

DATA SHEET



PMBTA92 PNP high-voltage transistor

Product data sheet
Supersedes data of 1999 Apr 13

2004 Jan 22

PNP high-voltage transistor

PMBTA92

FEATURES

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

APPLICATIONS

- Telephony
- Professional communication equipment.

DESCRIPTION

PNP high-voltage transistor in a SOT23 plastic package.
NPN complement: PMBTA42.

MARKING

| TYPE NUMBER | MARKING CODE ⁽¹⁾ |
|-------------|-----------------------------|
| PMBTA92 | *2D |

Note

- * = p : Made in Hong Kong.
* = t : Made in Malaysia.
* = W : Made in China.

PINNING

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

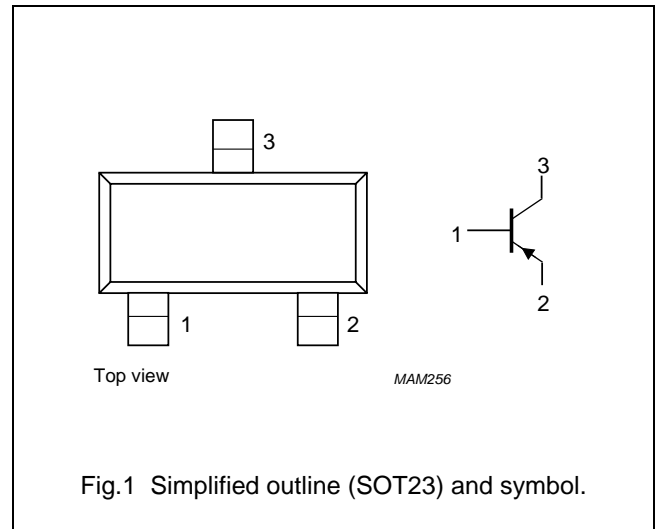


Fig.1 Simplified outline (SOT23) and symbol.

ORDERING INFORMATION

| TYPE NUMBER | PACKAGE | | |
|-------------|---------|--|---------|
| | NAME | DESCRIPTION | VERSION |
| PMBTA92 | – | plastic surface mounted package; 3 leads | SOT23 |

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 | – | –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 | – | 250 | 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.

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THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---------------|---|------------|-------|------|
| $R_{th(j-a)}$ | thermal resistance from junction to ambient | note 1 | 500 | K/W |

Note

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

CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-------------|--------------------------------------|--|----------------|-------------|------|
| I_{CBO} | collector cut-off current | $I_E = 0$; $V_{CB} = -200\text{ V}$ | – | –250 | nA |
| I_{EBO} | emitter cut-off current | $I_C = 0$; $V_{EB} = -3\text{ V}$ | – | –100 | nA |
| h_{FE} | DC current gain | $V_{CE} = -10\text{ V}$; note 1 $I_C = -1\text{ mA}$ $I_C = -10\text{ mA}$ $I_C = -30\text{ mA}$ | 25 40 25 | – – – | |
| 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_c | collector capacitance | $I_E = I_e = 0$; $V_{CB} = -20\text{ V}$; $f = 1\text{ MHz}$ | – | 6 | pF |
| f_T | transition frequency | $I_C = -10\text{ mA}$; $V_{CE} = -20\text{ V}$; $f = 100\text{ MHz}$ | 50 | – | MHz |

Note

1. Pulse test: $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$.

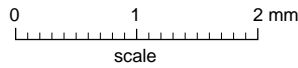
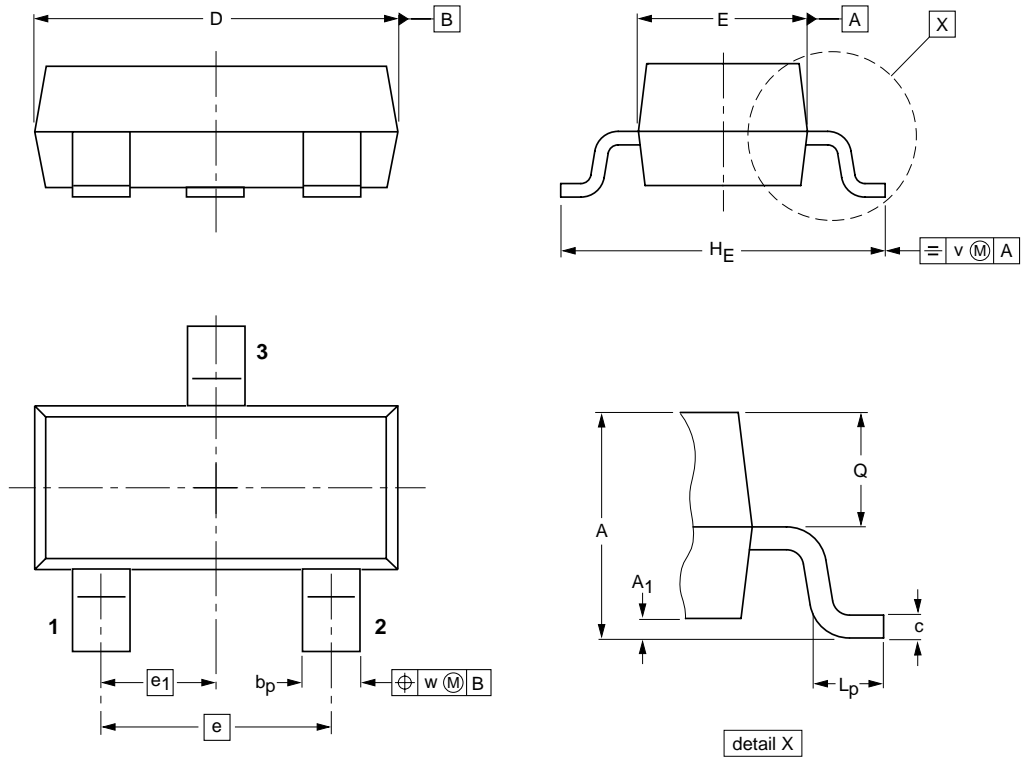
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PACKAGE OUTLINE

Plastic surface-mounted package; 3 leads

SOT23



DIMENSIONS (mm are the original dimensions)

| UNIT | A | A ₁ max. | b _p | c | D | E | e | e ₁ | H _E | L _p | Q | v | w |
|------|------------|---------------------|----------------|--------------|------------|------------|-----|----------------|----------------|----------------|--------------|-----|-----|
| mm | 1.1 0.9 | 0.1 | 0.48 0.38 | 0.15 0.09 | 3.0 2.8 | 1.4 1.2 | 1.9 | 0.95 | 2.5 2.1 | 0.45 0.15 | 0.55 0.45 | 0.2 | 0.1 |

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|-----------------|------------|----------|-------|--|---------------------|----------------------|
| | IEC | JEDEC | JEITA | | | |
| SOT23 | | TO-236AB | | | | 04-11-04 06-03-16 |

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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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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

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