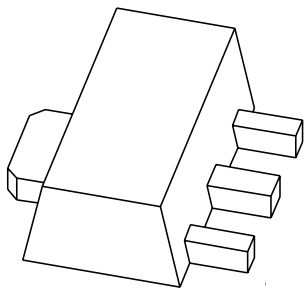


DATA SHEET



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

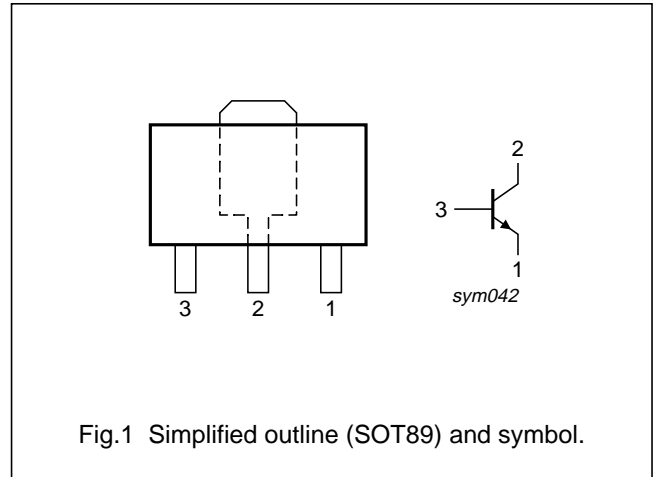
| TYPE NUMBER | MARKING CODE ⁽¹⁾ |
|-------------|-----------------------------|
| PXTA42 | *1N |

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 |

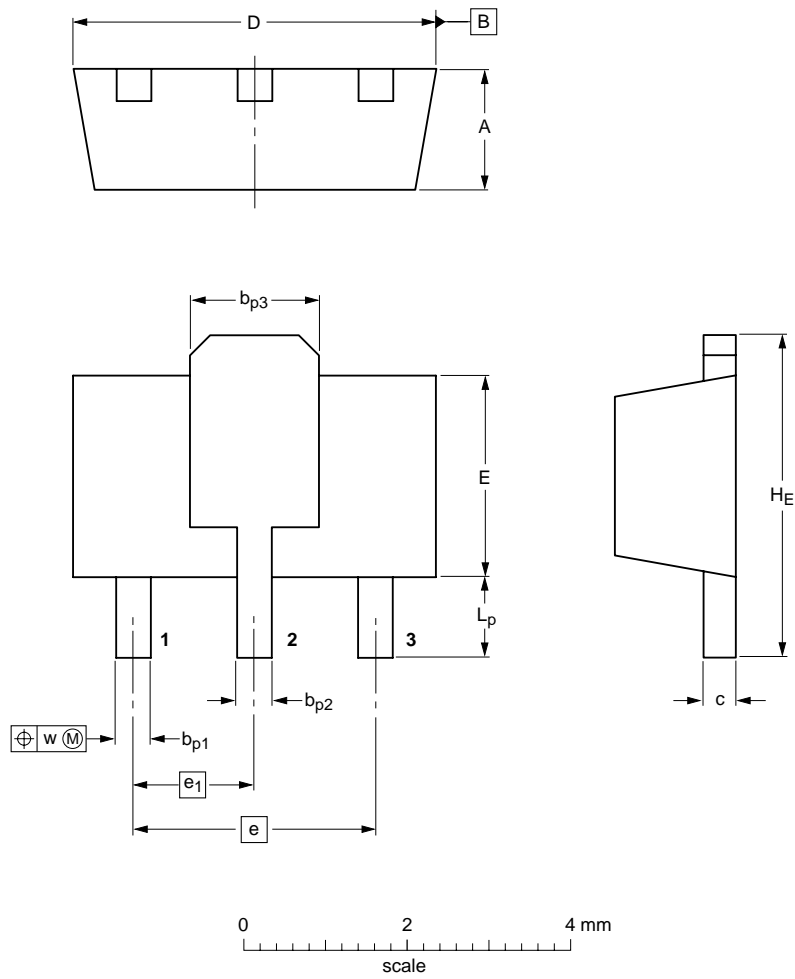
NPN high-voltage transistor

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. |
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Contact information

For additional information please visit <http://www.semiconductors.philips.com>. Fax: +31 40 27 24825

For sales offices addresses send e-mail to: sales.addresses@www.semiconductors.philips.com.

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