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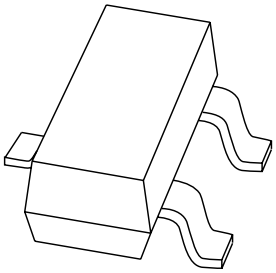
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If you have any questions related to the data sheet, please contact our nearest sales office via e-mail or telephone (details via **salesaddresses@nexperia.com**). Thank you for your cooperation and understanding,

Kind regards,

Team Nexperia

DATA SHEET



BCX71 series
PNP general purpose transistors

Product data sheet
Supersedes data of 1999 Apr 20

2004 Feb 16

NXP founded by Philips

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)
BCX71H	BH*
BCX71J	BJ*
BCX71K	BK*

Note

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

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector

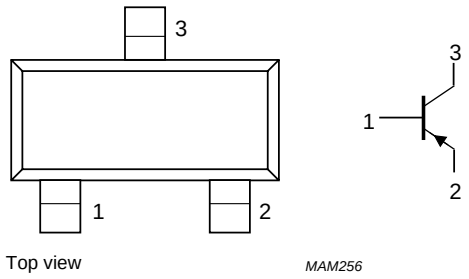


Fig.1 Simplified outline (SOT23) and symbol.

ORDERING INFORMATION

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

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	–	−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	$T_{amb} \leq 25$ °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	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 °C unless otherwise specified.

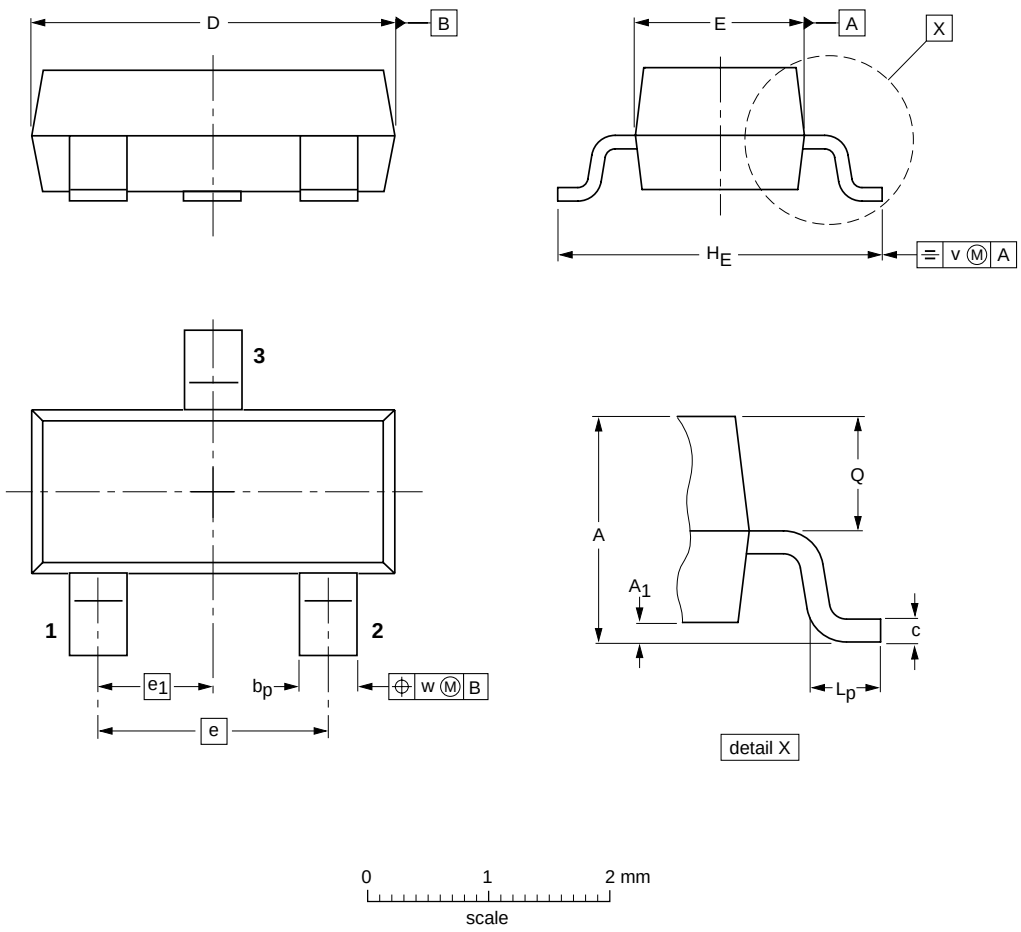
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector-base cut-off current	I_E = 0; V_{CB} = −45 V	−	−	−20	nA
		I_E = 0; V_{CB} = −45 V; T_{amb} = 150 °C	−	−	−20	μA
I_{EBO}	emitter-base cut-off current	I_C = 0; V_{EB} = −4 V	−	−	−20	nA
h_{FE}	DC current gain	I_C = −10 μA; V_{CE} = −5 V		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

Note

1. Pulse test: $t_p \leq 300$ μs; $\delta \leq 0.02$.

PACKAGE OUTLINE

Plastic surface-mounted package; 3 leads **SOT23**



DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1 max.	b_p	c	D	E	e	e_1	H_E	L_p	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

DATA SHEET STATUS

DOCUMENT STATUS[1]	PRODUCT STATUS[2]	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.

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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**
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