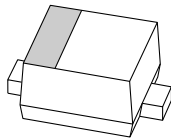


# DATA SHEET



## **BB145B**

Low-voltage variable capacitance  
diode

Product specification  
Supersedes data of 2002 Nov 18

2004 Mar 29



# Low-voltage variable capacitance diode

**BB145B**

## FEATURES

- Ultra small plastic SMD package
- C4: 2.75 pF; ratio: 2.4
- Low series resistance.

## APPLICATIONS

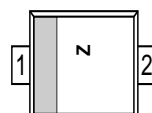
- Voltage controlled oscillators (VCO).

## DESCRIPTION

The BB145B is a planar technology variable capacitance diode in a SOD523 (SC-79) package.

## PINNING

PIN	DESCRIPTION
1	cathode
2	anode



**Marking code:** Z.  
Orientation of marking code as shown.  
Cathode side indicated by a bar.

Fig.1 Simplified outline (SOD523; SC-79) and symbol.

## ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BB145B	–	plastic surface mounted package; 2 leads	SOD523

## LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_R$	continuous reverse voltage		–	6	V
$V_{RM}$	peak reverse voltage	in series with a 10 k $\Omega$ resistor	–	8	V
$I_F$	continuous forward current		–	20	mA
$T_{stg}$	storage temperature		–55	+150	°C
$T_j$	operating junction temperature		–55	+150	°C

## ELECTRICAL CHARACTERISTICS

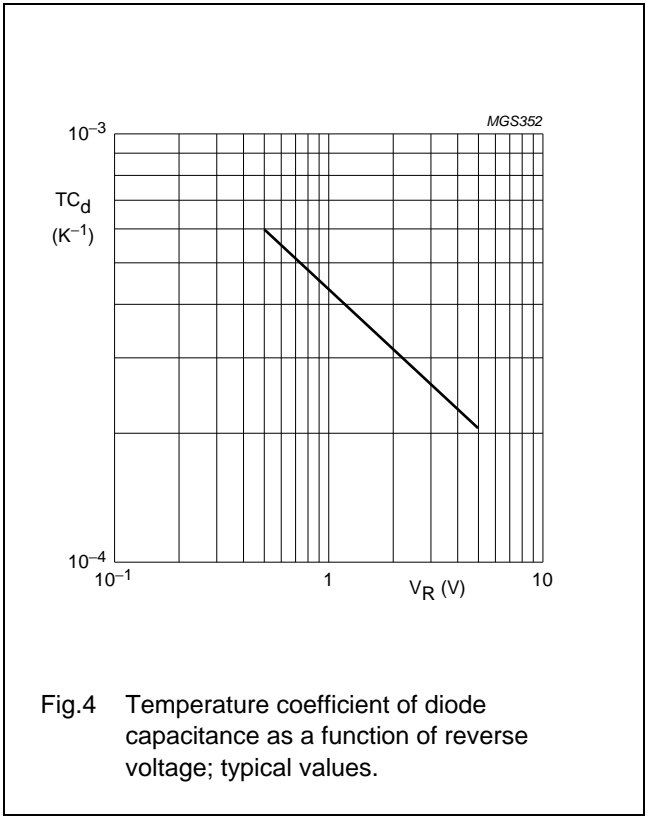
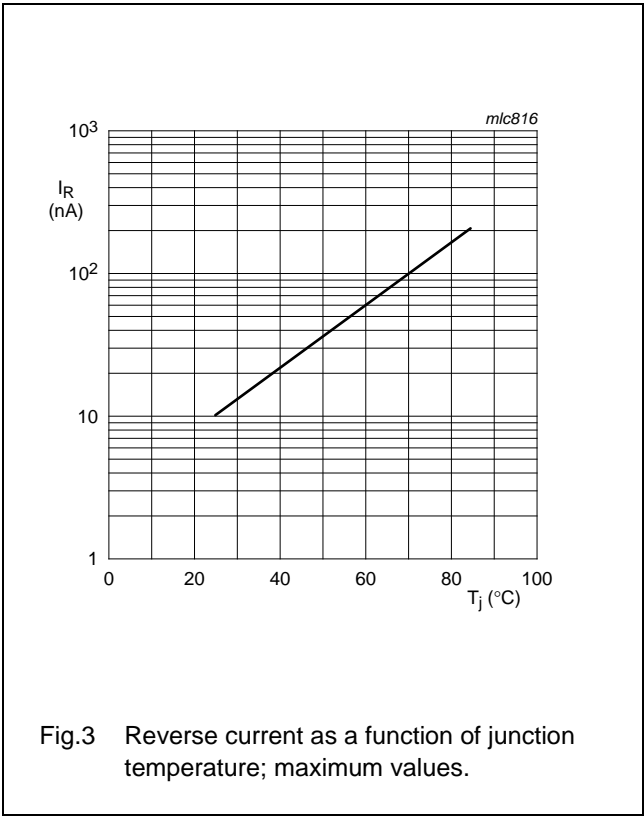
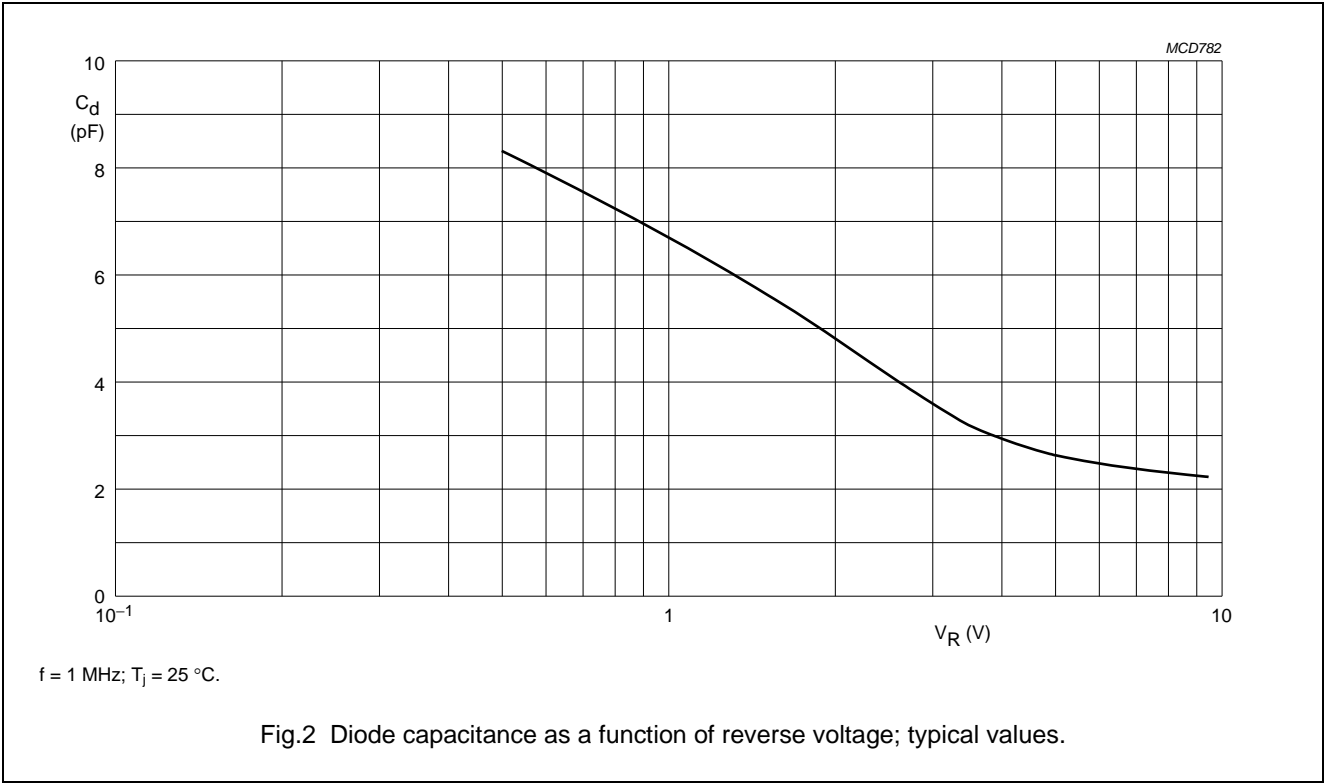
$T_j = 25\text{ °C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_R$	reverse current	$V_R = 6\text{ V}$ ; see Fig.3	–	10	nA
		$V_R = 6\text{ V}$ ; $T_j = 85\text{ °C}$ ; see Fig.3	–	200	nA
$r_s$	diode series resistance	$f = 470\text{ MHz}$ ; $V_R = 1\text{ V}$	–	0.6	$\Omega$
$C_d$	diode capacitance	$V_R = 1\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 2 and 4	6.4	7.2	pF
		$V_R = 4\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 2 and 4	2.55	2.95	pF
$\frac{C_{d(1V)}}{C_{d(4V)}}$	capacitance ratio	$f = 1\text{ MHz}$	2.2	–	

Low-voltage variable capacitance diode

BB145B

GRAPHICAL DATA



Low-voltage variable capacitance diode

BB145B

PACKAGE OUTLINE

Plastic surface-mounted package; 2 leads

SOD523

0 0.5 1 mm  
scale

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

UNIT	A	b <sub>p</sub>	c	D	E	H <sub>E</sub>	v
mm	0.65 0.58	0.34 0.26	0.17 0.11	1.25 1.15	0.85 0.75	1.65 1.55	0.1

**Note**  
1. The marking bar indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOD523			SC-79			<del>02-12-13</del> 06-03-16

## Low-voltage variable capacitance diode

BB145B

## 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.

## Notes

1. Please consult the most recently issued document before initiating or completing a design.
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## Low-voltage variable capacitance diode

## BB145B

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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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Printed in The Netherlands

R77/03/pp7

Date of release: 2004 Mar 29

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