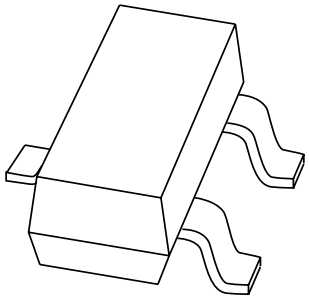
# DATA SHEET



# BAS17
## Low-voltage stabistor

Product specification
Supersedes data of 1999 May 31

2003 Mar 25

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# Low-voltage stabistor BAS17

## FEATURES

- Low-voltage stabilization
- Forward voltage range: 580 to 960 mV
- Total power dissipation: max. 250 mW.

## APPLICATIONS

- Low-voltage stabilization e.g.
  - Bias stabilizer in class-B output stages
  - Clipping
  - Clamping
  - Meter protection.

## DESCRIPTION

Low-voltage stabilization diode in a small SOT23 plastic package.

## MARKING

| TYPE NUMBER | MARKING CODE(1) |
|---|---|
| BAS17 | ∗A9 |

**Note**

1. ∗ = p : Made in Hong Kong.
   ∗ = t : Made in Malaysia.
   ∗ = W : Made in China.

## PINNING

| PIN | DESCRIPTION |
|---|---|
| 1 | anode |
| 2 | not connected |
| 3 | cathode |

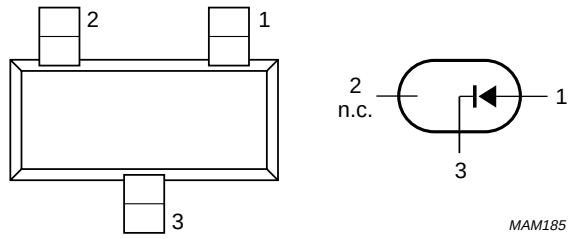



Fig.1 Simplified outline (SOT23), pin configuration and symbol.

## LIMITING VALUES

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|---|---|---|---|---|---|
| $V_R$ | continuous reverse voltage | | – | 5 | V |
| $I_F$ | continuous forward current | | – | 200 | mA |
| $P_{tot}$ | total power dissipation | $T_{amb}$ = 25 °C | – | 250 | mW |
| $T_{stg}$ | storage temperature | | –65 | +150 | °C |
| $T_j$ | junction temperature | | – | 150 | °C |

## ELECTRICAL CHARACTERISTICS

$T_j$ = 25 °C unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| $V_F$ | forward voltage | see Fig.2 | | | | |
| | | $I_F$ = 0.1 mA | 580 | – | 660 | mV |
| | | $I_F$ = 1 mA | 665 | – | 745 | mV |
| | | $I_F$ = 5 mA | 725 | – | 805 | mV |
| | | $I_F$ = 10 mA | 750 | – | 830 | mV |
| | | $I_F$ = 100 mA | 870 | – | 960 | mV |
| $I_R$ | reverse current | $V_R$ = 4 V | – | – | 5 | μA |
| $r_{dif}$ | differential resistance | $I_F$ = 0.5 mA | – | 120 | – | Ω |
| | | $I_F$ = 2 mA | – | 80 | – | Ω |
| $S_F$ | temperature coefficient | $I_F$ = 1 mA | – | –1.8 | – | mV/K |
| $C_d$ | diode capacitance | $V_R$ = 0 V; f = 1 MHz | – | – | 140 | pF |

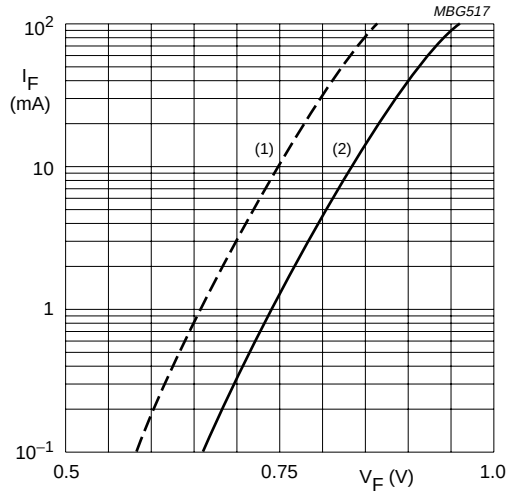
## THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---|---|---|---|---|
| $R_{th\ j\text{-}tp}$ | thermal resistance from junction to tie-point | | 330 | K/W |
| $R_{th\ j\text{-}a}$ | thermal resistance from junction to ambient | note 1 | 500 | K/W |

**Note**

1. Device mounted on a FR4 printed-circuit board.

## GRAPHICAL DATA




$T_j$ = 25 °C.

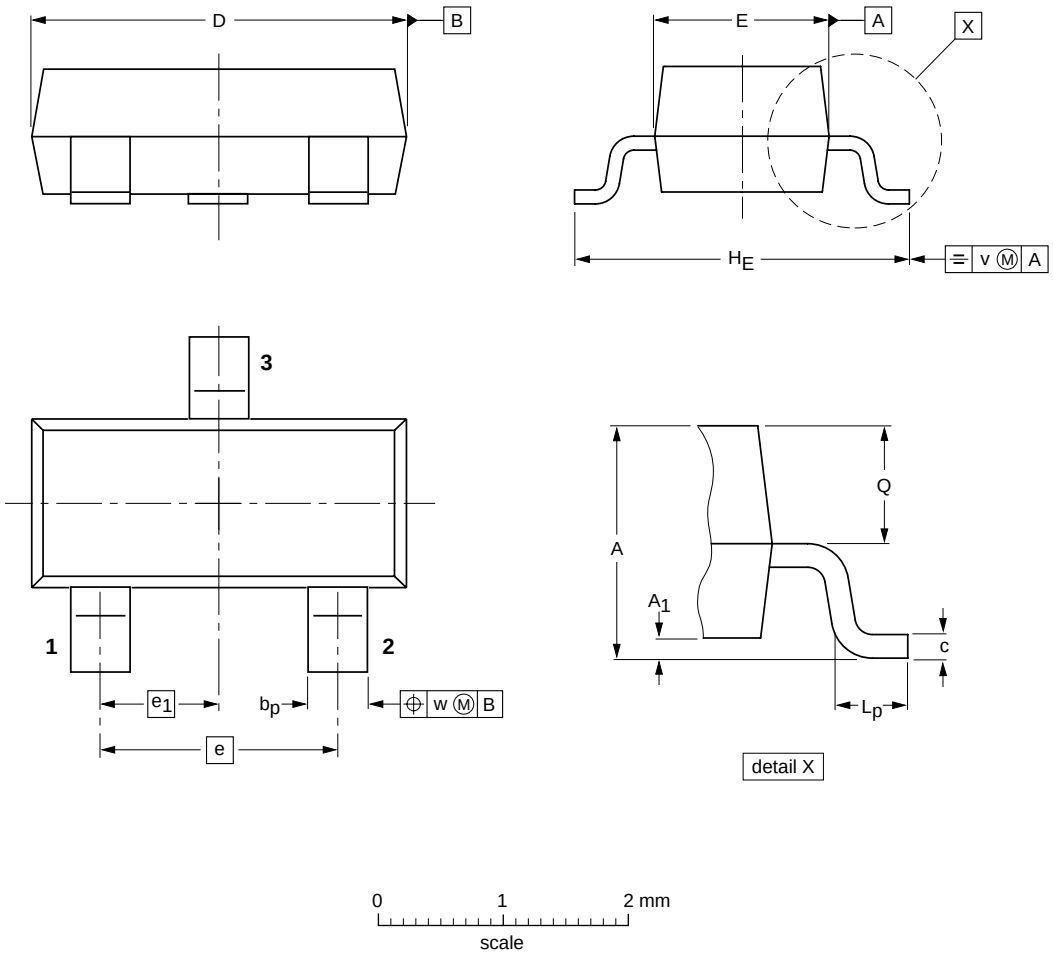
(1) Minimum values.

(2) Maximum values.

Fig.2 Forward current as a function of forward voltage.

## 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<br>0.9 | 0.1 | 0.48<br>0.38 | 0.15<br>0.09 | 3.0<br>2.8 | 1.4<br>1.2 | 1.9 | 0.95 | 2.5<br>2.1 | 0.45<br>0.15 | 0.55<br>0.45 | 0.2 | 0.1 |

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|---|---|---|---|---|---|---|
| | IEC | JEDEC | EIAJ | | | |
| SOT23 | | TO-236AB | | | | ~~97-02-28~~<br>99-09-13 |

**DATA SHEET STATUS**

| LEVEL | DATA SHEET STATUS(1) | PRODUCT STATUS(2)(3) | DEFINITION |
|---|---|---|---|
| I | Objective data | Development | This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice. |
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3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

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**Short-form specification** — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

**Limiting values definition** — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.

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