX71K		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: $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$.

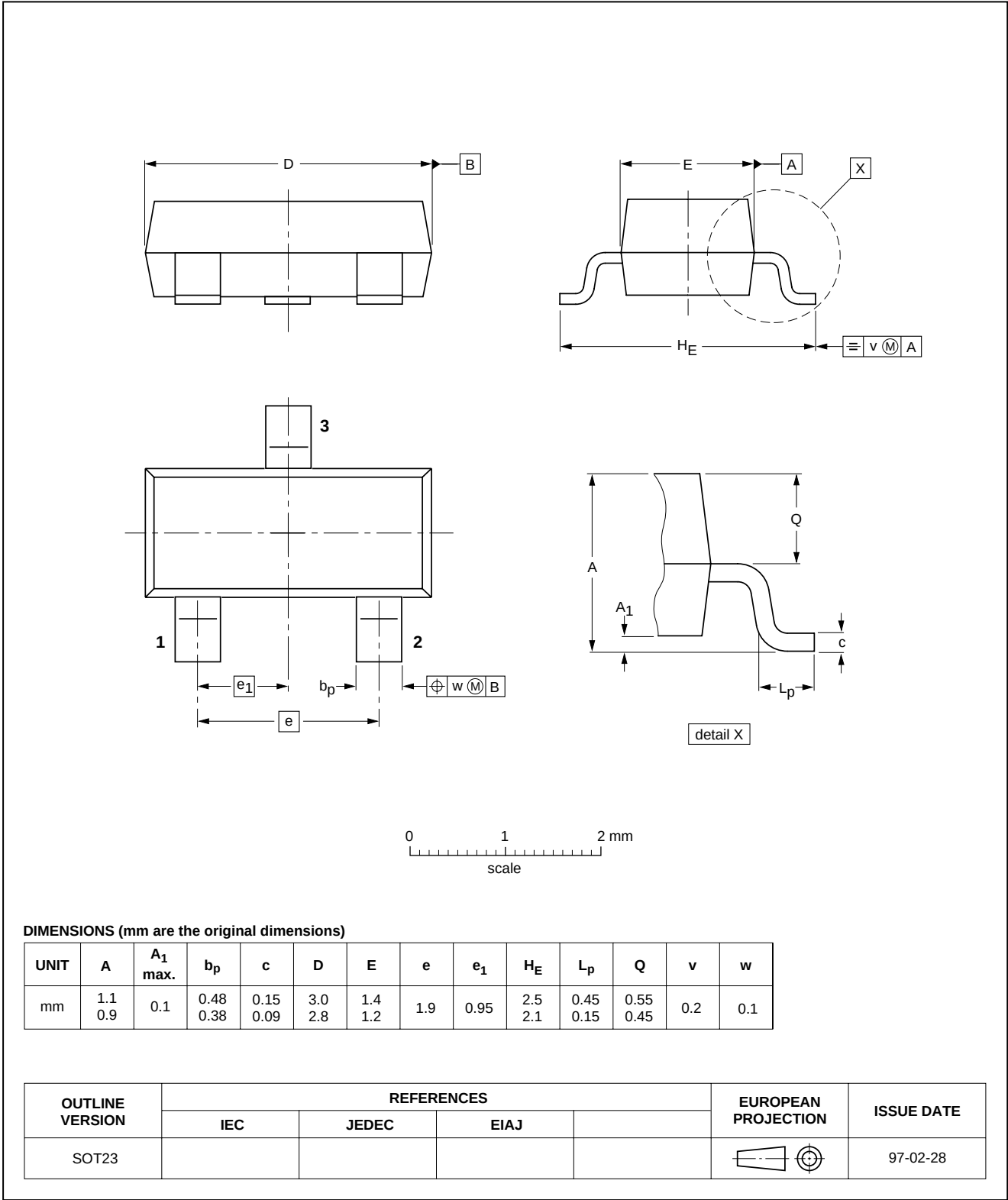
PNP general purpose transistors

BCX71 series

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



PNP general purpose transistors

BCX71 series

DEFINITIONS

Data sheet status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

LIFE SUPPORT APPLICATIONS

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

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BCX71 series

NOTES

PNP general purpose transistors

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NOTES

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