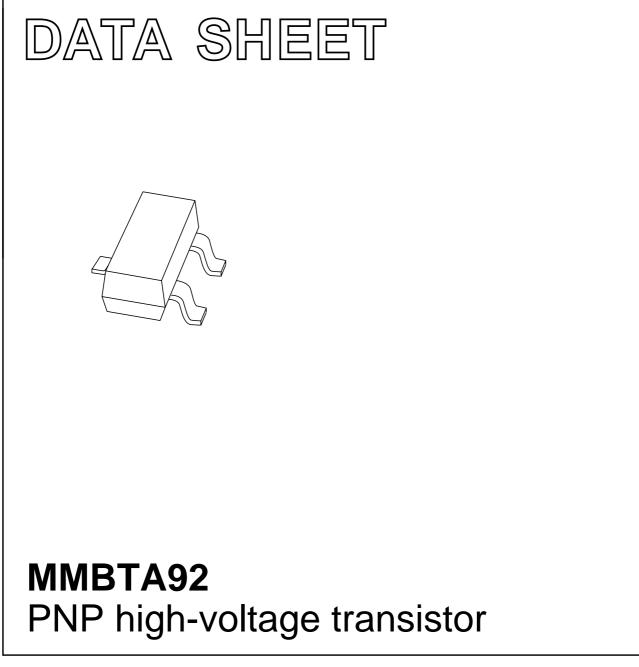
## DISCRETE SEMICONDUCTORS



Product specification Supersedes data of 2000 Apr 11 2004 Jan 16



### PNP high-voltage transistor

#### FEATURES

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

#### APPLICATIONS

- Telephony
- Professional communication equipment.

#### DESCRIPTION

PNP high-voltage transistor in a SOT23 plastic package. NPN complement: MMBTA42.

#### MARKING

TYPE NUMBER MARKING CODE	
MMBTA92	7E*

#### Note

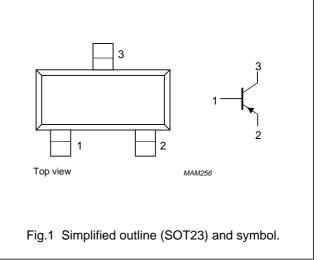
- 1. \* = p : Made in Hong Kong.
  - \* = t : Made in Malaysia.

\* = W : Made in China.

#### **ORDERING INFORMATION**

#### PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



TYPE		PACKAGE		
NUMBER	NAME	DESCRIPTION	VERSION	
MMBTA92	_	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	-	-300	V
V <sub>CEO</sub>	collector-emitter voltage	open base	-	-300	V
V <sub>EBO</sub>	emitter-base voltage	open collector	_	-5	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	$T_{amb} \le 25 \ ^{\circ}C;$ note 1	-	250	mW
T <sub>stg</sub>	storage temperature		-65	+150	°C
Tj	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 <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.

#### CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I <sub>CBO</sub>	collector cut-off current	I <sub>E</sub> = 0; V <sub>CB</sub> = -200 V	-	-250	nA
I <sub>EBO</sub>	emitter cut-off current	$I_{C} = 0; V_{EB} = -3 V$	-	-100	nA
h <sub>FE</sub>	DC current gain	V <sub>CE</sub> = -10 V; note 1			
		$I_{\rm C} = -1  \rm{mA}$	25	-	
		$I_{\rm C} = -10  {\rm mA}$	40	-	
		I <sub>C</sub> = -30 mA	25	-	
V <sub>CEsat</sub>	collector-emitter saturation voltage	$I_{\rm C} = -20 \text{ mA}; I_{\rm B} = -2 \text{ mA}$	_	-500	mV
V <sub>BEsat</sub>	base-emitter saturation voltage	$I_{\rm C} = -20 \text{ mA}; I_{\rm B} = -2 \text{ mA}$	_	-900	mV
C <sub>c</sub>	collector capacitance	$I_E = i_e = 0; V_{CB} = -20 V;$ f = 1 MHz	_	6	pF
f <sub>T</sub>	transition frequency	$I_{C} = -10 \text{ mA}; V_{CE} = -20 \text{ V};$ f = 100 MHz	50	-	MHz

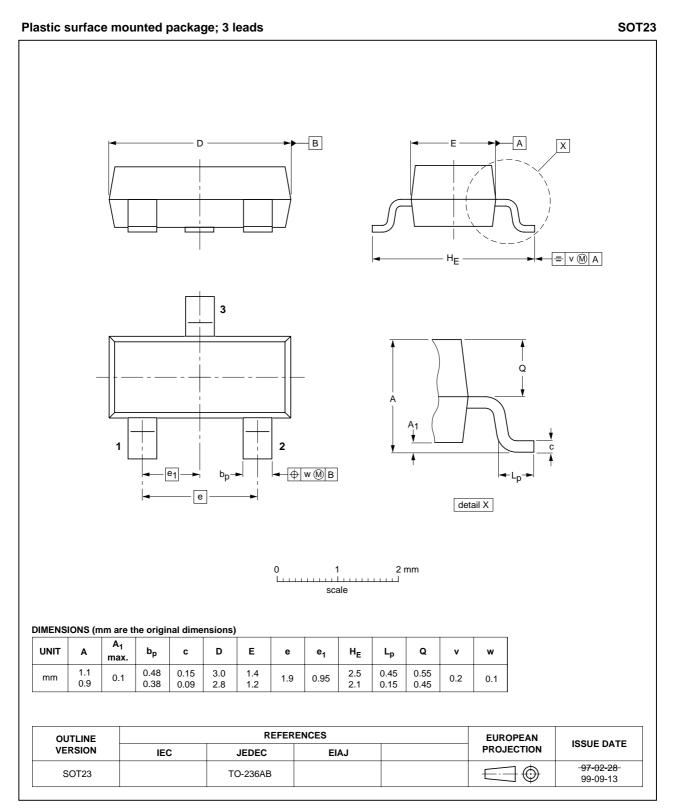
#### Note

1. Pulse test:  $t_p \leq 300 \ \mu s; \ \delta \leq 0.02.$ 

MMBTA92

### PNP high-voltage transistor

#### PACKAGE OUTLINE



### PNP high-voltage transistor

MMBTA92

#### DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
1	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.
11	Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
	Product data	Production	This data sheet contains data from the product specification. Philips Semiconductors reserves the right to make changes at any time in order to improve the design, manufacturing and supply. Relevant changes will be communicated via a Customer Product/Process Change Notification (CPCN).

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- 2. The product status of the device(s) described in this data sheet may have changed since this data sheet was published. The latest information is available on the Internet at URL http://www.semiconductors.philips.com.
- 3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

#### DEFINITIONS

**Short-form specification** — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

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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