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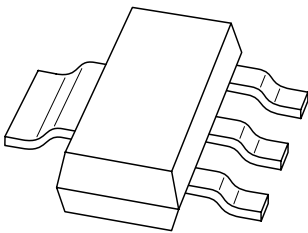
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Kind regards,

Team Nexperia

# DATA SHEET



## **PZTA14** NPN Darlington transistor

Product data sheet  
Supersedes data of 1997 Sep 04

1999 Apr 14



## NPN Darlington transistor

## PZTA14

## FEATURES

- High current (max. 500 mA)
- Low voltage (max. 30 V).

## APPLICATIONS

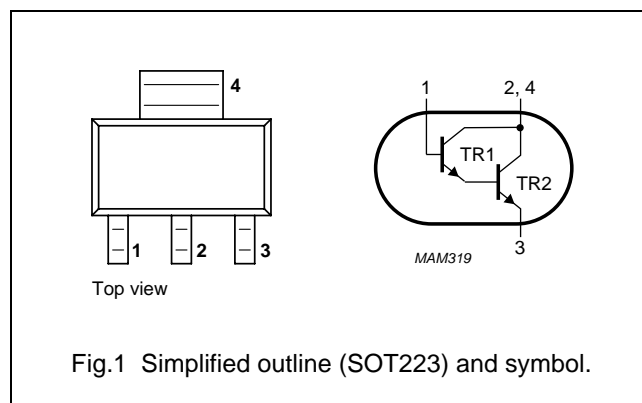
- Pre-amplifiers requiring high input impedance.

## DESCRIPTION

NPN Darlington transistor in a SOT223 plastic package.  
PNP complement: PZTA64.

## PINNING

PIN	DESCRIPTION
1	base/input
2, 4	collector/output
3	emitter/ground



## 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	–	30	V
$V_{CES}$	collector-emitter voltage	$V_{BE} = 0$	–	30	V
$V_{EBO}$	emitter-base voltage	open collector	–	10	V
$I_C$	collector current (DC)		–	500	mA
$I_{CM}$	peak collector current		–	800	mA
$I_B$	base current (DC)		–	200	mA
$P_{tot}$	total power dissipation	$T_{amb} \leq 25\text{ °C}$ ; note 1	–	1.25	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 Darlington transistor

PZTA14

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	100	K/W
$R_{th\ j-s}$	thermal resistance from junction to soldering point		19	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"*.

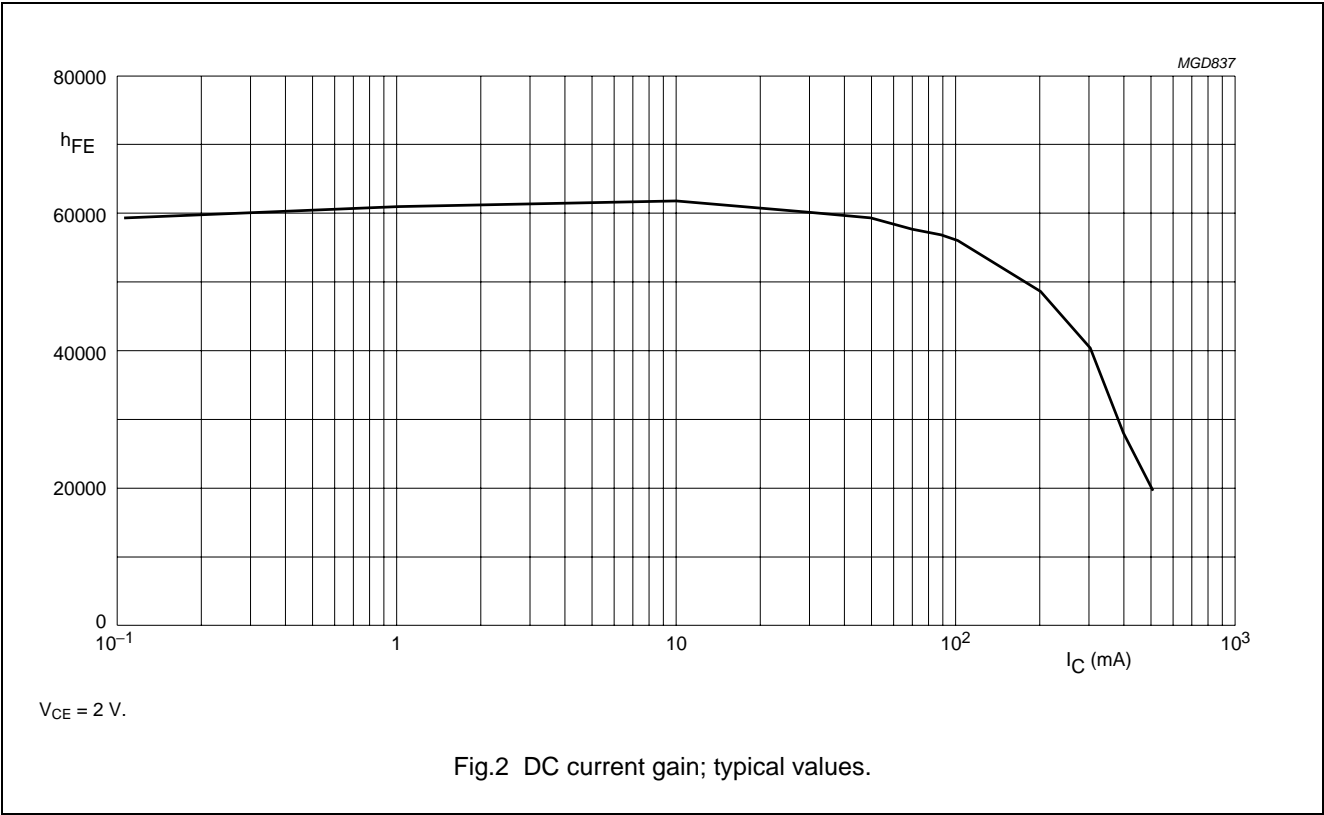
## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_{CBO}$	collector cut-off current	$I_E = 0$ ; $V_{CB} = 30\ \text{V}$	–	100	nA
$I_{CES}$	collector cut-off current	$V_{BE} = 0$ ; $V_{CE} = 30\ \text{V}$	–	100	nA
$I_{EBO}$	emitter cut-off current	$I_C = 0$ ; $V_{EB} = 10\ \text{V}$	–	100	nA
$h_{FE}$	DC current gain	$V_{CE} = 5\ \text{V}$ ; (see Fig.2) $I_C = 10\ \text{mA}$ $I_C = 100\ \text{mA}$	10000 20000	– –	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = 100\ \text{mA}$ ; $I_B = 0.1\ \text{mA}$	–	1.5	V
$V_{BEon}$	base-emitter on-state voltage	$I_C = 100\ \text{mA}$ ; $V_{CE} = 5\ \text{V}$	–	2	V
$f_T$	transition frequency	$I_C = 10\ \text{mA}$ ; $V_{CE} = 5\ \text{V}$ ; $f = 100\ \text{MHz}$	125	–	MHz

NPN Darlington transistor

PZTA14



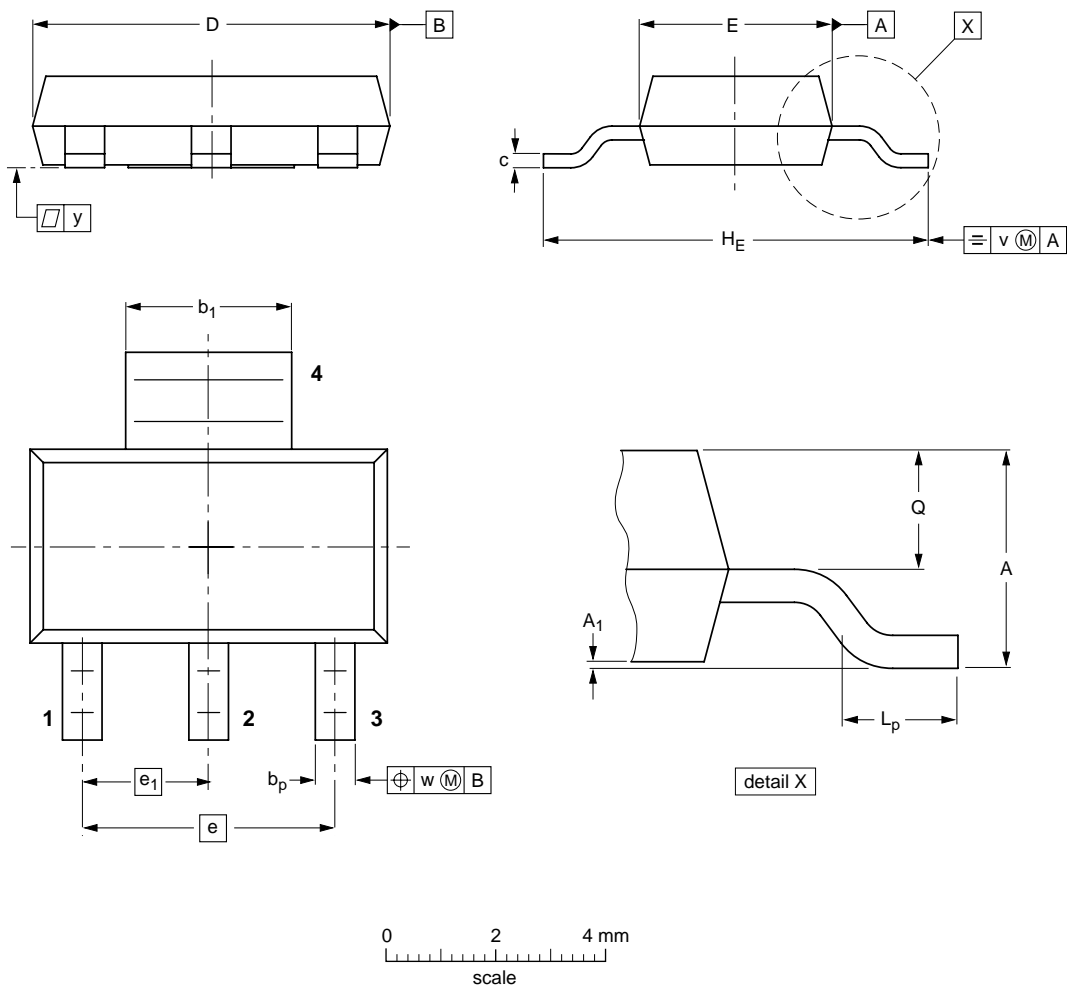
NPN Darlington transistor

PZTA14

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 1.5	0.10 0.01	0.80 0.60	3.1 2.9	0.32 0.22	6.7 6.3	3.7 3.3	4.6	2.3	7.3 6.7	1.1 0.7	0.95 0.85	0.2	0.1	0.1

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

## NPN Darlington transistor

## PZTA14

## 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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