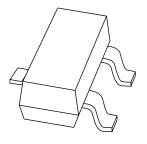
DISCRETE SEMICONDUCTORS

DATA SHEET



BCX71 seriesPNP general purpose transistors

Product data sheet 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 ⁽¹⁾
BCX71H	BH*
BCX71J	BJ*
BCX71K	BK*

Note

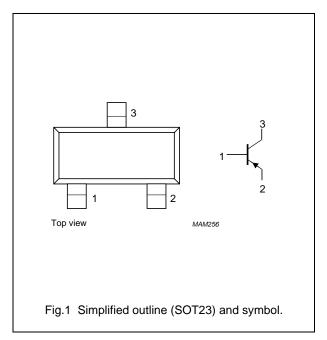
1. * = p: Made in Hong Kong.

* = t : Made in Malaysia.

* = W : Made in China.

PINNING

PIN	DESCRIPTION	
1	base	
2	emitter	
3	collector	



ORDERING INFORMATION

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

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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	_	-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} ≤ 25 °C	_	250	mW
T _{stg}	storage temperature		-65	+150	°C
Tj	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.

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CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I _{CBO}	collector-base cut-off current	$I_E = 0$; $V_{CB} = -45 \text{ V}$	-	-	-20	nA
		I _E = 0; V _{CB} = -45 V; T _{amb} = 150 °C	-	_	-20	μΑ
I _{EBO}	emitter-base cut-off current	$I_C = 0; V_{EB} = -4 V$	-	_	-20	nA
h _{FE}	DC current gain	$I_C = -10 \mu A; V_{CE} = -5 V$				
	BCX71H		30	_	_	
	BCX71J		40	_	_	
	BCX71K		100	_	_	
	DC current gain	$I_C = -2 \text{ mA}; V_{CE} = -5 \text{ V}$				
	BCX71H		180	_	310	
	BCX71J		250	_	460	
	BCX71K		380	_	630	
	DC current gain	$I_C = -50 \text{ mA}$; $V_{CE} = -1 \text{ V}$; note 1				
	BCX71H		80	_	_	
	BCX71J		100	_	_	
	BCX71K		110	_	_	
V _{CEsat}	collector-emitter saturation	$I_C = -10 \text{ mA}; I_B = -0.25 \text{ mA}$	-60	_	-250	mV
	voltage	$I_C = -50 \text{ mA}$; $I_B = -1.25 \text{ mA}$; note 1	-120	_	-550	mV
V _{BEsat}	base-emitter saturation	$I_C = -10 \text{ mA}; I_B = -0.25 \text{ mA}$	-600	_	-850	mV
	voltage	$I_C = -50 \text{ mA}$; $I_B = -1.25 \text{ mA}$; note 1	-680	_	-1050	mV
V_{BE}	base-emitter voltage	$I_C = -2 \text{ mA}; V_{CE} = -5 \text{ V}$	-600	-650	-750	mV
		$I_C = -10 \mu A; V_{CE} = -5 V$	_	-550	_	mV
		$I_C = -50 \text{ mA}$; $V_{CE} = -1 \text{ V}$; 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	$I_{C} = -200 \ \mu A; \ V_{CE} = -5 \ V; \ R_{S} = 2 \ k\Omega; \ f = 1 \ kHz; \ B = 200 \ Hz$	_	2	6	dB

Note

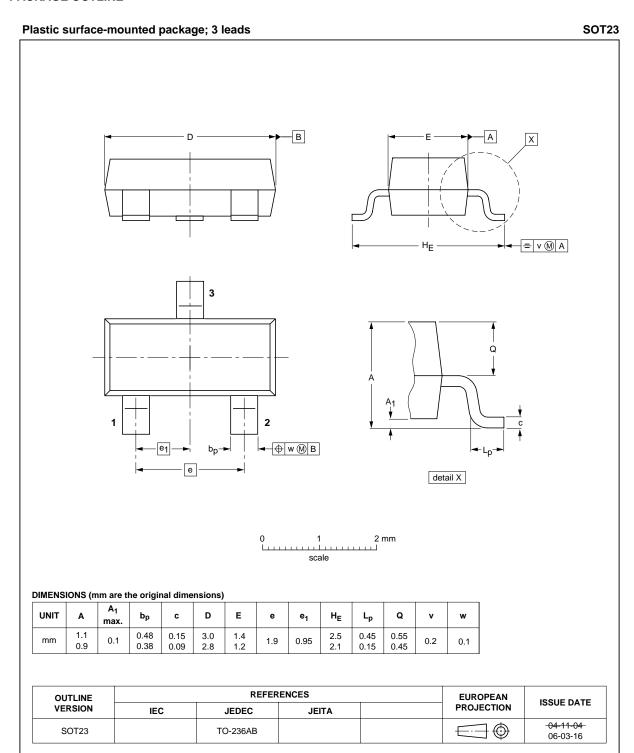
1. Pulse test: $t_p \le 300~\mu s;~\delta \le 0.02.$

2004 Feb 16

PNP general purpose transistors

BCX71 series

PACKAGE OUTLINE



PNP general purpose transistors

BCX71 series

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.

Notes

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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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