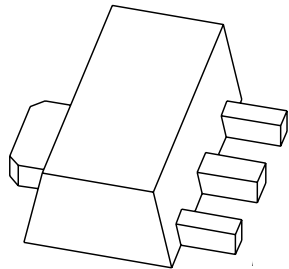


DATA SHEET



PXTA42 NPN high-voltage transistor

Product specification
Supersedes data of 1999 Apr 26

2004 Dec 09

NPN high-voltage transistor

PXTA42

FEATURES

- Low current (max. 100 mA)
- High voltage (max. 300 V).

APPLICATIONS

- Telephony and professional communication equipment.

DESCRIPTION

NPN high-voltage transistor in a SOT89 plastic package.
PNP complement: PXTA92.

MARKING

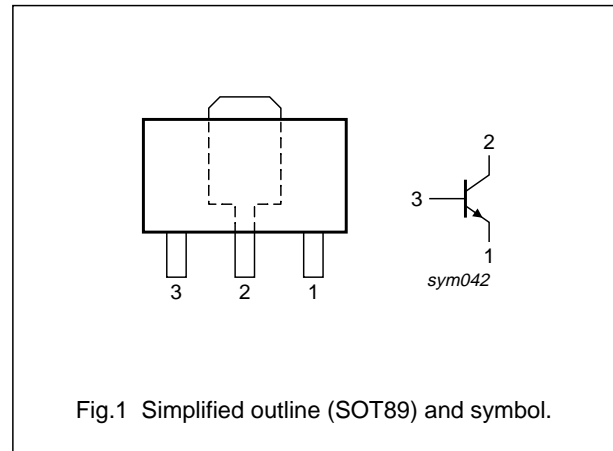
TYPE NUMBER	MARKING CODE ⁽¹⁾
PXTA42	*1N

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
PXTA42	SC-62	plastic surface mounted package; collector pad for good heat transfer; 3 leads	SOT89

NPN high-voltage transistor

PXTA42

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	–	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	–	1.3	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 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 soldering 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 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	$I_E = 0\text{ A}$; $V_{CB} = 200\text{ V}$	–	100	nA
I_{EBO}	emitter-base cut-off current	$I_C = 0\text{ A}$; $V_{BE} = 6\text{ V}$	–	100	nA
h_{FE}	DC current gain	$I_C = 1\text{ mA}$; $V_{CE} = 10\text{ V}$	25	–	
		$I_C = 10\text{ mA}$; $V_{CE} = 10\text{ V}$	40	–	
		$I_C = 30\text{ mA}$; $V_{CE} = 10\text{ V}$	40	–	
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	$I_C = i_c = 0\text{ A}$; $V_{CB} = 20\text{ V}$; $f = 1\text{ MHz}$	–	3	pF
f_T	transition frequency	$I_C = 10\text{ mA}$; $V_{CE} = 20\text{ V}$; $f = 100\text{ MHz}$	50	–	MHz

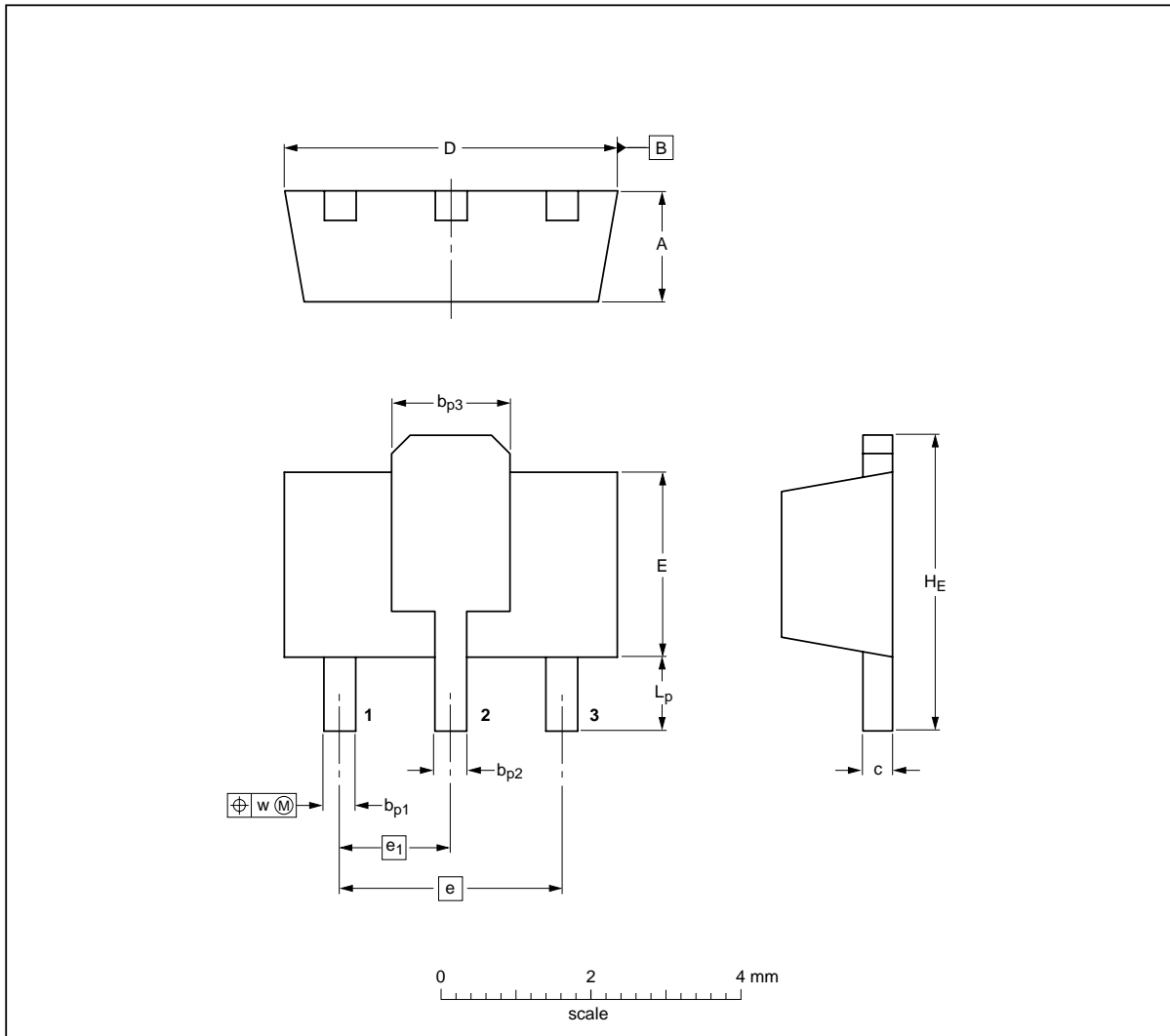
NPN high-voltage transistor

PXTA42

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 high-voltage transistor

PXTA42

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.
II	Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
III	Product data	Production	This data sheet contains data from the product specification. Philips Semiconductors reserves the right to make changes at any time in order to improve the design, manufacturing and supply. Relevant changes will be communicated via a Customer Product/Process Change Notification (CPCN).

Notes

1. Please consult the most recently issued data sheet before initiating or completing a design.
2. The product status of the device(s) described in this data sheet may have changed since this data sheet was published. The latest information is available on the Internet at URL <http://www.semiconductors.philips.com>.
3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

DEFINITIONS

Short-form specification — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

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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