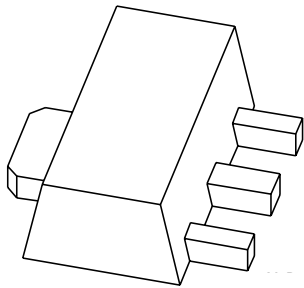


DATA SHEET



PXTA14 NPN Darlington transistor

Product specification
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

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

PINNING

PIN	DESCRIPTION
1	emitter
2	collector
3	base

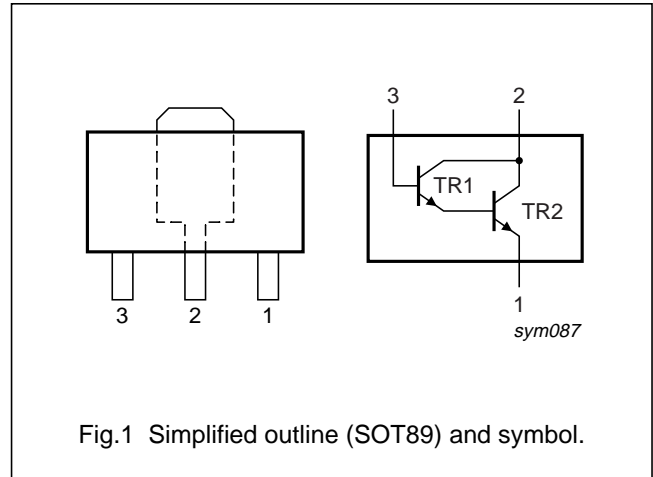


Fig.1 Simplified outline (SOT89) and symbol.

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 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

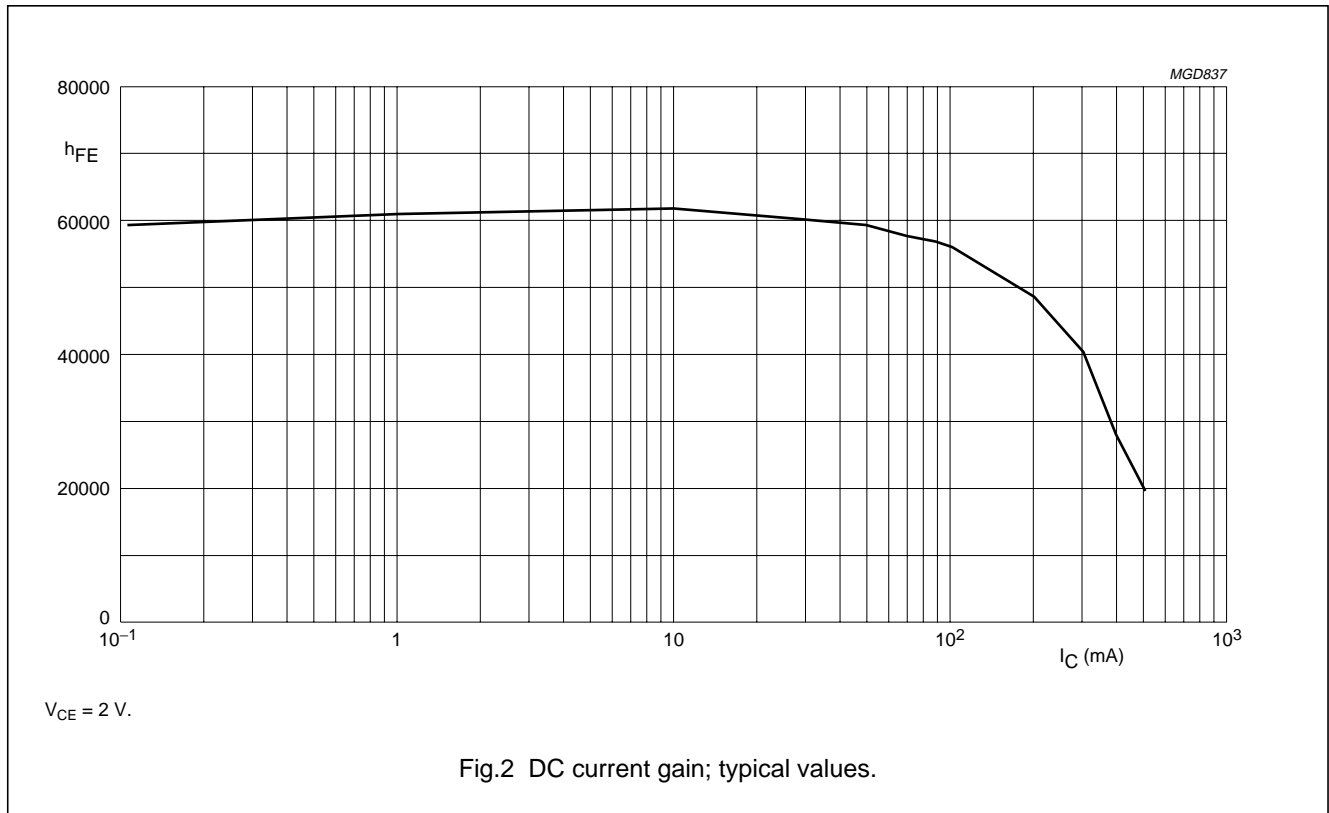
- Device mounted on a printed-circuit board, single-sided copper, tin-plated, mounting pad for collector 6 cm². For other mounting conditions, see “*Thermal considerations for the SOT89 in the General Part of associated Handbook*”.

CHARACTERISTICS $T_{amb} = 25\text{ °C}$ 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



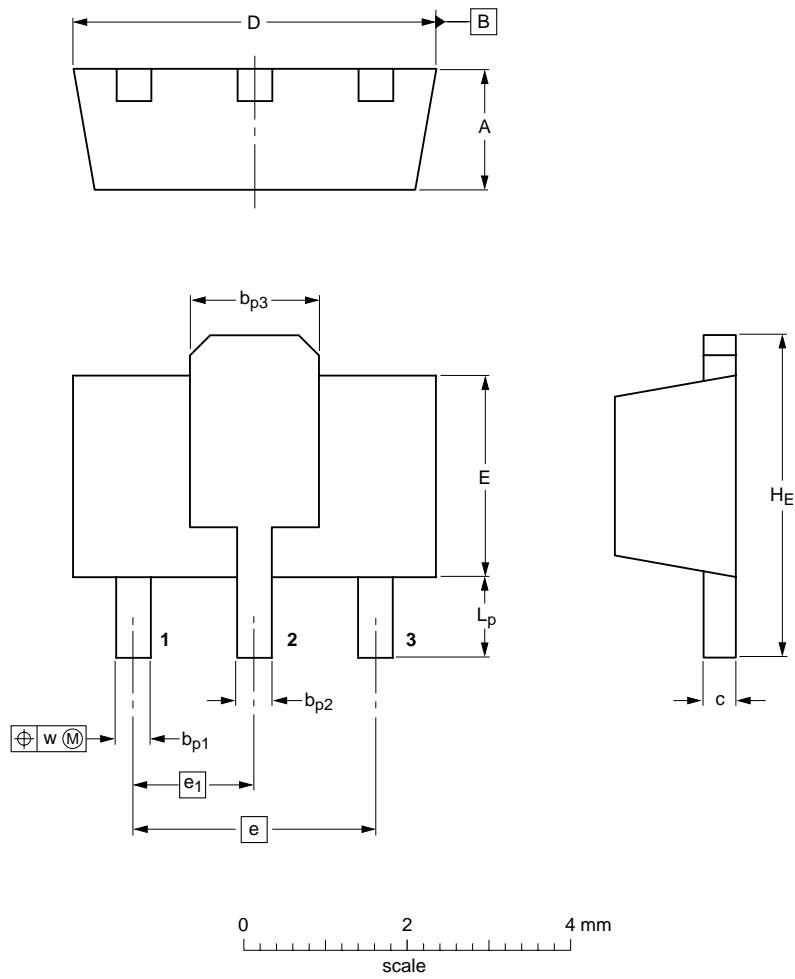
NPN Darlington transistor

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 _{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		99-09-13 04-08-03

NPN Darlington transistor

PXTA14

DATA SHEET STATUS

LEVEL	DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾⁽³⁾	DEFINITION
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
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Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.

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