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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](mailto:salesaddresses@nexperia.com)). Thank you for your cooperation and understanding,

Kind regards,

Team Nexperia

# DATA SHEET



## **PMBT6428; PMBT6429** NPN general purpose transistors

Product data sheet  
Supersedes data of 1999 Apr 27

2004 Jan 22

# NPN general purpose transistors

# PMBT6428; PMBT6429

### FEATURES

- Low current (max. 100 mA)
- Low voltage (max. 50 V).

### APPLICATIONS

- General purpose switching and amplification
- Telephony and professional communication equipment.

### DESCRIPTION

NPN transistor in a SOT23 plastic package.

### MARKING

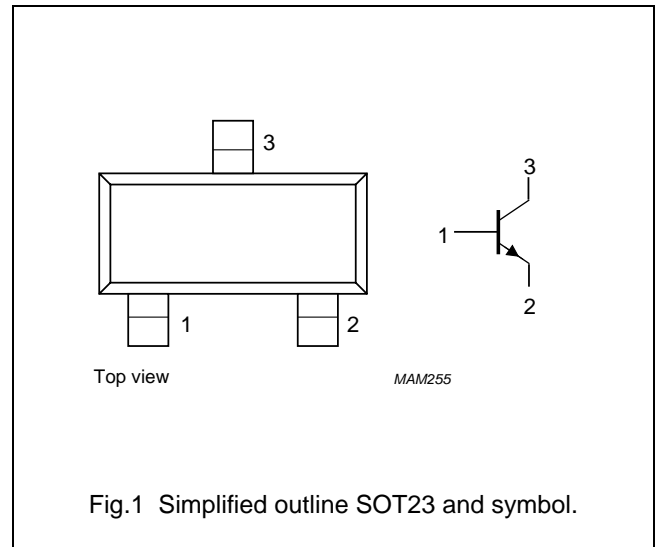
TYPE NUMBER	MARKING CODE <sup>(1)</sup>
PMBT6428	*1K
PMBT6429	*1L

### 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
PMBT6428	–	plastic surface mounted package; 3 leads	SOT23
PMBT6429			

## NPN general purpose transistors

## PMBT6428; PMBT6429

**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			
	PMBT6428		–	60	V
	PMBT6429		–	55	V
V <sub>CEO</sub>	collector-emitter voltage	open base			
	PMBT6428		–	50	V
	PMBT6429		–	45	V
V <sub>EBO</sub>	emitter-base voltage	open collector	–	6	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; 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.

**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.

## NPN general purpose transistors

## PMBT6428; PMBT6429

**CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_{CBO}$	collector cut-off current	$I_E = 0; V_{CB} = 30\text{ V}$	–	10	nA
$I_{EBO}$	emitter cut-off current	$I_C = 0; V_{EB} = 5\text{ V}$	–	10	nA
$h_{FE}$	DC current gain PMBT6428	$I_C = 0.1\text{ mA}; V_{CE} = 5\text{ V}$	250	650	
			500	1250	
	DC current gain PMBT6428	$I_C = 1\text{ mA}; V_{CE} = 5\text{ V}$	250	–	
			500	–	
	DC current gain PMBT6428	$I_C = 10\text{ mA}; V_{CE} = 5\text{ V}$	250	–	
			500	–	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = 10\text{ mA}; I_B = 0.5\text{ mA}$	–	200	mV
		$I_C = 100\text{ mA}; I_B = 5\text{ mA}$	–	600	mV
$V_{BE}$	base-emitter voltage	$I_C = 1\text{ mA}; V_{CE} = 5\text{ V}$	560	660	mV
$C_c$	collector capacitance	$I_E = i_e = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$	–	3	pF
$C_e$	emitter capacitance	$I_C = i_c = 0; V_{EB} = 0.5\text{ V}; f = 1\text{ MHz}$	–	12	pF
$f_T$	transition frequency	$I_C = 1\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$	100	700	MHz

NPN general purpose transistors

PMBT6428; PMBT6429

PACKAGE OUTLINE

Plastic surface-mounted package; 3 leads

SOT23



## NPN general purpose transistors

## PMBT6428; PMBT6429

## 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**

For additional information please visit: <http://www.nxp.com>

For sales offices addresses send e-mail to: [salesaddresses@nxp.com](mailto:salesaddresses@nxp.com)

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Printed in The Netherlands

R75/04/pp7

Date of release: 2004 Jan 22

Document order number: 9397 750 12505







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