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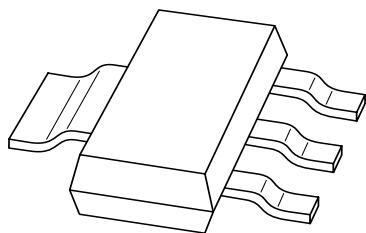
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If you have any questions related to the data sheet, please contact our nearest sales office via e-mail or telephone (details via [salesaddresses@nexperia.com](mailto:salesaddresses@nexperia.com)). Thank you for your cooperation and understanding,

Kind regards,

Team Nexperia

# DATA SHEET



## **PZTA42** NPN high-voltage transistor

Product data sheet  
Supersedes data of 1997 Jun 16

1999 May 21

**NPN high-voltage transistor****PZTA42****FEATURES**

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

**APPLICATIONS**

- Telephony and professional communication equipment.

**DESCRIPTION**

NPN high-voltage transistor in a SOT223 plastic package.  
PNP complement: PZTA92.

**PINNING**

PIN	DESCRIPTION
1	base
2,4	collector
3	emitter

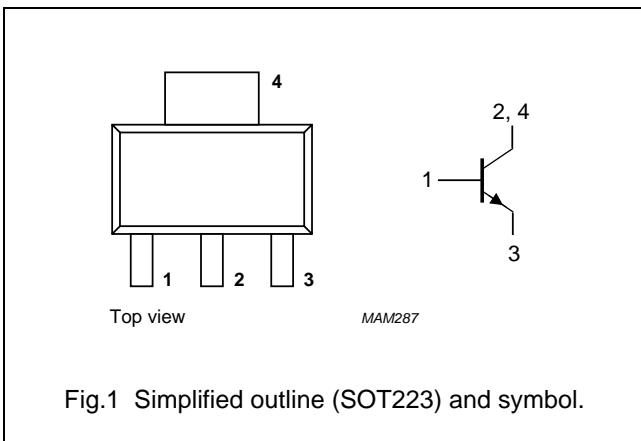


Fig.1 Simplified outline (SOT223) and symbol.

**LIMITING VALUES**

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{CBO}$	collector-base voltage	open emitter	—	300	V
$V_{CEO}$	collector-emitter voltage	open base	—	300	V
$V_{EBO}$	emitter-base voltage	open collector	—	6	V
$I_C$	collector current (DC)		—	100	mA
$I_{CM}$	peak collector current		—	200	mA
$I_{BM}$	peak base current		—	100	mA
$P_{tot}$	total power dissipation	$T_{amb} \leq 25^\circ\text{C}$ ; note 1	—	1.2	W
$T_{stg}$	storage temperature		-65	+150	°C
$T_j$	junction temperature		—	150	°C
$T_{amb}$	operating ambient temperature		-65	+150	°C

**Note**

1. Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 1 cm<sup>2</sup>.  
For other mounting conditions, see "Thermal considerations for SOT223 in the General Part of associated Handbook".

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## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	104	K/W
$R_{th\ j-s}$	thermal resistance from junction to soldering point		23	K/W

## Note

1. Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 1 cm<sup>2</sup>. For other mounting conditions, see "Thermal considerations for SOT223 in the General Part of associated Handbook".

## CHARACTERISTICS

 $T_{amb} = 25^\circ\text{C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_{CBO}$	collector cut-off current	$I_E = 0$ ; $V_{CB} = 200$ V	–	20	nA
$I_{EBO}$	emitter cut-off current	$I_C = 0$ ; $V_{BE} = 6$ V	–	100	nA
$h_{FE}$	DC current gain	$V_{CE} = 10$ V $I_C = 1$ mA $I_C = 10$ mA $I_C = 30$ mA	25 40 40	– – –	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = 20$ mA; $I_B = 2$ mA	–	500	mV
$V_{BEsat}$	base-emitter saturation voltage	$I_C = 20$ mA; $I_B = 2$ mA	–	900	mV
$C_{re}$	feedback capacitance	$I_C = i_c = 0$ ; $V_{CB} = 20$ V; $f = 1$ MHz	–	3	pF
$f_T$	transition frequency	$I_C = 10$ mA; $V_{CE} = 20$ V; $f = 100$ MHz	50	–	MHz

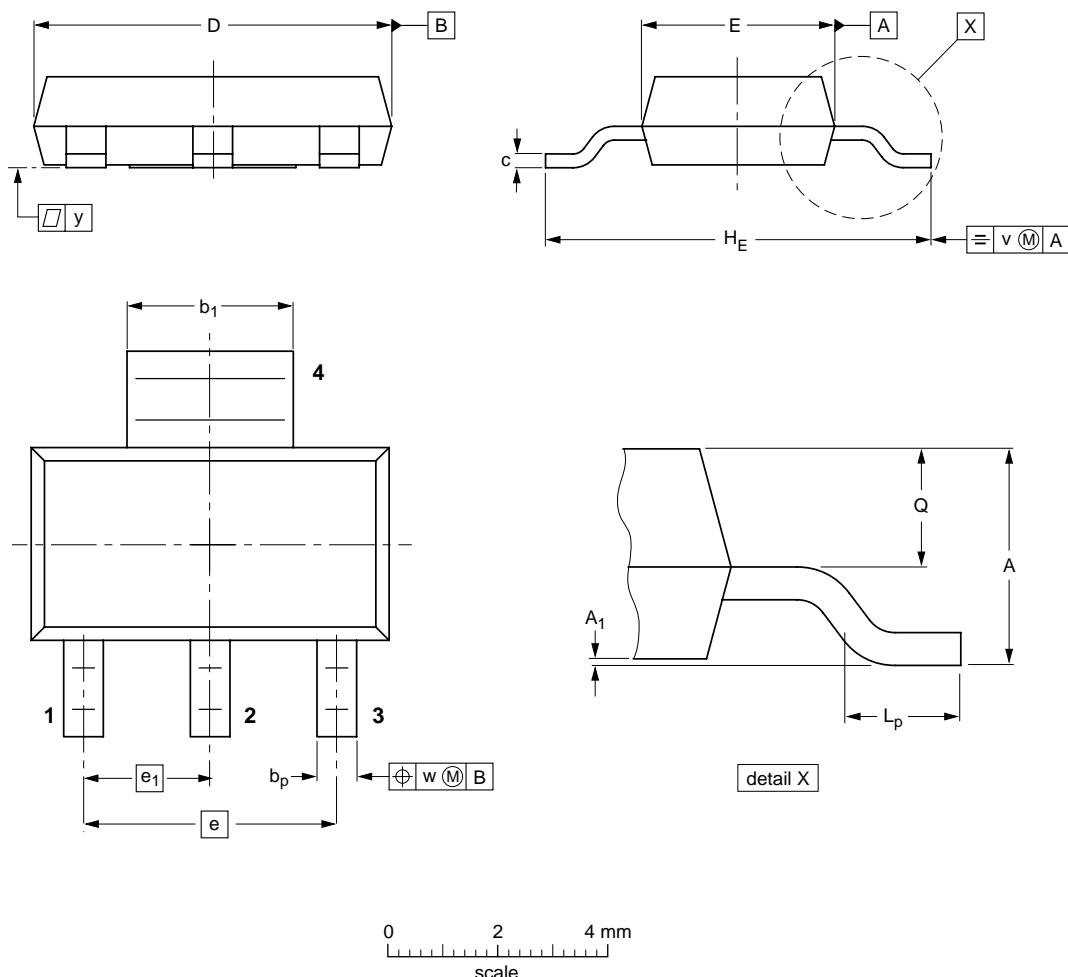
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## PACKAGE OUTLINE

Plastic surface mounted package; collector pad for good heat transfer; 4 leads

SOT223



## DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub>	b <sub>p</sub>	b <sub>1</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	Q	v	w	y
mm	1.8	0.10	0.80	3.1	0.32	6.7	3.7	4.6	2.3	7.3	1.1	0.95	0.2	0.1	0.1
	1.5	0.01	0.60	2.9	0.22	6.3	3.3			6.7	0.7	0.85			

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ	SC-73		
SOT223				SC-73		-97-02-28 99-09-13

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## 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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# **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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