

Important notice

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Should be replaced with:

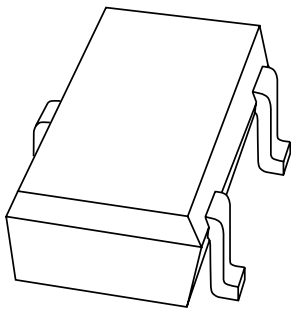
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Kind regards,

Team Nexperia

DATA SHEET



PMST5088; PMST5089 NPN general purpose transistors

Product data sheet
Supersedes data of 1997 May 22

1999 Apr 22

NPN general purpose transistors

PMST5088; PMST5089

FEATURES

- Low current (max. 100 mA)
- Low voltage (max. 30 V).

APPLICATIONS

- Low-noise input stages in audio equipment.

DESCRIPTION

NPN transistor in a SC-70; SOT323 plastic package.

MARKING

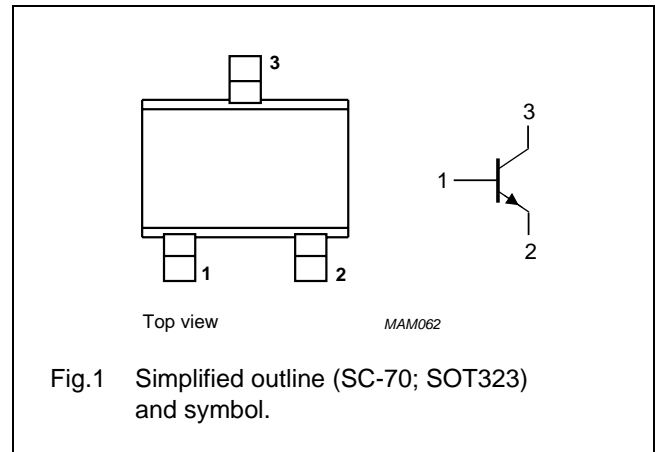
| TYPE NUMBER | MARKING CODE ⁽¹⁾ |
|-------------|-----------------------------|
| PMST5088 | *1Q |
| PMST5089 | *1R |

Note

- * = - : Made in Hong Kong.
* = t : Made in Malaysia.

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | base |
| 2 | emitter |
| 3 | collector |



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 | | | |
| | PMST5088 | | - | 35 | V |
| | PMST5089 | | - | 30 | V |
| V _{CEO} | collector-emitter voltage | open base | | | |
| | PMST5088 | | - | 30 | V |
| | PMST5089 | | - | 25 | V |
| V _{EBO} | emitter-base voltage | open collector | - | 4.5 | 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} ≤ 25 °C; note 1 | - | 200 | mW |
| T _{stg} | storage temperature | | -65 | +150 | °C |
| T _j | junction temperature | | - | 150 | °C |
| T _{amb} | operating ambient temperature | | -65 | +150 | °C |

Note

1. Transistor mounted on an FR4 printed-circuit board.

NPN general purpose transistors

PMST5088; PMST5089

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---------------|---|------------|-------|------|
| $R_{th\ j-a}$ | thermal resistance from junction to ambient | note 1 | 625 | K/W |

Note

1. Transistor mounted on an FR4 printed-circuit board.

CHARACTERISTICS

$T_{amb} = 25\text{ °C}$ unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|----------------------|--------------------------------------|--|------|------|---------------|
| I_{CBO} | collector cut-off current | $I_E = 0; V_{CB} = 20\text{ V}$ | – | 50 | nA |
| | | $I_E = 0; V_{CB} = 20\text{ V}; T_j = 150\text{ °C}$ | – | 10 | μA |
| I_{EBO} | emitter cut-off current | $I_C = 0; V_{EB} = 3\text{ V}$ | – | 50 | nA |
| | | $I_C = 0; V_{EB} = 4.5\text{ V}$ | – | 100 | nA |
| h_{FE} | DC current gain PMST5088 | $V_{CE} = 5\text{ V}$ $I_C = 0.1\text{ mA}$ | 300 | 900 | |
| | | $I_C = 1\text{ mA}$ | 350 | – | |
| | | $I_C = 10\text{ mA}$ | 300 | – | |
| | DC current gain PMST5089 | $V_{CE} = 5\text{ V}$ $I_C = 0.1\text{ mA}$ | 400 | 1200 | |
| $I_C = 1\text{ mA}$ | | 450 | – | | |
| $I_C = 10\text{ mA}$ | | 400 | – | | |
| V_{CEsat} | collector-emitter saturation voltage | $I_C = 10\text{ mA}; I_B = 1\text{ mA}$ | – | 500 | mV |
| V_{BE} | base-emitter voltage | $I_C = 10\text{ mA}; V_{CE} = 5\text{ V}$ | – | 800 | mV |
| C_c | collector capacitance | $I_E = I_C = 0; V_{CB} = 5\text{ V}; f = 1\text{ MHz}$ | – | 4 | pF |
| C_e | emitter capacitance | $I_C = I_E = 0; V_{EB} = 0.5\text{ V}; f = 1\text{ MHz}$ | – | 12 | pF |
| f_T | transition frequency | $I_C = 10\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$ | 100 | – | MHz |
| F | noise figure PMST5088 PMST5089 | $I_C = 100\text{ }\mu\text{A}; V_{CE} = 5\text{ V}; R_S = 1\text{ k}\Omega$ $f = 10\text{ Hz to }15.7\text{ kHz}$ | – | 3 | dB |
| | | | – | 2 | dB |

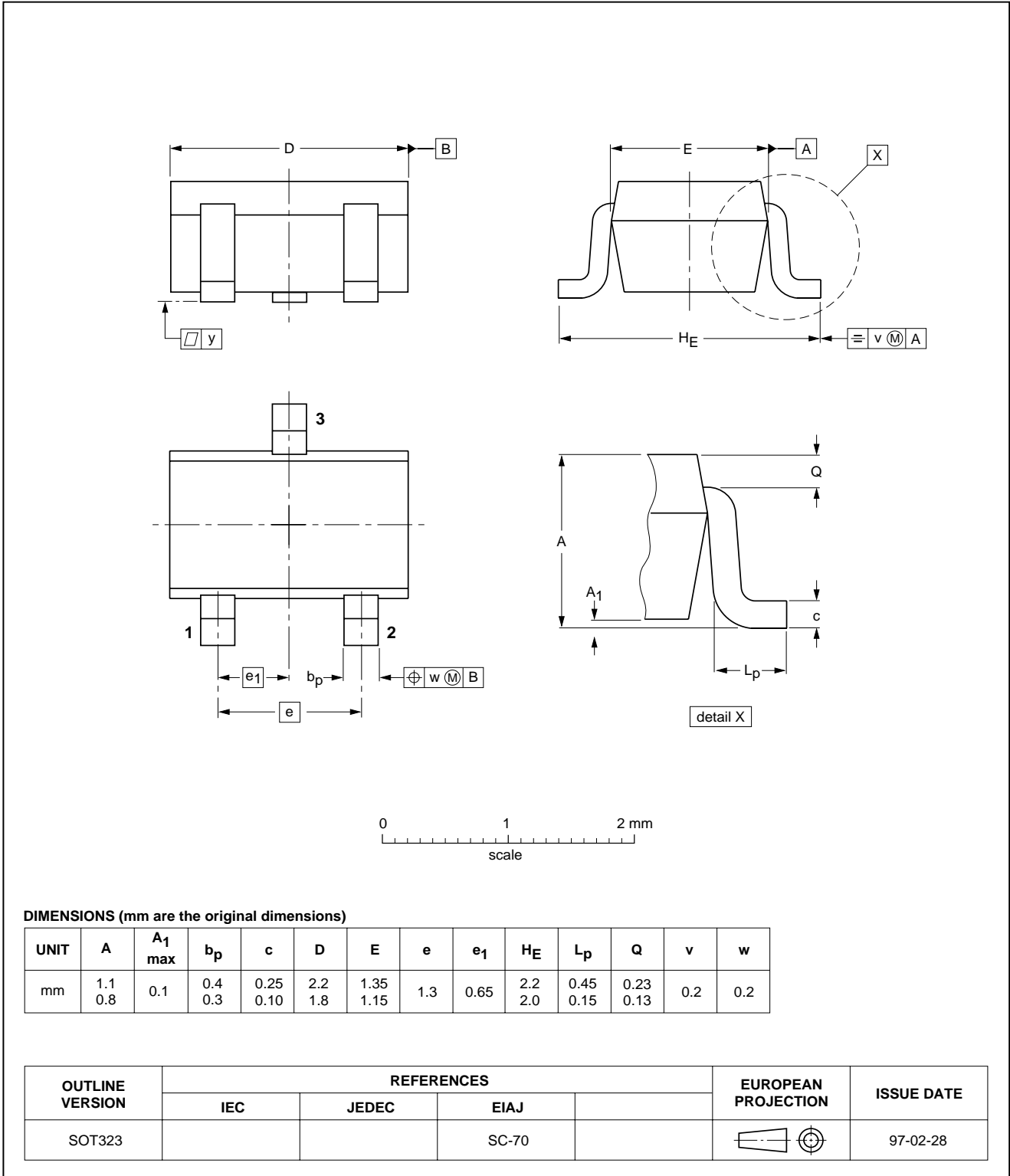
NPN general purpose transistors

PMST5088; PMST5089

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



NPN general purpose transistors

PMST5088; PMST5089

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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2. The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

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NXP Semiconductors

Customer notification

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Contact information

For additional information please visit: **<http://www.nxp.com>**

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