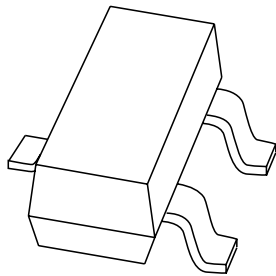


# DATA SHEET



**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

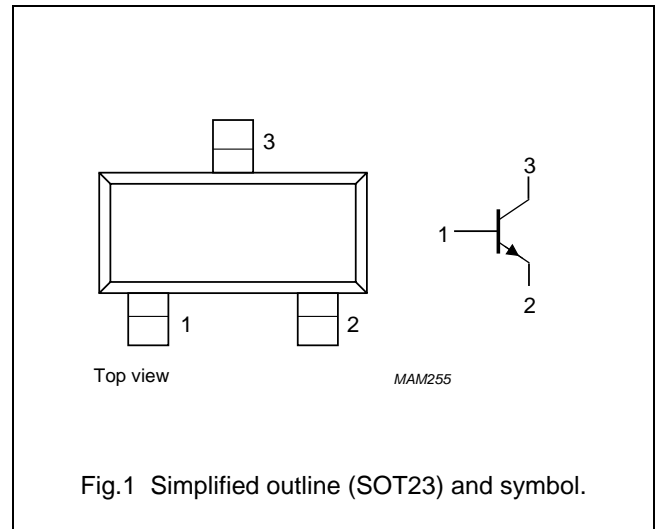
TYPE NUMBER	MARKING CODE <sup>(1)</sup>
PMBTA06	*1G

### 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

$T_{amb} = 25\text{ }^{\circ}\text{C}$  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

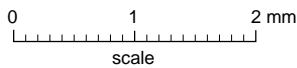
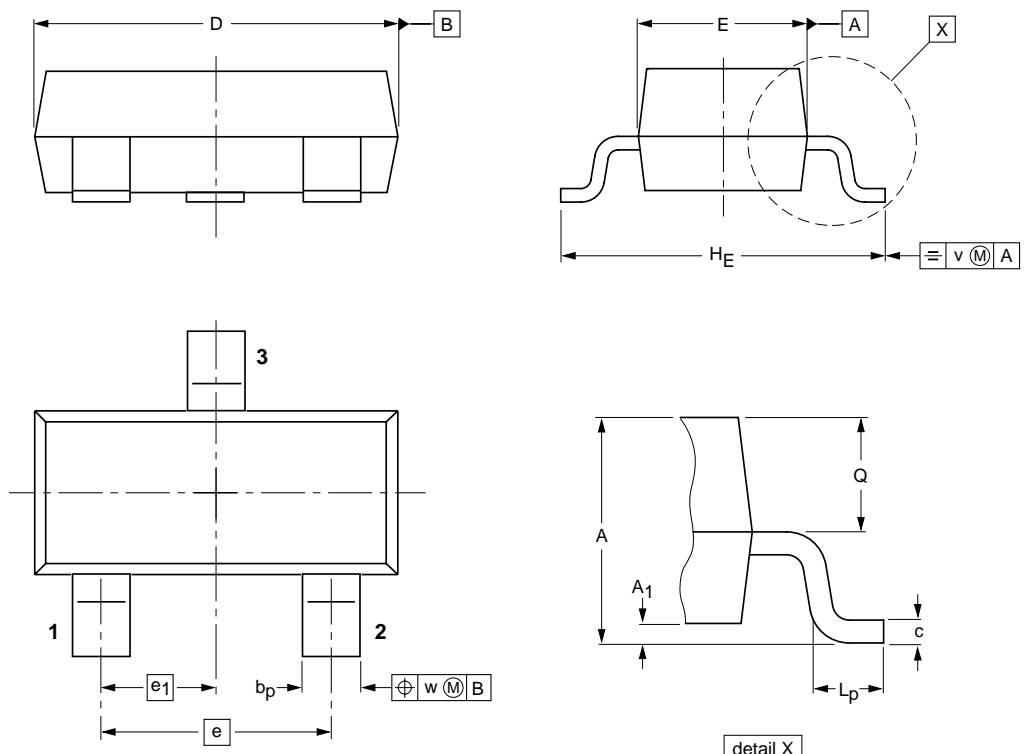
NPN general purpose transistor

PMBTA06

PACKAGE OUTLINE

Plastic surface-mounted package; 3 leads

SOT23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max.	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	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

## 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

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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**

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