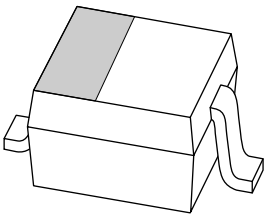
# DATA SHEET



# BB132
## VHF variable capacitance diode

Product specification
Supersedes data of 1998 Sep 15

2004 Feb 10

Philips
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# VHF variable capacitance diode BB132

## FEATURES

- High linearity
- Excellent matching to 1% DMA
- Very small plastic SMD package
- C28: 2.5 pF; ratio: 26.

## APPLICATIONS

- Electronic tuning in VHF television tuners, band A up to 160 MHz
- VCO.

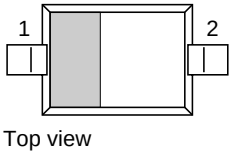
## DESCRIPTION

The BB132 is a variable capacitance diode fabricated in planar technology, and encapsulated in the SOD323 (SC-76) very small plastic SMD package.

The excellent matching performance is achieved by gliding matching and a direct matching assembly procedure.

## PINNING

| PIN | DESCRIPTION |
|---|---|
| 1 | cathode |
| 2 | anode |




Top view

sym008

**Marking code:** P2.
The marking bar indicates the cathode.

Fig.1 Simplified outline (SOD323; SC-76) and symbol.

## ORDERING INFORMATION

| TYPE NUMBER | PACKAGE | | |
|---|---|---|---|
| | NAME | DESCRIPTION | VERSION |
| BB132 | – | plastic surface mounted package; 2 leads | SOD323 |

## LIMITING VALUES

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

| SYMBOL | PARAMETER | MIN. | MAX. | UNIT |
|---|---|---|---|---|
| $V_R$ | continuous reverse voltage | – | 30 | V |
| $I_F$ | continuous forward current | – | 20 | mA |
| $T_{stg}$ | storage temperature | –55 | +150 | °C |
| $T_j$ | operating junction temperature | –55 | +125 | °C |

## CHARACTERISTICS

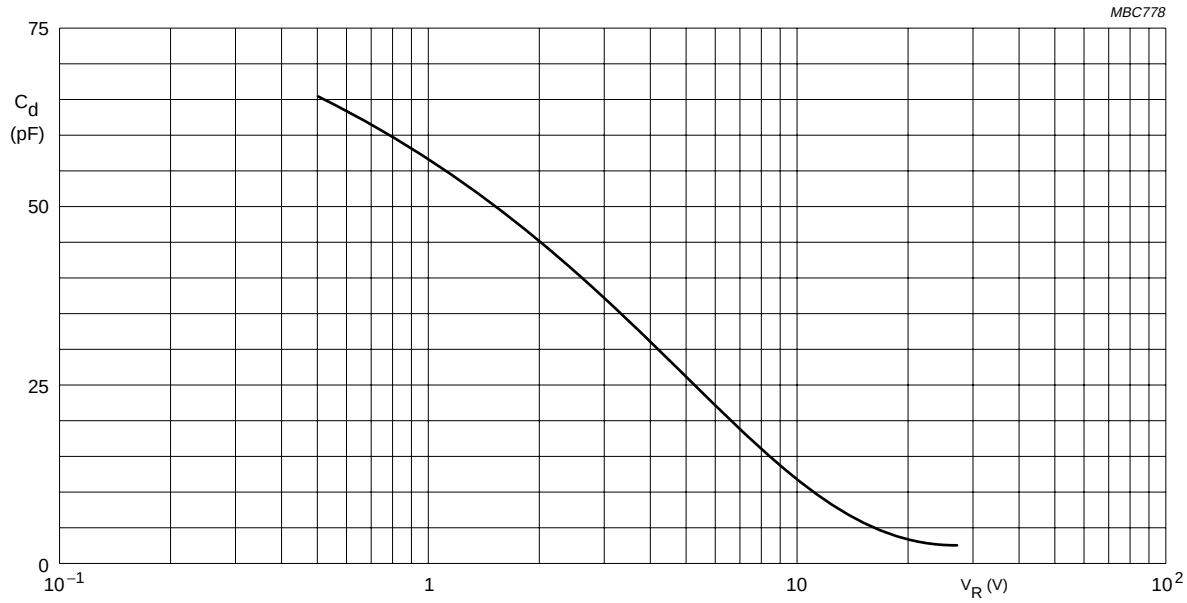
$T_j$ = 25 °C unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|---|---|---|---|---|---|
| $I_R$ | reverse current | $V_R$ = 30 V; see Fig.3 | – | 10 | nA |
| | | $V_R$ = 30 V; $T_j$ = 85 °C; see Fig.3 | – | 200 | nA |
| $r_s$ | diode series resistance | f = 100 MHz; note 1 | – | 2 | Ω |
| $C_d$ | diode capacitance | $V_R$ = 0.5 V; f = 1 MHz; see Figs 2 and 4 | 60 | 75 | pF |
| | | $V_R$ = 28 V; f = 1 MHz; see Figs 2 and 4 | 2.3 | 2.75 | pF |
| $\frac{C_{d(0.5V)}}{C_{d(28V)}}$ | capacitance ratio | f = 1 MHz | 24 | 30 | |
| $\frac{\Delta C_d}{C_d}$ | capacitance matching | $V_R$ = 0.5 to 28 V; in a sequence of 4 diodes (gliding) | – | 1 | % |
| | | $V_R$ = 0.5 to 28 V; in a sequence of 15 diodes (gliding) | – | 2 | % |

**Note**

1. $V_R$ is the value at which $C_d$ = 30 pF.

## GRAPHICAL DATA




f = 1 MHz; $T_j$ = 25 °C.

Fig.2 Diode capacitance as a function of reverse voltage; typical values.

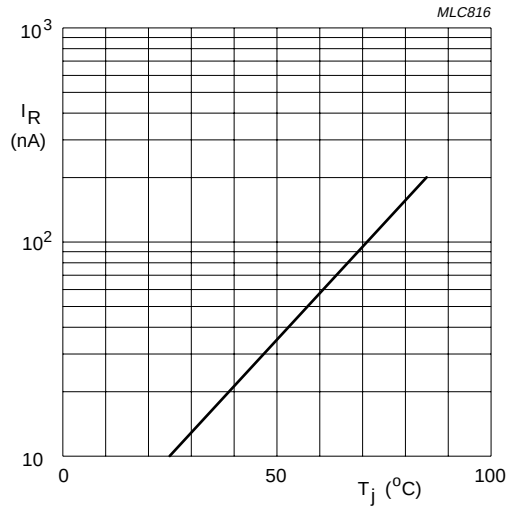
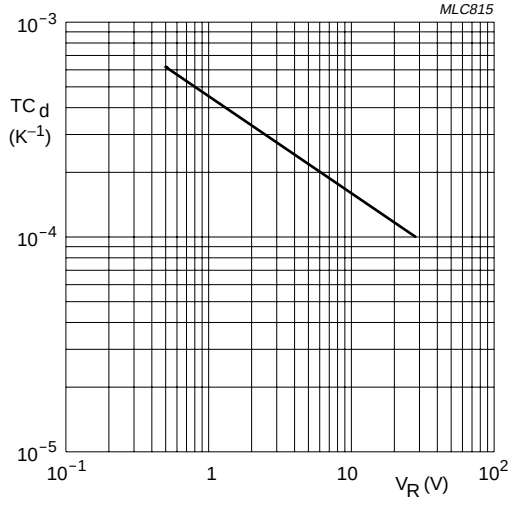



Fig.3 Reverse current as a function of junction temperature; maximum values.

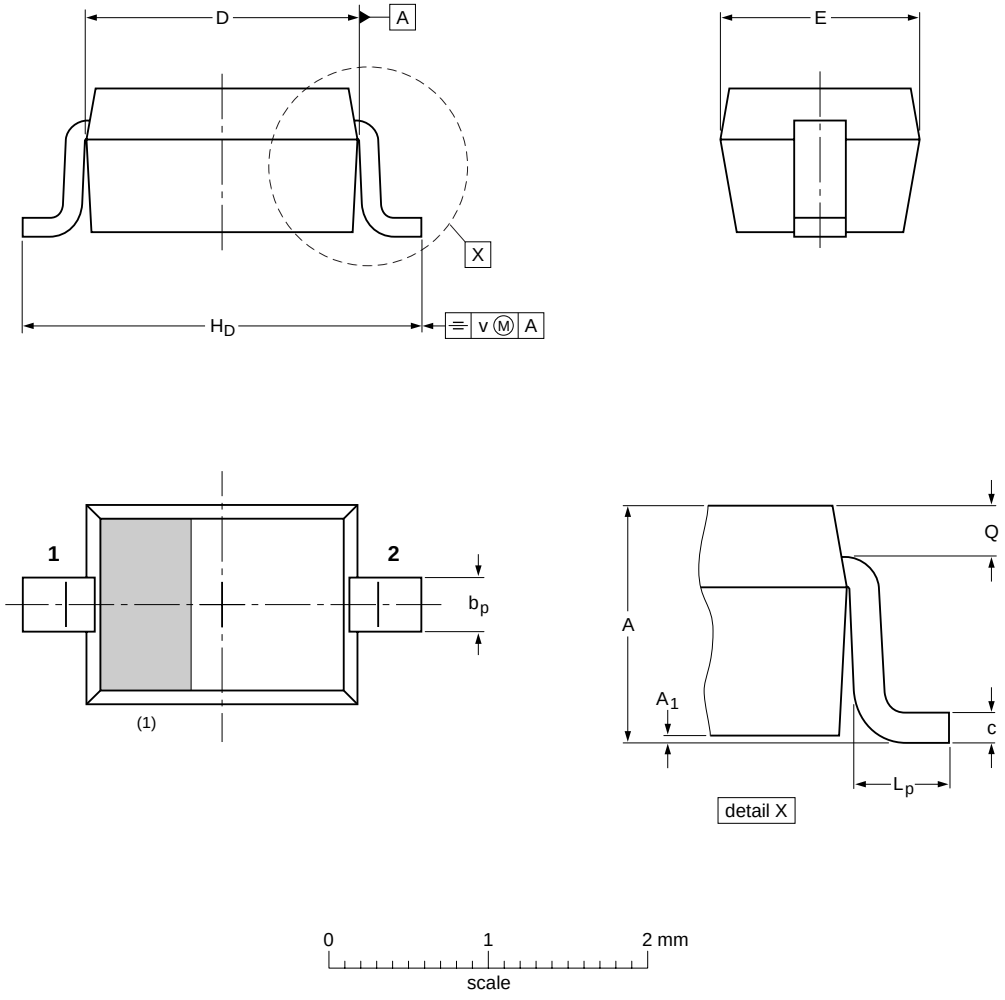



$T_j$ = 0 to 85 °C.

Fig.4 Temperature coefficient of diode capacitance as a function of reverse voltage; typical values.

## PACKAGE OUTLINE

**Plastic surface mounted package; 2 leads** **SOD323**




**DIMENSIONS (mm are the original dimensions)**

| UNIT | A | $A_1$ max | $b_p$ | c | D | E | $H_D$ | $L_p$ | Q | v |
|---|---|---|---|---|---|---|---|---|---|---|
| mm | 1.1<br>0.8 | 0.05 | 0.40<br>0.25 | 0.25<br>0.10 | 1.8<br>1.6 | 1.35<br>1.15 | 2.7<br>2.3 | 0.45<br>0.15 | 0.25<br>0.15 | 0.2 |

**Note**

1. The marking bar indicates the cathode

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|---|---|---|---|---|---|---|
| | IEC | JEDEC | JEITA | | | |
| SOD323 | | | SC-76 | | | ~~99-09-13~~<br>03-12-17 |

**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. |
| II | Preliminary data | Qualification | This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product. |
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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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**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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Printed in The Netherlands R77/04/pp7 Date of release: 2004 Feb 10 Document order number: 9397 750 12641

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