

# DATA SHEET



## **PMBTA42** NPN high-voltage transistor

Product specification  
Supersedes data of 1999 Apr 22

2004 Jan 22

# NPN high-voltage transistor

# PMBTA42

### FEATURES

- Low current (max. 100 mA)
- High voltage (max. 300 V).

### APPLICATIONS

- Telephony and professional communication equipment.

### DESCRIPTION

NPN high-voltage transistor in a SOT23 plastic package.  
PNP complement: PMBTA92.

### MARKING

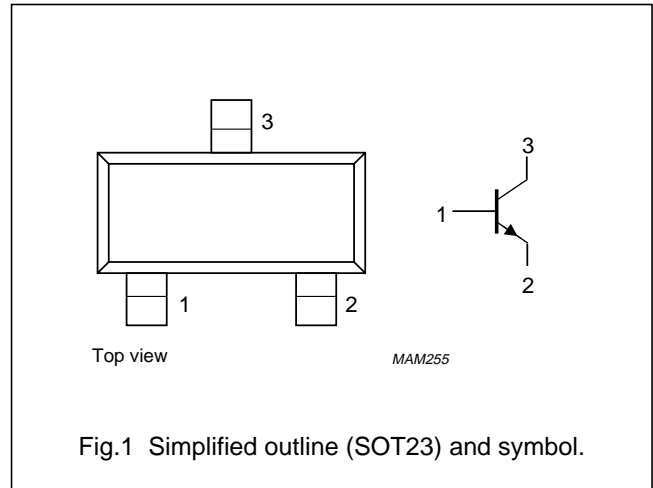
TYPE NUMBER	MARKING CODE <sup>(1)</sup>
PMBTA42	*1D

### 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
PMBTA42	-	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	-	300	V
V <sub>CEO</sub>	collector-emitter voltage	open base	-	300	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		-	100	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.

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## 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	$I_E = 0$ ; $V_{CB} = 200\text{ V}$	–	100	nA
$I_{EBO}$	emitter cut-off current	$I_C = 0$ ; $V_{EB} = 6\text{ V}$	–	100	nA
$h_{FE}$	DC current gain	$V_{CE} = 10\text{ V}$ $I_C = 1\text{ mA}$ $I_C = 10\text{ mA}$ $I_C = 30\text{ mA}$	25 40 40	– – –	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = 20\text{ mA}$ ; $I_B = 2\text{ mA}$	–	500	mV
$V_{BEsat}$	base-emitter saturation voltage	$I_C = 20\text{ mA}$ ; $I_B = 2\text{ mA}$	–	900	mV
$C_{re}$	feedback capacitance	$I_C = I_c = 0$ ; $V_{CB} = 20\text{ V}$ ; $f = 1\text{ MHz}$	–	3	pF
$f_T$	transition frequency	$I_C = 10\text{ mA}$ ; $V_{CE} = 20\text{ V}$ ; $f = 100\text{ MHz}$	50	–	MHz

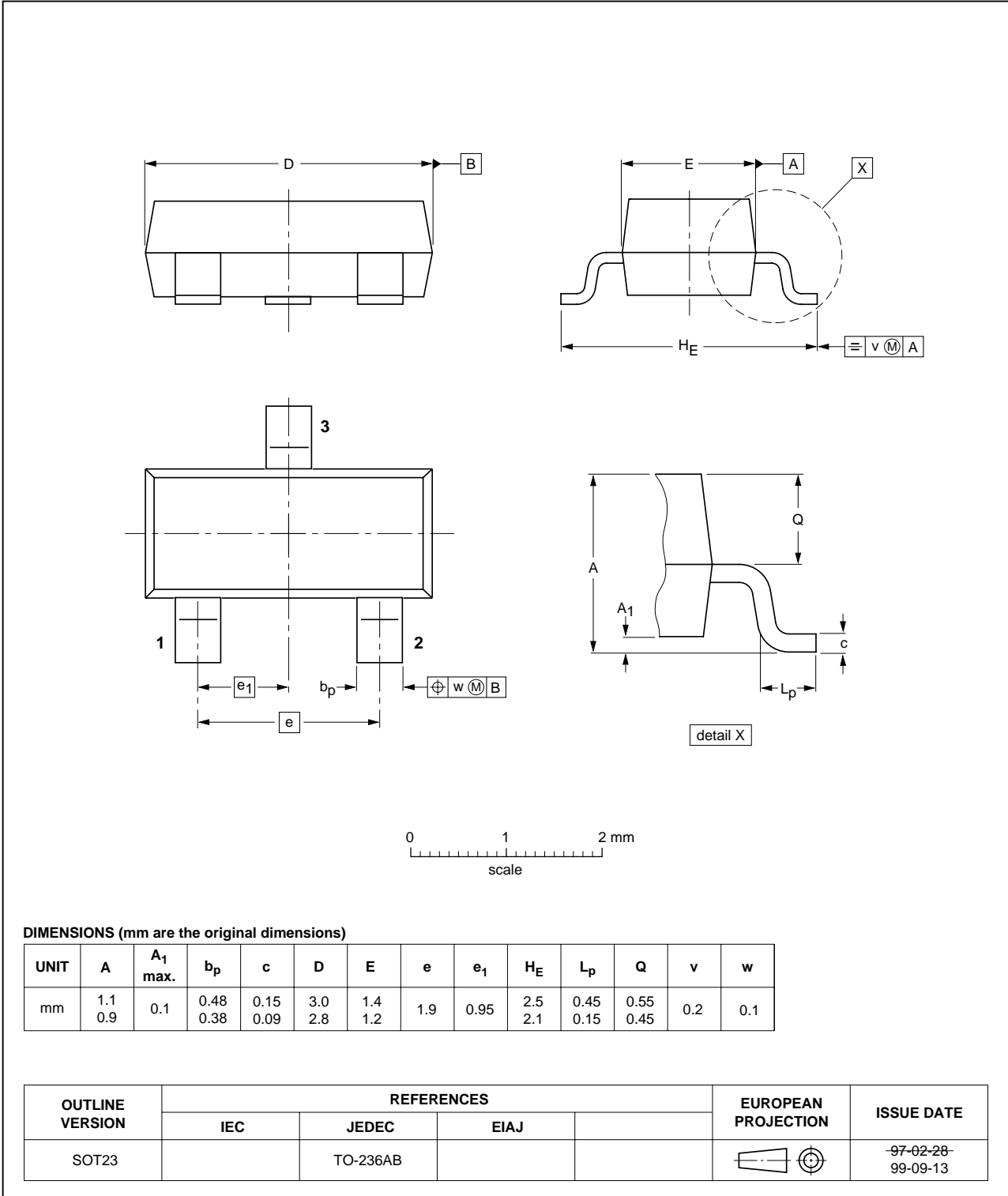
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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



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## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
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