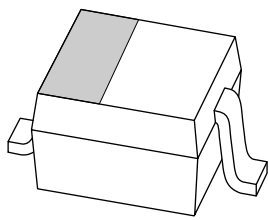


# DATA SHEET



**BB152**

VHF variable capacitance diode

Product specification  
Supersedes data of 1998 Sep 09

2004 Feb 25

# VHF variable capacitance diode

# BB152

## FEATURES

- High linearity
- Excellent matching to 2% DMA
- Very small plastic SMD package
- C28: 2.7 pF; ratio: 22
- Low series resistance.

## APPLICATIONS

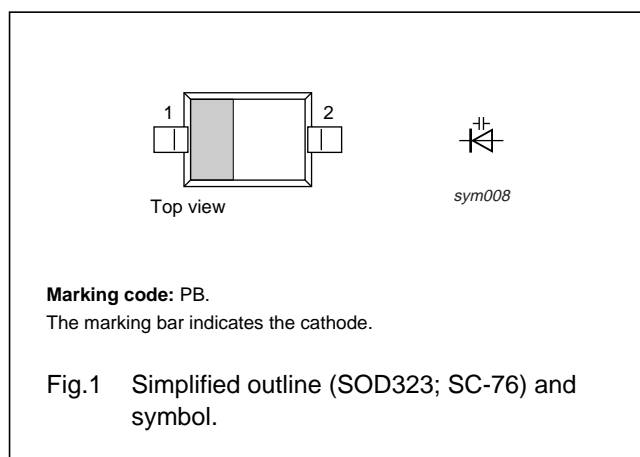
- Electronic tuning in VHF television tuners, band A up to 160 MHz
- Voltage controlled oscillators (VCO).

## DESCRIPTION

The BB152 is a planar technology variable capacitance diode, in a SOD323 (SC-76) package. The excellent matching performance is achieved by gliding matching and a direct matching assembly procedure.

## PINNING

PIN	DESCRIPTION
1	cathode
2	anode



## ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BB152	–	plastic surface mounted package; 2 leads	SOD323

## LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_R$	continuous reverse voltage		–	32	V
$V_{RM}$	peak reverse voltage	in series with a 10 kΩ resistor	–	35	V
$I_F$	continuous forward current		–	20	mA
$T_{stg}$	storage temperature		–55	+150	°C
$T_j$	operating junction temperature		–55	+125	°C

## VHF variable capacitance diode

BB152

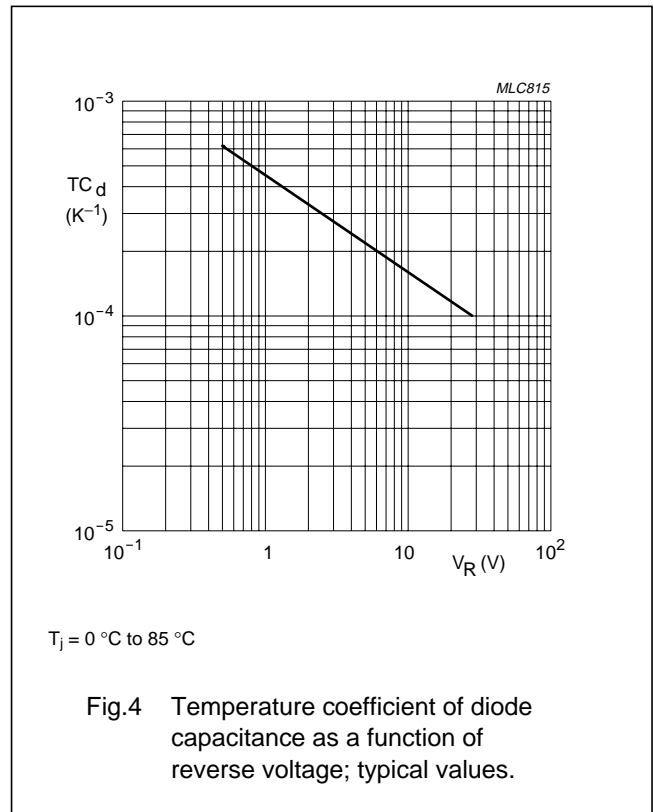
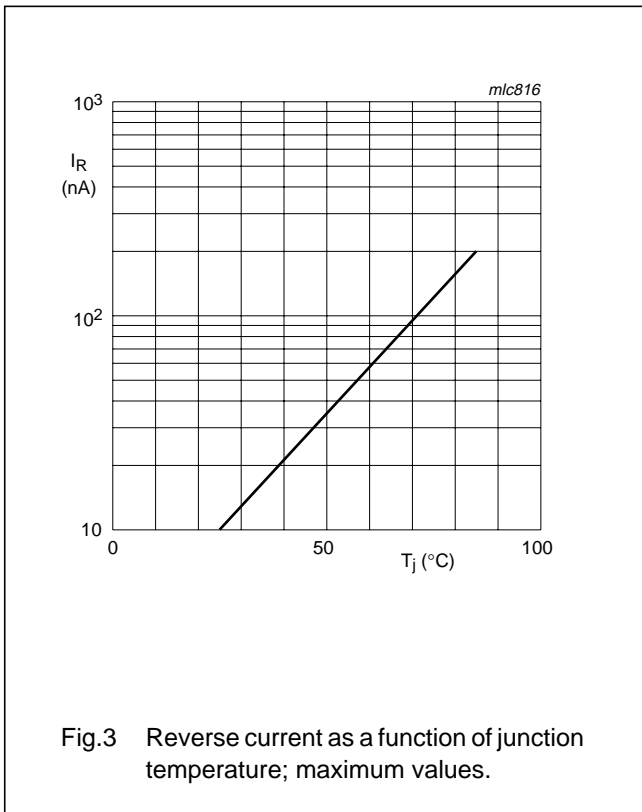
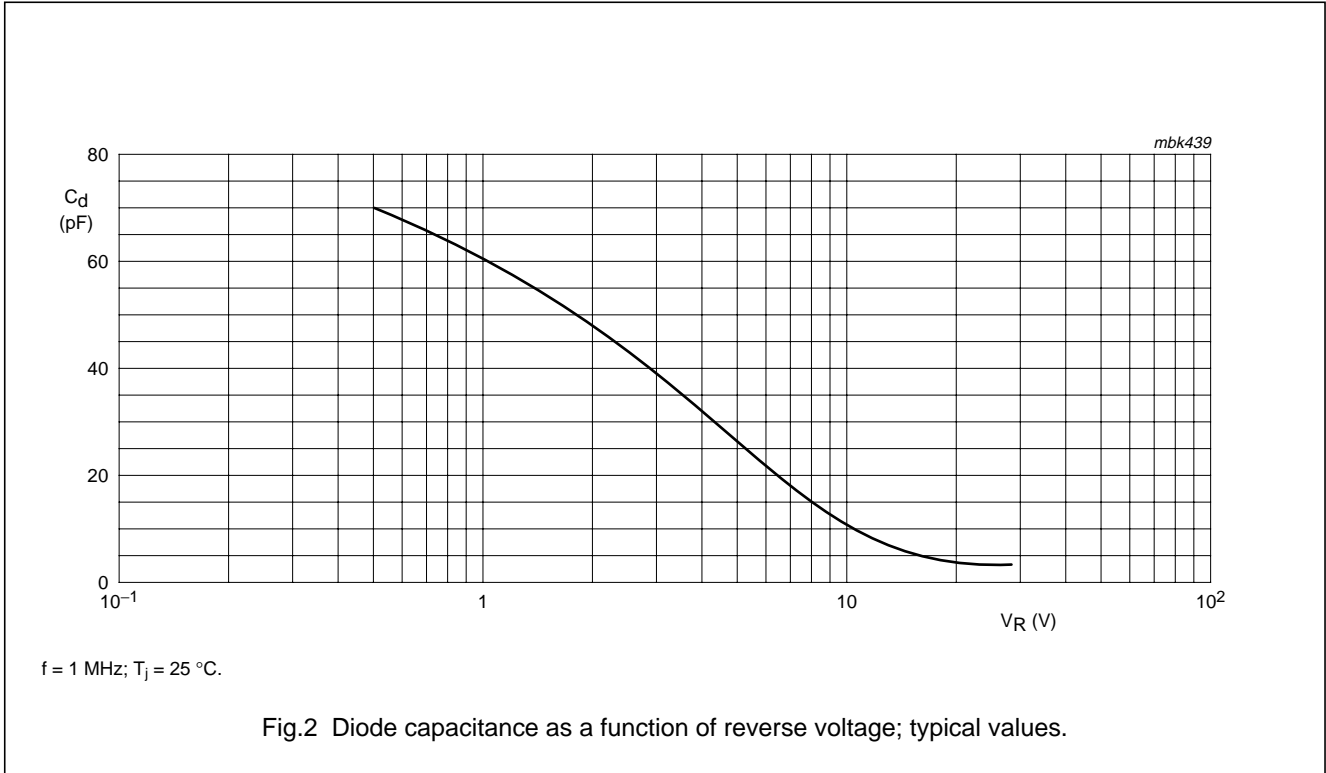
**ELECTRICAL CHARACTERISTICS** $T_j = 25\text{ °C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$I_R$	reverse current	$V_R = 30\text{ V}$ ; see Fig.3	–	–	10	nA
		$V_R = 30\text{ V}$ ; $T_j = 85\text{ °C}$ ; see Fig.3	–	–	200	nA
$r_s$	diode series resistance	$f = 100\text{ MHz}$ ; $C_d = 30\text{ pF}$	–	1	1.2	$\Omega$
$C_d$	diode capacitance	$V_R = 1\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 2 and 4	52	–	62	pF
		$V_R = 28\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 2 and 4	2.48	–	2.89	pF
$\frac{C_{d(1V)}}{C_{d(2V)}}$	capacitance ratio	$f = 1\text{ MHz}$	–	1.31	–	
$\frac{C_{d(1V)}}{C_{d(28V)}}$	capacitance ratio	$f = 1\text{ MHz}$	20.6	–	–	
$\frac{C_{d(25V)}}{C_{d(28V)}}$	capacitance ratio	$f = 1\text{ MHz}$	–	1.05	–	
$\frac{\Delta C_d}{C_d}$	capacitance matching	$V_R = 1\text{ to }28\text{ V}$ ; in a sequence of 15 diodes (gliding)	–	–	2	%

VHF variable capacitance diode

BB152

GRAPHICAL DATA



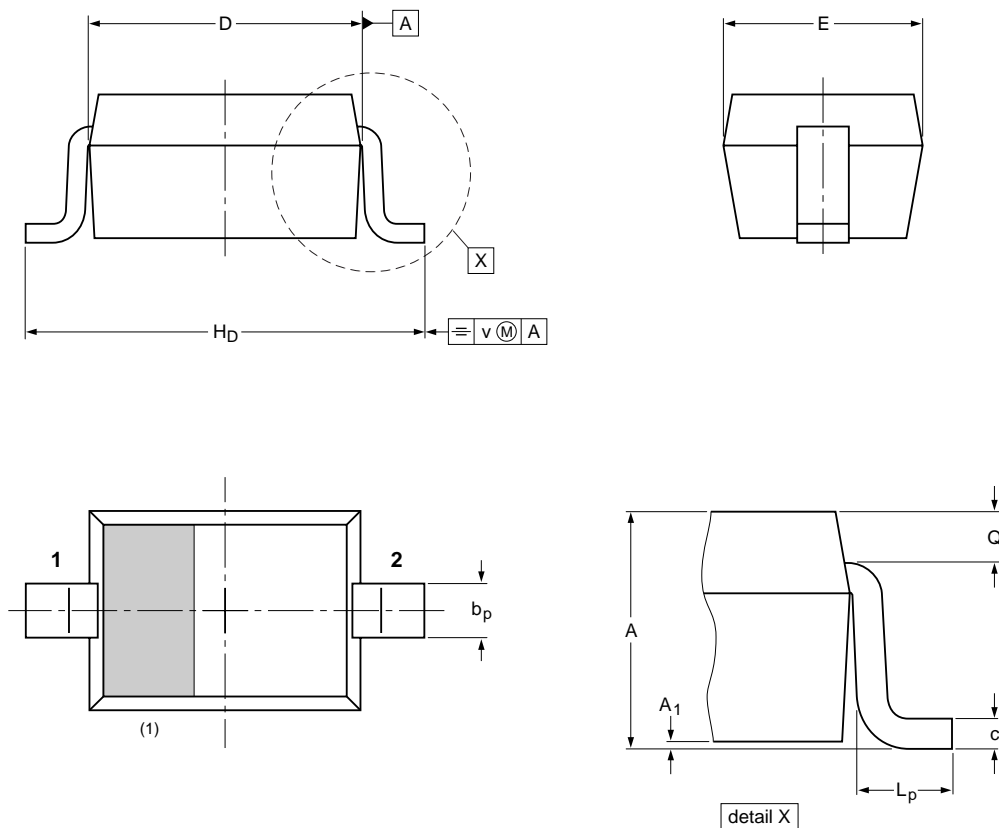
VHF variable capacitance diode

BB152

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max	b <sub>p</sub>	c	D	E	H <sub>D</sub>	L <sub>p</sub>	Q	v
mm	1.1 0.8	0.05	0.40 0.25	0.25 0.10	1.8 1.6	1.35 1.15	2.7 2.3	0.45 0.15	0.25 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- 03-12-17

## VHF variable capacitance diode

BB152

## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	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.
III	Product data	Production	This data sheet contains data from the product specification. Philips Semiconductors reserves the right to make changes at any time in order to improve the design, manufacturing and supply. Relevant changes will be communicated via a Customer Product/Process Change Notification (CPCN).

## Notes

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2. The product status of the device(s) described in this data sheet may have changed since this data sheet was published. The latest information is available on the Internet at URL <http://www.semiconductors.philips.com>.
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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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