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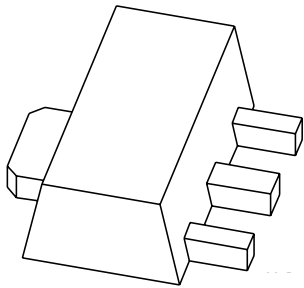
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Kind regards,

Team Nexperia

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

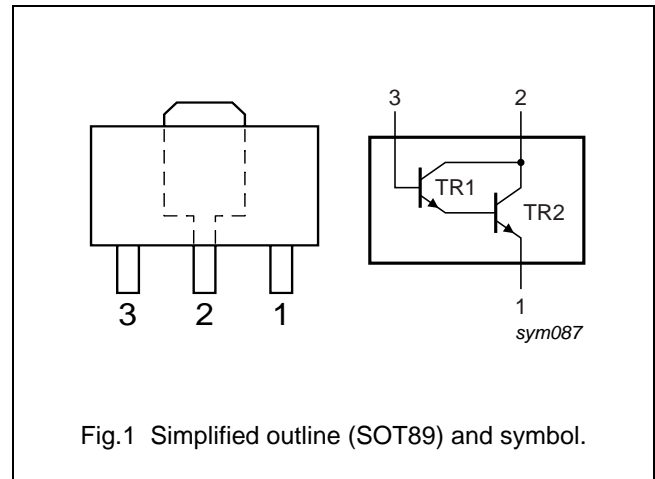
| TYPE NUMBER | MARKING CODE ⁽¹⁾ |
|-------------|-----------------------------|
| PXTA14 | *1N |

Note

- * = 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 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*”.

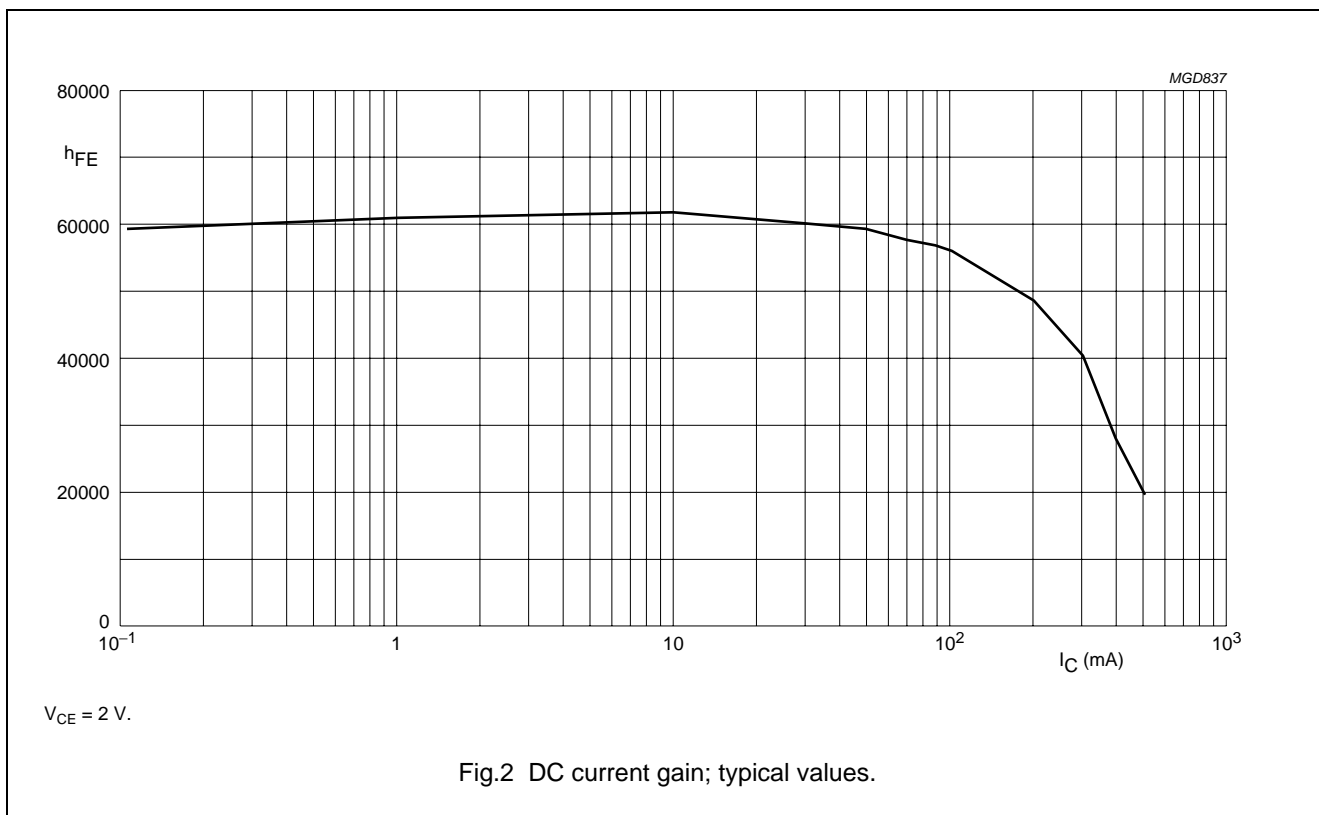
CHARACTERISTICS

 $T_{amb} = 25\text{ °C}$ 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



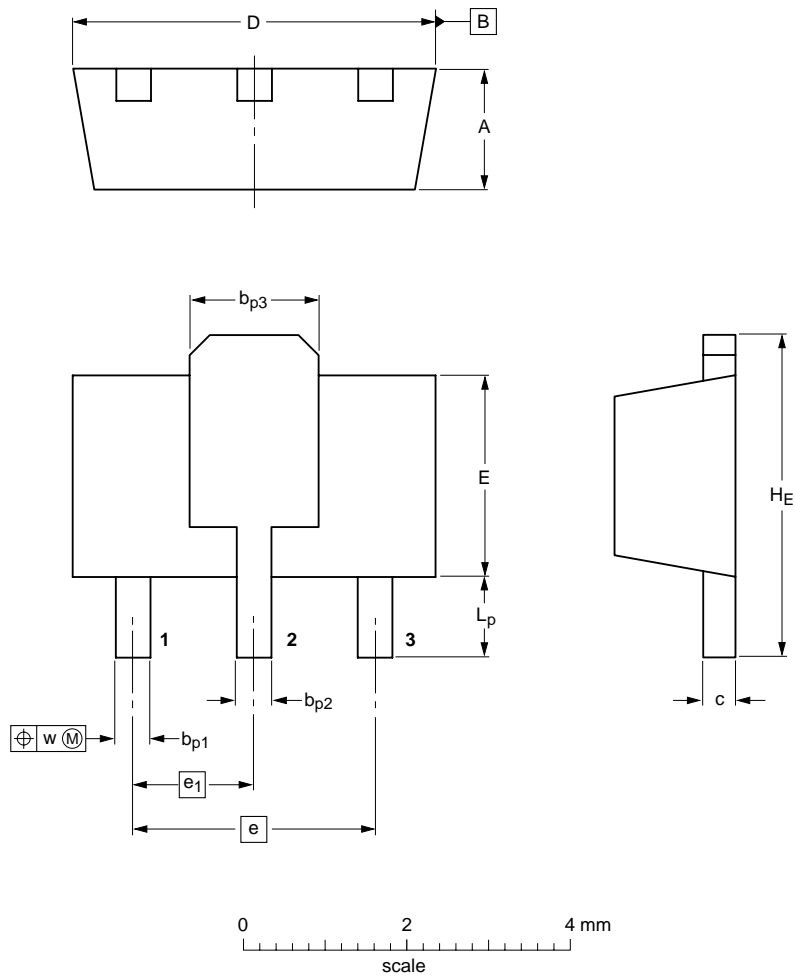
NPN Darlington transistor

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 | | 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. |

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NXP Semiconductors

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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