

# DATA SHEET



Datasheet.Support

## **BCX17; BCX18** PNP general purpose transistors

Product data sheet  
Supersedes data of 1999 May 31

2004 Jan 16

# PNP general purpose transistors

# BCX17; BCX18

### FEATURES

- High current (max. 500 mA)
- Low voltage (max. 45 V).

### APPLICATIONS

- Saturated switching and driver applications e.g. for industrial service
- Thick and thin-film circuits.

### DESCRIPTION

PNP transistor in a SOT23 plastic package.  
NPN complement: BCX19.

### MARKING

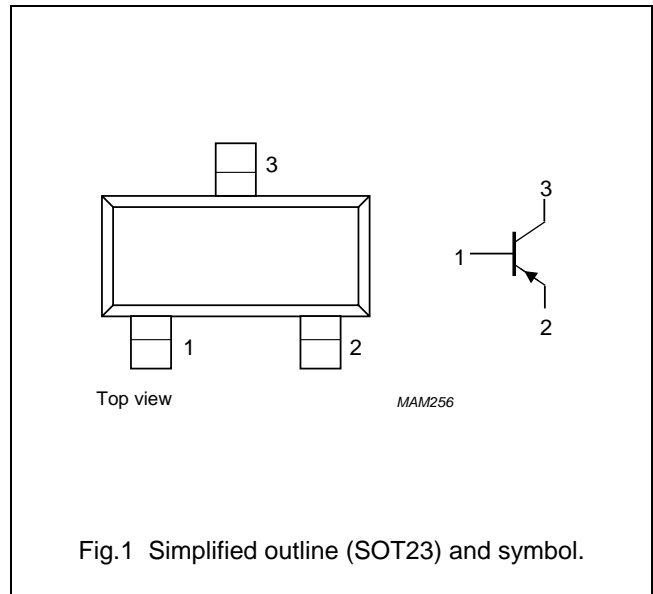
| TYPE NUMBER | MARKING CODE <sup>(1)</sup> |
|-------------|-----------------------------|
| BCX17       | T1*                         |
| BCX18       | T2*                         |

### Note

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

### PINNING

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



### ORDERING INFORMATION

| TYPE NUMBER | PACKAGE |  |         |
|-------------|---------|--|---------|
|             | NAME    | DESCRIPTION                              | VERSION |
| BCX17       | -       | plastic surface mounted package; 3 leads | SOT23   |
| BCX18       |         |  |         |

## PNP general purpose transistors

## BCX17; BCX18

**LIMITING VALUES**

In accordance with the Absolute Maximum Rating System (IEC 60134).

| SYMBOL           | PARAMETER                     | CONDITIONS                       | MIN. | MAX. | UNIT |
|------------------|-------------------------------|----------------------------------|------|------|------|
| V <sub>CBO</sub> | collector-base voltage        | open emitter                     |      |      |      |
|                  | BCX17                         |                                  | –    | –50  | V    |
|                  | BCX18                         |                                  | –    | –30  | V    |
| V <sub>CEO</sub> | collector-emitter voltage     | open base                        |      |      |      |
|                  | BCX17                         |                                  | –    | –45  | V    |
|                  | BCX18                         |                                  | –    | –25  | V    |
| V <sub>EBO</sub> | emitter-base voltage          | open collector                   | –    | –5   | V    |
| I <sub>C</sub>   | collector current (DC)        |                                  | –    | –500 | mA   |
| I <sub>CM</sub>  | peak collector current        |                                  | –    | –1   | A    |
| I <sub>BM</sub>  | peak base current             |                                  | –    | –200 | mA   |
| P <sub>tot</sub> | total power dissipation       | T <sub>amb</sub> ≤ 25 °C; note 1 | –    | 250  | mW   |
| T <sub>stg</sub> | storage temperature           |                                  | –65  | +150 | °C   |
| T <sub>j</sub>   | junction temperature          |                                  | –    | 150  | °C   |
| T <sub>amb</sub> | operating ambient temperature |                                  | –65  | +150 | °C   |

**Note**

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

**THERMAL CHARACTERISTICS**

| SYMBOL               | PARAMETER                                   | CONDITIONS | VALUE | UNIT |
|----------------------|---|------------|-------|------|
| R <sub>th(j-a)</sub> | thermal resistance from junction to ambient | note 1     | 500   | K/W  |

**Note**

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

## PNP general purpose transistors

## BCX17; BCX18

**CHARACTERISTICS**

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

| SYMBOL      | PARAMETER                            | CONDITIONS  | MIN. | TYP. | MAX. | UNIT          |
|-------------|--------------------------------------|---|------|------|------|---------------|
| $I_{CBO}$   | collector cut-off current            | $I_E = 0; V_{CB} = -20\text{ V}$                                | –    | –    | –100 | nA            |
|             |                                      | $I_E = 0; V_{CB} = -20\text{ V}; T_j = 150\text{ °C}$           | –    | –    | –5   | $\mu\text{A}$ |
| $I_{EBO}$   | emitter cut-off current              | $I_C = 0; V_{EB} = -5\text{ V}$                                 | –    | –    | –100 | nA            |
| $h_{FE}$    | DC current gain                      | $I_C = -100\text{ mA}; V_{CE} = -1\text{ V}$                    | 100  | –    | 600  |               |
|             |                                      | $I_C = -300\text{ mA}; V_{CE} = -1\text{ V}$                    | 70   | –    | –    |               |
|             |                                      | $I_C = -500\text{ mA}; V_{CE} = -1\text{ V}$                    | 40   | –    | –    |               |
| $V_{CEsat}$ | collector-emitter saturation voltage | $I_C = -500\text{ mA}; I_B = -50\text{ mA}$                     | –    | –    | –620 | mV            |
| $V_{BE}$    | base-emitter voltage                 | $I_C = -500\text{ mA}; V_{CE} = -1\text{ V}$ ; note 1           | –    | –    | –1.2 | V             |
| $C_c$       | collector capacitance                | $I_E = I_e = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$        | –    | 9    | –    | pF            |
| $f_T$       | transition frequency                 | $I_C = -10\text{ mA}; V_{CE} = -5\text{ V}; f = 100\text{ MHz}$ | 80   | –    | –    | MHz           |

**Note**

- $V_{BE}$  decreases by approximately  $-2\text{ mV/°C}$  with increasing temperature.

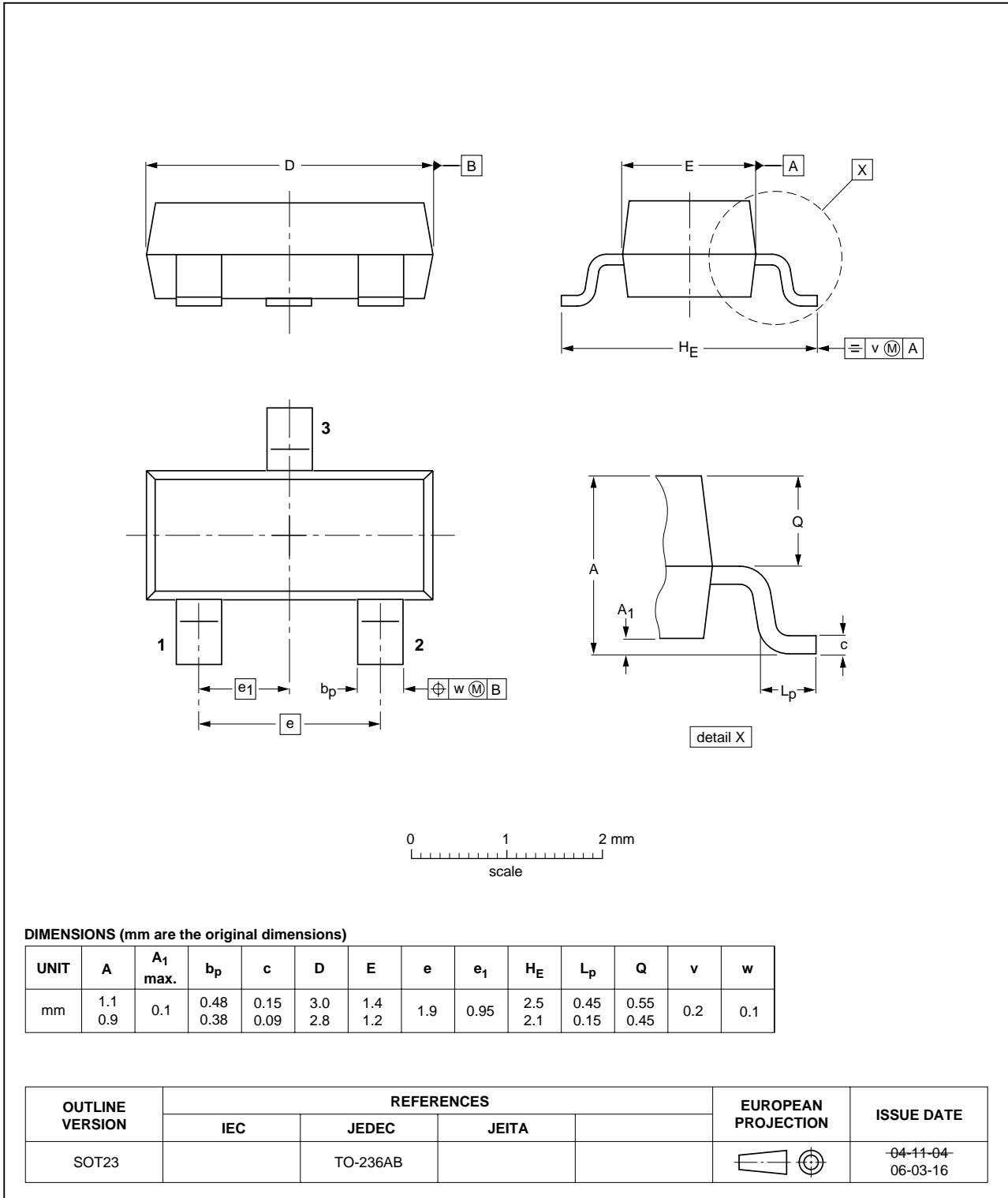
PNP general purpose transistors

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PACKAGE OUTLINE

Plastic surface-mounted package; 3 leads

SOT23



## PNP general purpose transistors

## BCX17; BCX18

## DATA SHEET STATUS

| DOCUMENT STATUS <sup>(1)</sup> | PRODUCT STATUS <sup>(2)</sup> | 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**

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

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