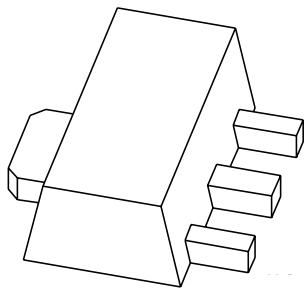


DATA SHEET



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

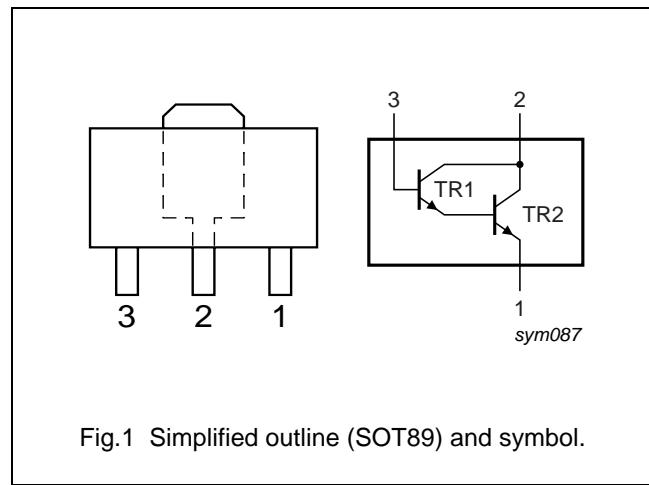
TYPE NUMBER	MARKING CODE ⁽¹⁾
PXTA14	*1N

Note

1. * = 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

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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	$V_{BE} = 0$ 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	$T_{amb} \leq 25$ °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

1. Device mounted on a printed-circuit board, single-sided copper, tin-plated, mounting pad for collector 6 cm². 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

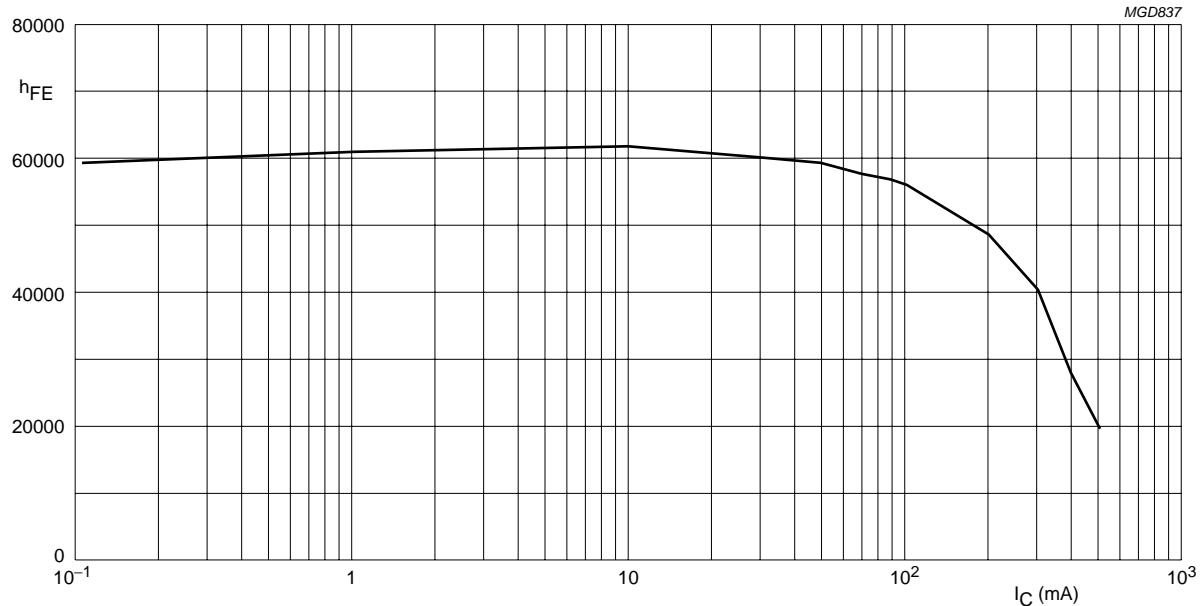
1. Device mounted on a printed-circuit board, single-sided copper, tin-plated, mounting pad for collector 6 cm². For other mounting conditions, see "Thermal considerations for the SOT89 in the General Part of associated Handbook".

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

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

NPN Darlington transistor

PXTA14



V_{CE} = 2 V.

Fig.2 DC current gain; typical values.

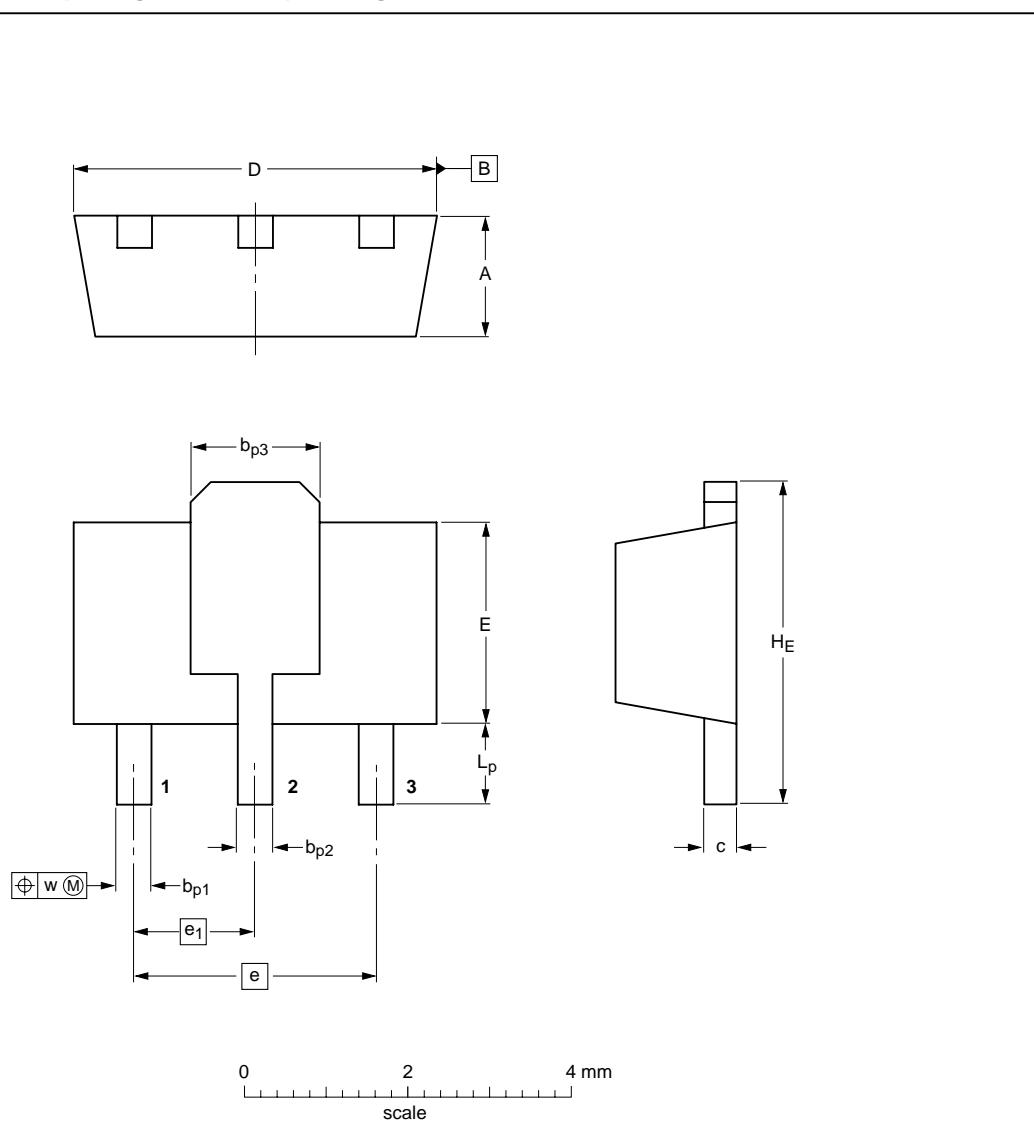
NPN Darlington transistor

PXTA14

PACKAGE OUTLINE

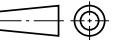
Plastic surface-mounted package; collector pad for good heat transfer; 3 leads

SOT89



DIMENSIONS (mm are the original dimensions)

UNIT	A	b _{p1}	b _{p2}	b _{p3}	c	D	E	e	e ₁	H _E	L _p	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 ⁽¹⁾	PRODUCT STATUS ⁽²⁾	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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2. The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

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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.

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