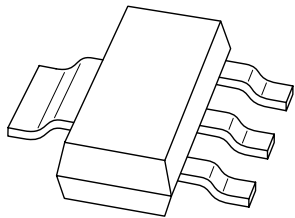


DATA SHEET



PZTA14 NPN Darlington transistor

Product data sheet
Supersedes data of 1997 Sep 04

1999 Apr 14

NPN Darlington transistor

PZTA14

FEATURES

- High current (max. 500 mA)
- Low voltage (max. 30 V).

APPLICATIONS

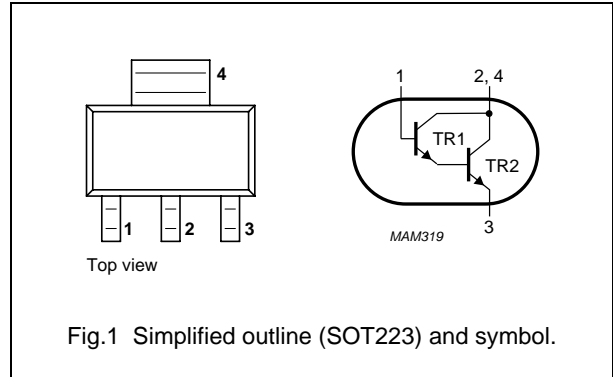
- Pre-amplifiers requiring high input impedance.

DESCRIPTION

NPN Darlington transistor in a SOT223 plastic package.
PNP complement: PZTA64.

PINNING

| PIN | DESCRIPTION |
|------|------------------|
| 1 | base/input |
| 2, 4 | collector/output |
| 3 | emitter/ground |



LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-----------|-------------------------------|--------------------------------------|------|------|------|
| V_{CBO} | collector-base voltage | open emitter | – | 30 | V |
| V_{CES} | collector-emitter voltage | $V_{BE} = 0$ | – | 30 | V |
| V_{EBO} | emitter-base voltage | open collector | – | 10 | V |
| I_C | collector current (DC) | | – | 500 | mA |
| I_{CM} | peak collector current | | – | 800 | mA |
| I_B | base current (DC) | | – | 200 | mA |
| P_{tot} | total power dissipation | $T_{amb} \leq 25\text{ °C}$; note 1 | – | 1.25 | W |
| T_{stg} | storage temperature | | –65 | +150 | °C |
| T_j | junction temperature | | – | 150 | °C |
| T_{amb} | operating ambient temperature | | –65 | +150 | °C |

Note

1. Device mounted on a printed-circuit board, single-sided copper, tinned, mounting pad for collector 1 cm². For other mounting conditions, see “Thermal considerations for SOT223 in the General Part of associated Handbook”.

NPN Darlington transistor

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THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---------------|---|------------|-------|------|
| $R_{th\ j-a}$ | thermal resistance from junction to ambient | note 1 | 100 | K/W |
| $R_{th\ j-s}$ | thermal resistance from junction to soldering point | | 19 | K/W |

Note

1. Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 1 cm². For other mounting conditions, see "Thermal considerations for SOT223 in the General Part of associated Handbook".

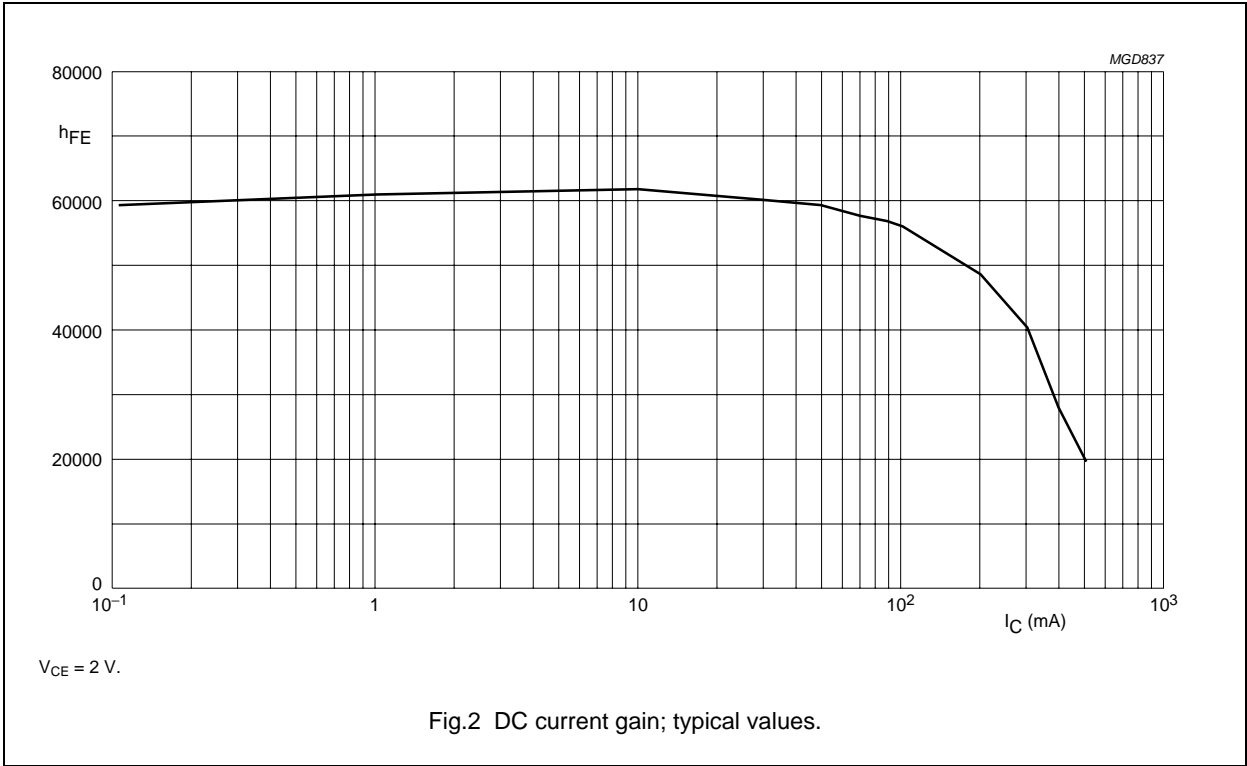
CHARACTERISTICS

$T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-------------|--------------------------------------|--|----------------|--------|------|
| I_{CBO} | collector cut-off current | $I_E = 0; V_{CB} = 30\text{ V}$ | – | 100 | nA |
| I_{CES} | collector cut-off current | $V_{BE} = 0; V_{CE} = 30\text{ V}$ | – | 100 | nA |
| I_{EBO} | emitter cut-off current | $I_C = 0; V_{EB} = 10\text{ V}$ | – | 100 | nA |
| h_{FE} | DC current gain | $V_{CE} = 5\text{ V}$; (see Fig.2) $I_C = 10\text{ mA}$ $I_C = 100\text{ mA}$ | 10000 20000 | – – | |
| V_{CEsat} | collector-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 | $I_C = 10\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$ | 125 | – | MHz |

NPN Darlington transistor

PZTA14



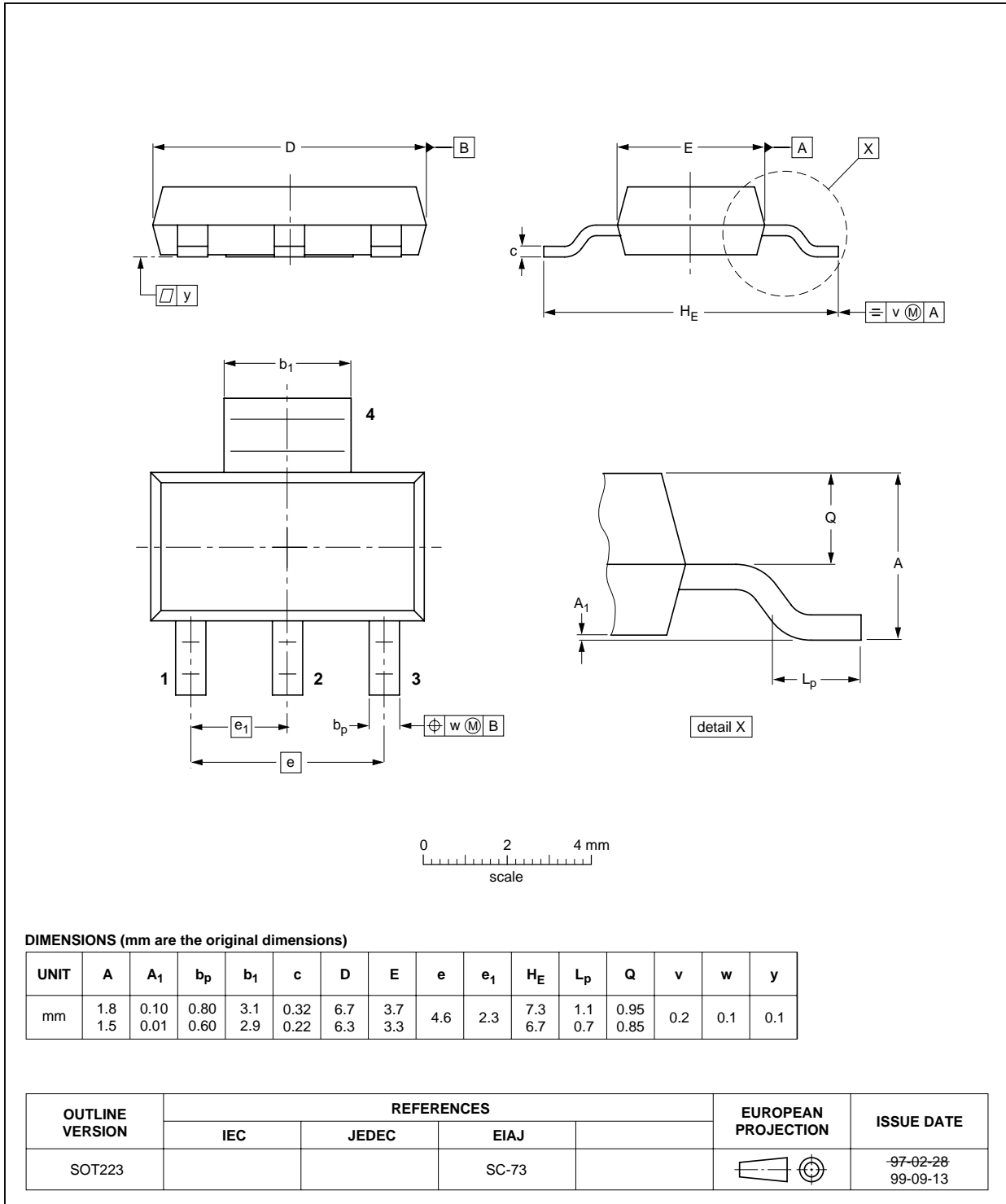
NPN Darlington transistor

PZTA14

PACKAGE OUTLINE

Plastic surface mounted package; collector pad for good heat transfer; 4 leads

SOT223



NPN Darlington transistor

PZTA14

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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