

## Important notice

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Should be replaced with:

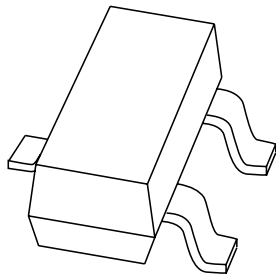
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If you have any questions related to the data sheet, please contact our nearest sales office via e-mail or telephone (details via [salesaddresses@nexperia.com](mailto:salesaddresses@nexperia.com)). Thank you for your cooperation and understanding,

Kind regards,

Team Nexperia

# DATA SHEET



**PMBTA06**

**NPN general purpose transistor**

Product data sheet  
Supersedes data of 1999 Apr 29

2004 Jan 22

# NPN general purpose transistor

# PMBTA06

### FEATURES

- High current (max. 500 mA)
- Low voltage (max. 80 V).

### APPLICATIONS

- General purpose switching and amplification in e.g. telephony and professional communication equipment.

### DESCRIPTION

NPN transistor in a SOT23 plastic package.  
PNP complement: PMBTA56.

### MARKING

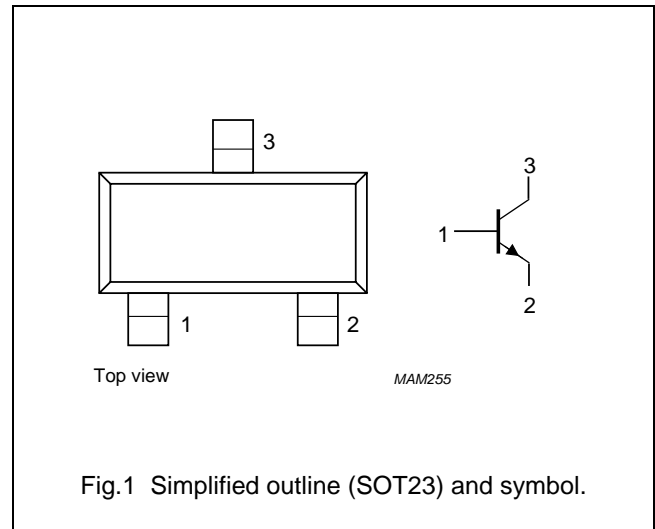
TYPE NUMBER	MARKING CODE <sup>(1)</sup>
PMBTA06	*1G

### 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
PMBTA06	–	plastic surface mounted package; 3 leads	SOT23

### LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>CB0</sub>	collector-base voltage	open emitter	–	80	V
V <sub>CEO</sub>	collector-emitter voltage	open base	–	80	V
V <sub>EBO</sub>	emitter-base voltage	open collector	–	4	V
I <sub>C</sub>	collector current (DC)		–	500	mA
I <sub>CM</sub>	peak collector current		–	1	A
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.

## NPN general purpose transistor

## PMBTA06

**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.	MAX.	UNIT
$I_{CBO}$	collector cut-off current	$I_E = 0$ ; $V_{CB} = 80\text{ V}$	–	50	nA
$I_{EBO}$	emitter cut-off current	$I_C = 0$ ; $V_{EB} = 5\text{ V}$	–	50	nA
$h_{FE}$	DC current gain	$I_C = 10\text{ mA}$ ; $V_{CE} = 1\text{ V}$	100	–	
		$I_C = 100\text{ mA}$ ; $V_{CE} = 1\text{ V}$	100	–	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = 100\text{ mA}$ ; $I_B = 10\text{ mA}$	–	0.25	V
$V_{BE}$	base-emitter voltage	$I_C = 100\text{ mA}$ ; $V_{CE} = 1\text{ V}$	–	1.2	V
$f_T$	transition frequency	$I_C = 10\text{ mA}$ ; $V_{CE} = 2\text{ V}$ ; $f = 100\text{ MHz}$	100	–	MHz

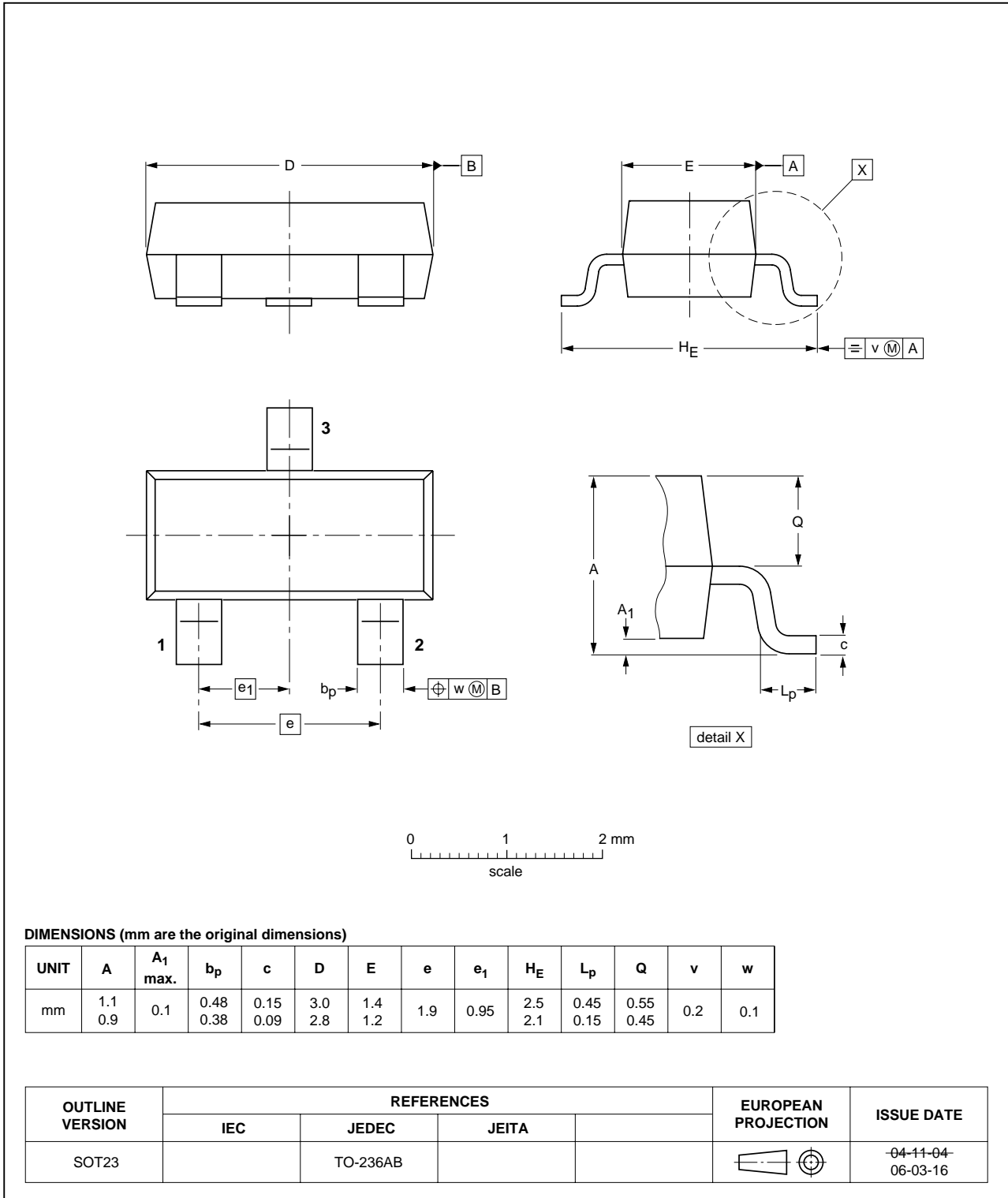
NPN general purpose transistor

PMBTA06

PACKAGE OUTLINE

Plastic surface-mounted package; 3 leads

SOT23



## NPN general purpose transistor

PMBTA06

## 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

1. Please consult the most recently issued document before initiating or completing a design.
2. The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

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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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