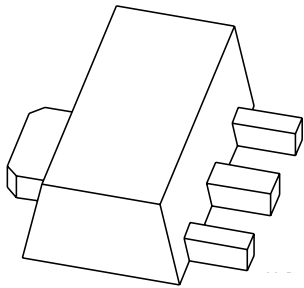


# DATA SHEET



## **PXTA14** NPN Darlington transistor

Product data sheet  
Supersedes data of 1999 Apr 14

2004 Dec 09

# NPN Darlington transistor

# PXTA14

### FEATURES

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

### APPLICATIONS

- High input impedance preamplifiers.

### DESCRIPTION

NPN Darlington transistor in a SOT89 plastic package.  
PNP complement: PXTA64.

### MARKING

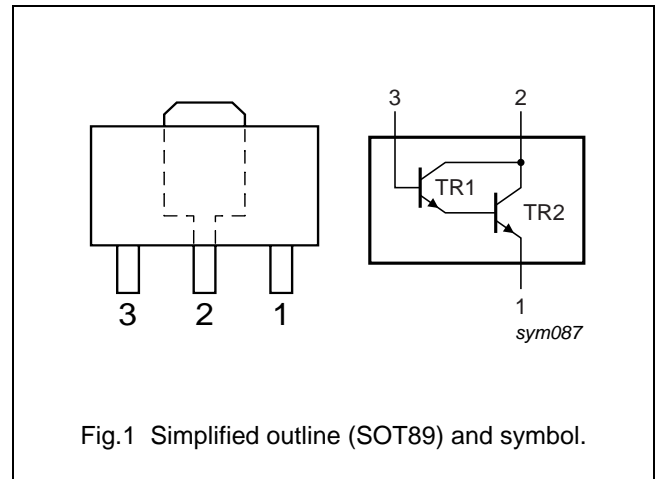
TYPE NUMBER	MARKING CODE <sup>(1)</sup>
PXTA14	*1N

### Note

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

### PINNING

PIN	DESCRIPTION
1	emitter
2	collector
3	base



### ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
PXTA14	SC-62	plastic surface mounted package; collector pad for good heat transfer; 3 leads	SOT89

## NPN Darlington transistor

PXTA14

**LIMITING VALUES**

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{CBO}$	collector-base voltage	open emitter	–	30	V
$V_{CES}$	collector-emitter voltage	$V_{BE} = 0\text{ V}$	–	30	V
$V_{EBO}$	emitter-base voltage	open collector	–	10	V
$I_C$	collector current (DC)		–	500	mA
$I_{CM}$	peak collector current		–	1	A
$I_B$	base current (DC)		–	200	mA
$P_{tot}$	total power dissipation	$T_{amb} \leq 25\text{ °C}$ ; note 1	–	1.3	W
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C
$T_{amb}$	ambient temperature		–65	+150	°C

**Note**

- Device mounted on a printed-circuit board, single-sided copper, tin-plated, mounting pad for collector 6 cm<sup>2</sup>. For other mounting conditions, see “*Thermal considerations for the SOT89 in the General Part of associated Handbook*”.

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th(j-a)}$	thermal resistance from junction to ambient	note 1	96	K/W
$R_{th(j-s)}$	thermal resistance from junction to solder point		16	K/W

**Note**

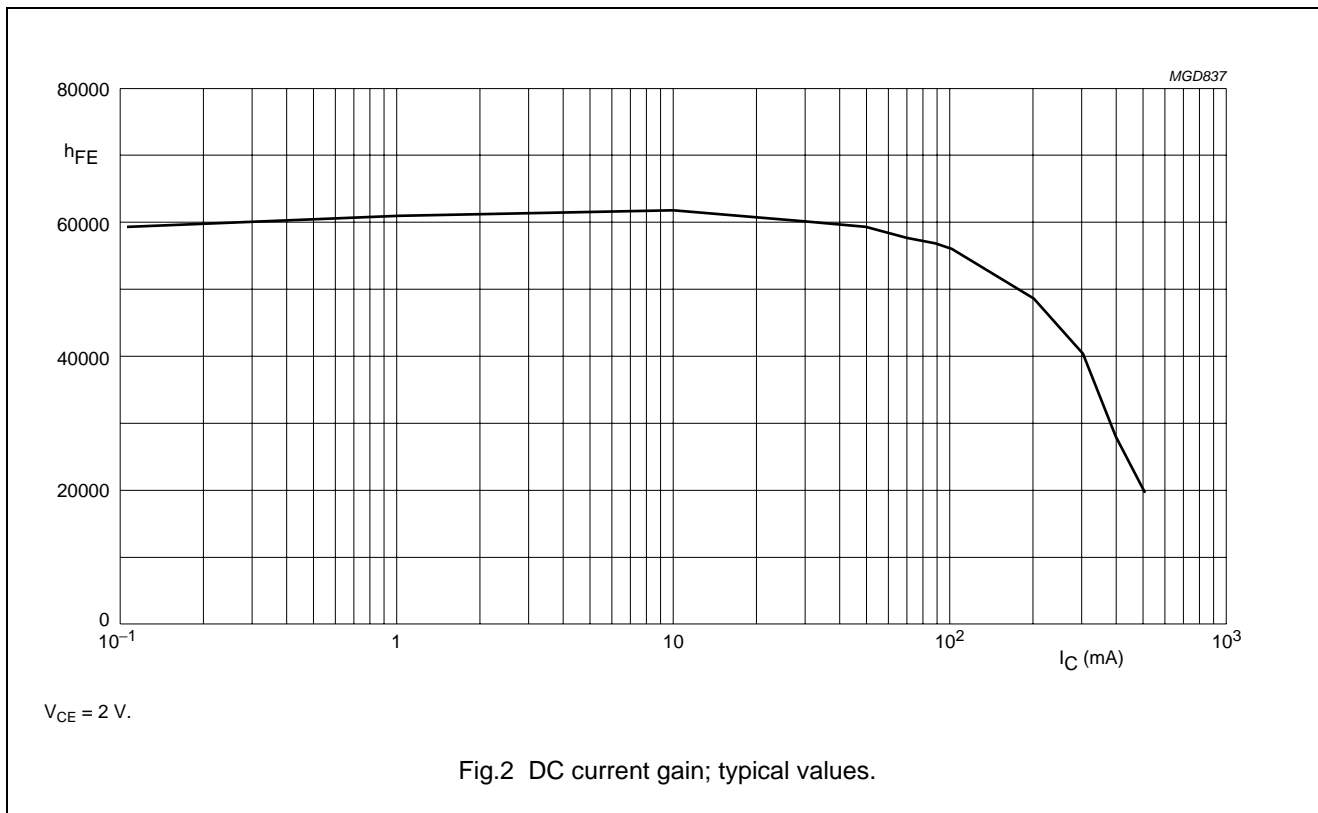
- Device mounted on a printed-circuit board, single-sided copper, tin-plated, mounting pad for collector 6 cm<sup>2</sup>. For other mounting conditions, see “*Thermal considerations for the SOT89 in the General Part of associated Handbook*”.

**CHARACTERISTICS** $T_{amb} = 25\text{ °C}$  unless otherwise specified.

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

NPN Darlington transistor

PXTA14



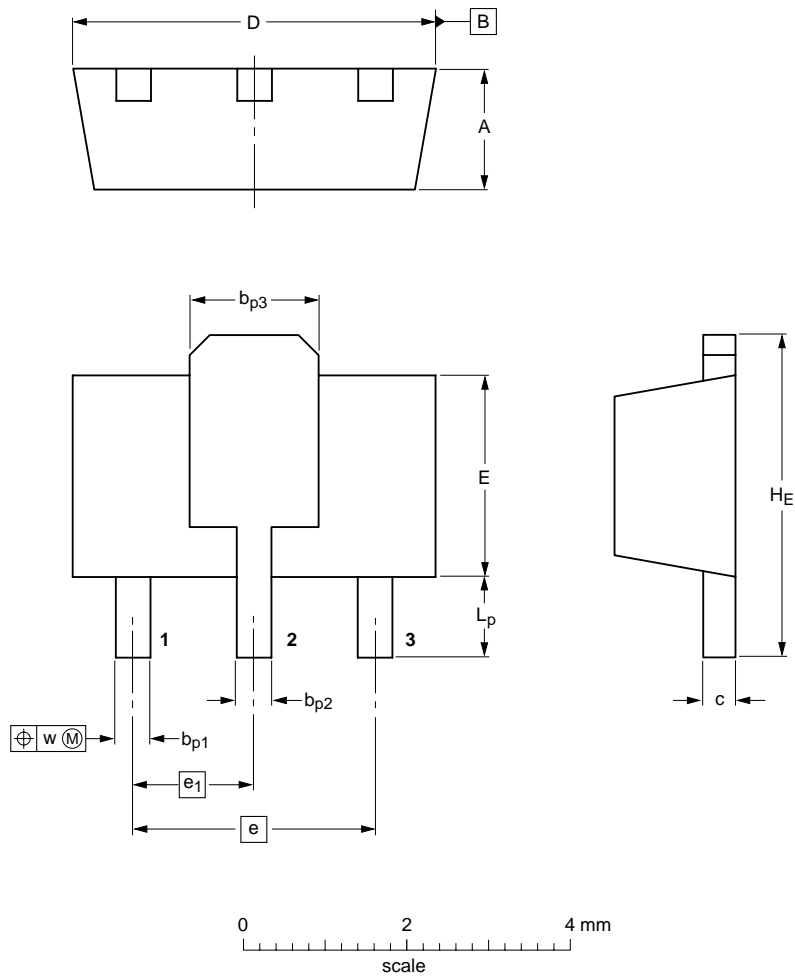
NPN Darlington transistor

PXTA14

PACKAGE OUTLINE

Plastic surface-mounted package; collector pad for good heat transfer; 3 leads

SOT89



DIMENSIONS (mm are the original dimensions)

UNIT	A	b <sub>p1</sub>	b <sub>p2</sub>	b <sub>p3</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	w
mm	1.6 1.4	0.48 0.35	0.53 0.40	1.8 1.4	0.44 0.23	4.6 4.4	2.6 2.4	3.0	1.5	4.25 3.75	1.2 0.8	0.13

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT89		TO-243	SC-62			04-08-03 06-03-16

## NPN Darlington transistor

PXTA14

## 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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## **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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