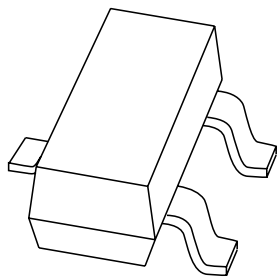


# DATA SHEET



**PMBTA06**

**NPN general purpose transistor**

Product specification  
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

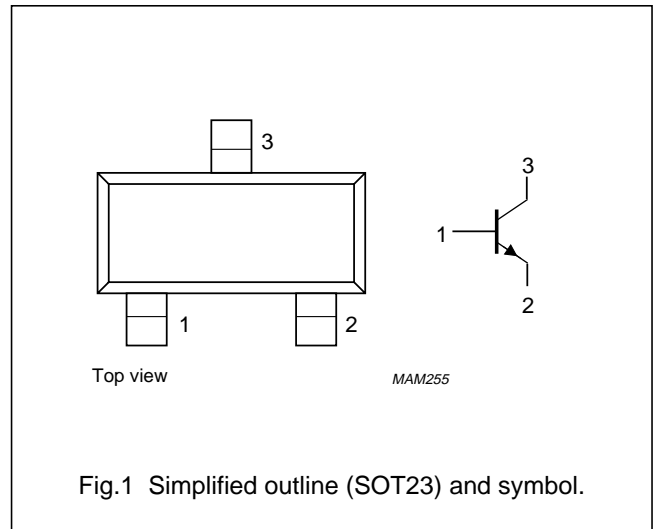
TYPE NUMBER	MARKING CODE <sup>(1)</sup>
PMBTA06	*1G

### 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>CBO</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

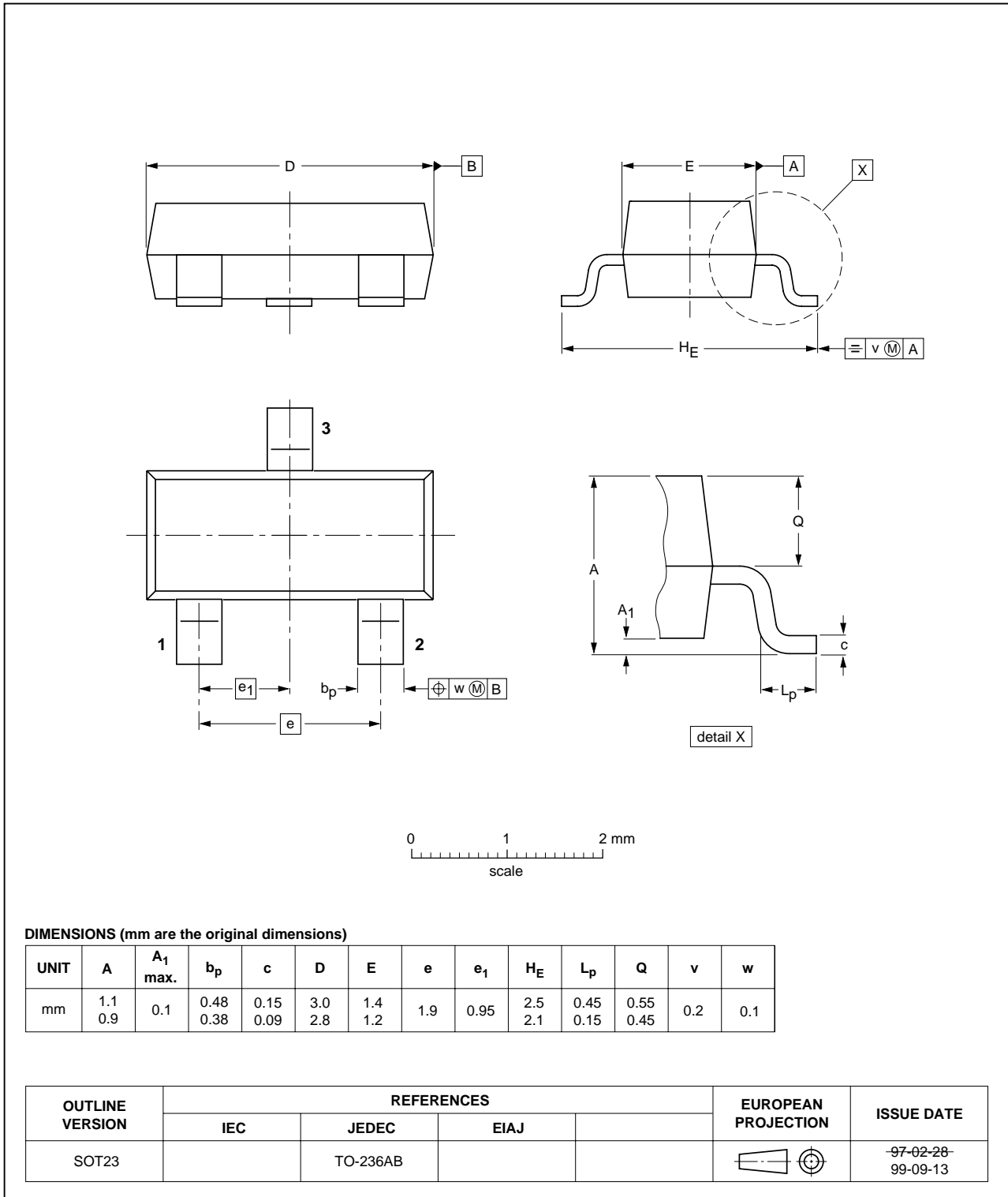
NPN general purpose transistor

PMBTA06

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



## NPN general purpose transistor

PMBTA06

## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
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**Limiting values definition** — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.

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