



**THE DATASHEET OF  
PZTA42,115**



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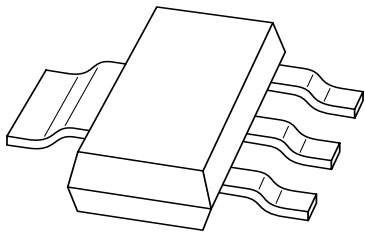
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Kind regards,

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

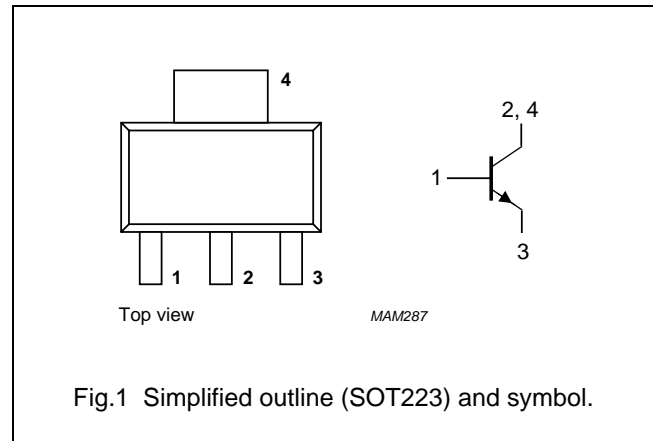
- Telephony and professional communication equipment.

## DESCRIPTION

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

## PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | base        |
| 2,4 | collector   |
| 3   | emitter     |



## 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       | $T_{amb} \leq 25\text{ °C}$ ; 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*”.

## NPN high-voltage transistor

PZTA42

## 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

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

| SYMBOL      | PARAMETER                            | CONDITIONS  | MIN.           | MAX.        | UNIT |
|-------------|--------------------------------------|---|----------------|-------------|------|
| $I_{CBO}$   | collector cut-off current            | $I_E = 0; V_{CB} = 200\text{ V}$  | –              | 20          | nA   |
| $I_{EBO}$   | emitter cut-off current              | $I_C = 0; V_{BE} = 6\text{ V}$  | –              | 100         | nA   |
| $h_{FE}$    | DC current gain                      | $V_{CE} = 10\text{ V}$<br>$I_C = 1\text{ mA}$<br>$I_C = 10\text{ mA}$<br>$I_C = 30\text{ mA}$ | 25<br>40<br>40 | –<br>–<br>– |      |
| $V_{CEsat}$ | 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  |

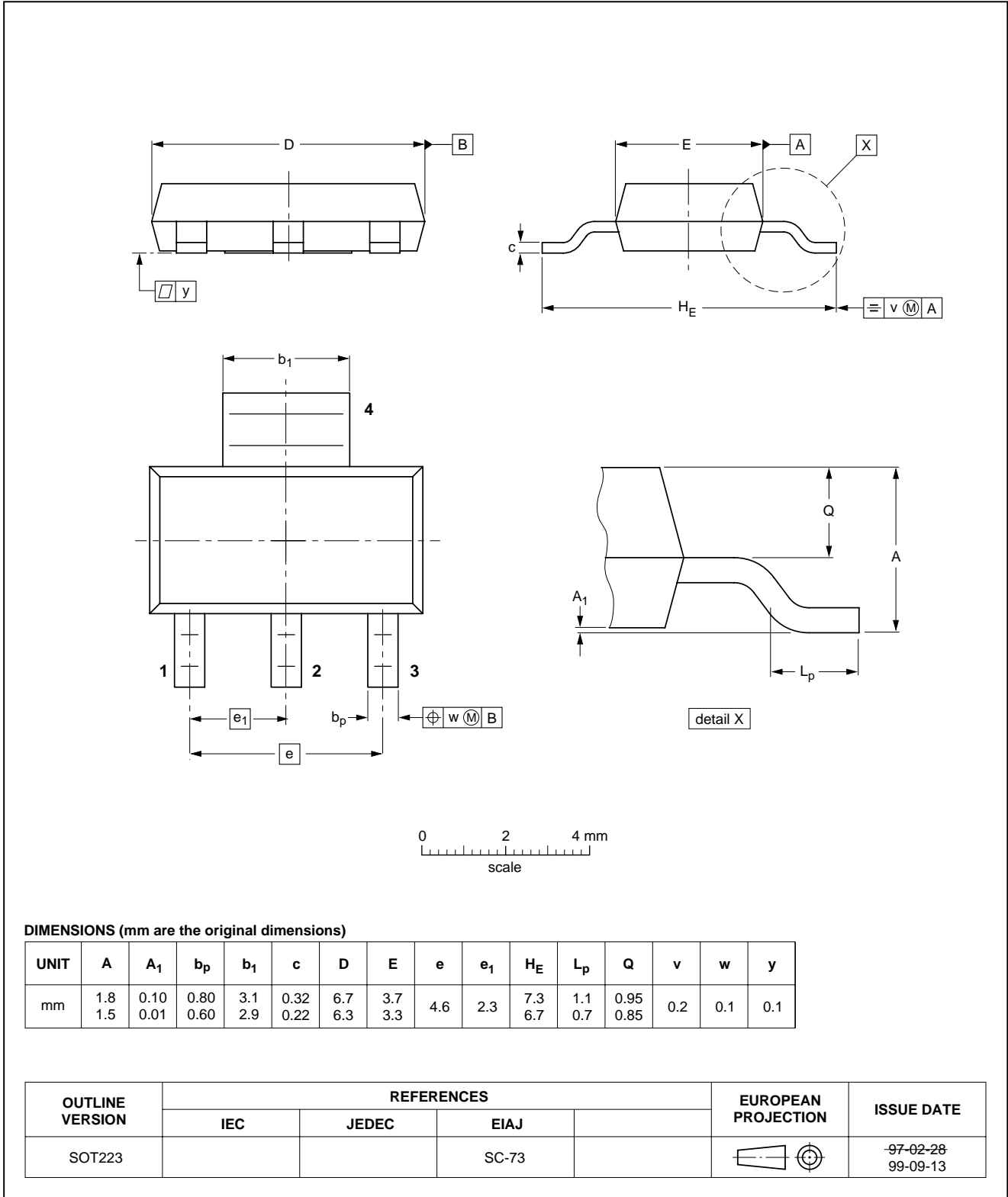
NPN high-voltage transistor

PZTA42

PACKAGE OUTLINE

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

SOT223



NPN high-voltage transistor

PZTA42

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.                                     |

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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>

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