



# BB202

Low-voltage variable capacitance diode

Rev. 02 — 3 January 2008

Product data sheet

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NXP Semiconductors

# Low-voltage variable capacitance diode

# BB202

### FEATURES

- Very steep C/V curve
- C0.2: 30.5 pF; C2.3: 9.5 pF
- C0.2 to C2.3 ratio: min. 2.5
- Very low series resistance
- Ultra small SMD plastic package.

### APPLICATIONS

- Electronic tuning in FM radio
- Voltage Controlled Oscillators (VCO).

### DESCRIPTION

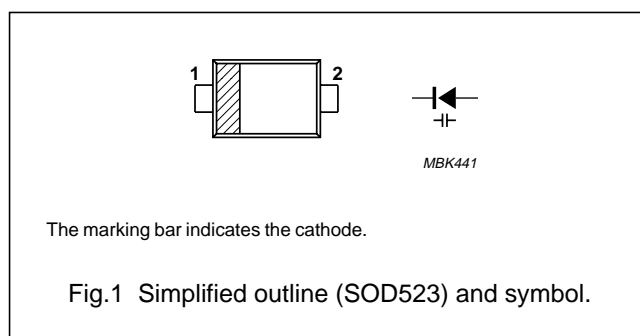
The BB202 is a variable capacitance diode, fabricated in planar technology, and encapsulated in the SOD523 ultra small SMD plastic package.

### MARKING

TYPE NUMBER	MARKING CODE
BB202	L2

### PINNING

PIN	DESCRIPTION
1	cathode
2	anode



### LIMITING VALUES

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

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
$V_R$	continuous reverse voltage	–	6	V
$I_F$	continuous forward current	–	10	mA
$T_{stg}$	storage temperature	–55	+85	°C
$T_j$	operating junction temperature	–55	+85	°C

### ELECTRICAL CHARACTERISTICS

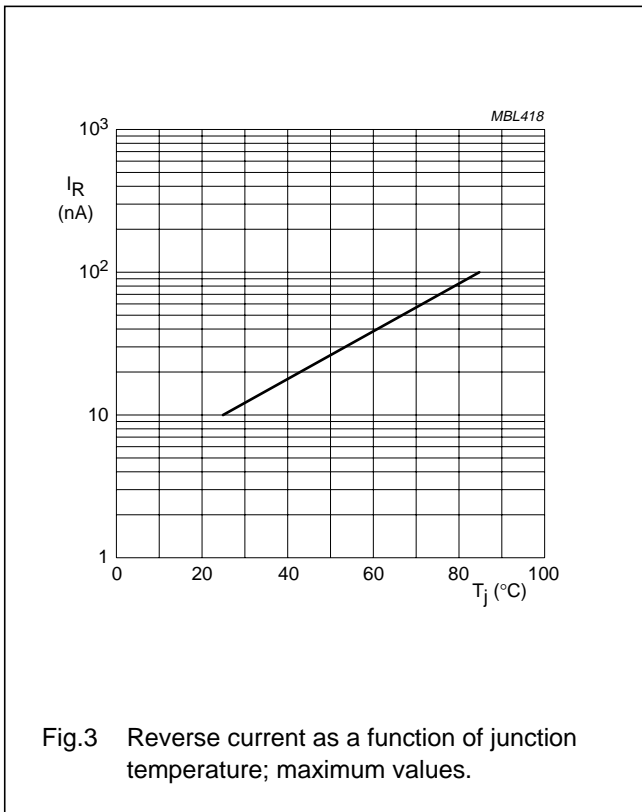
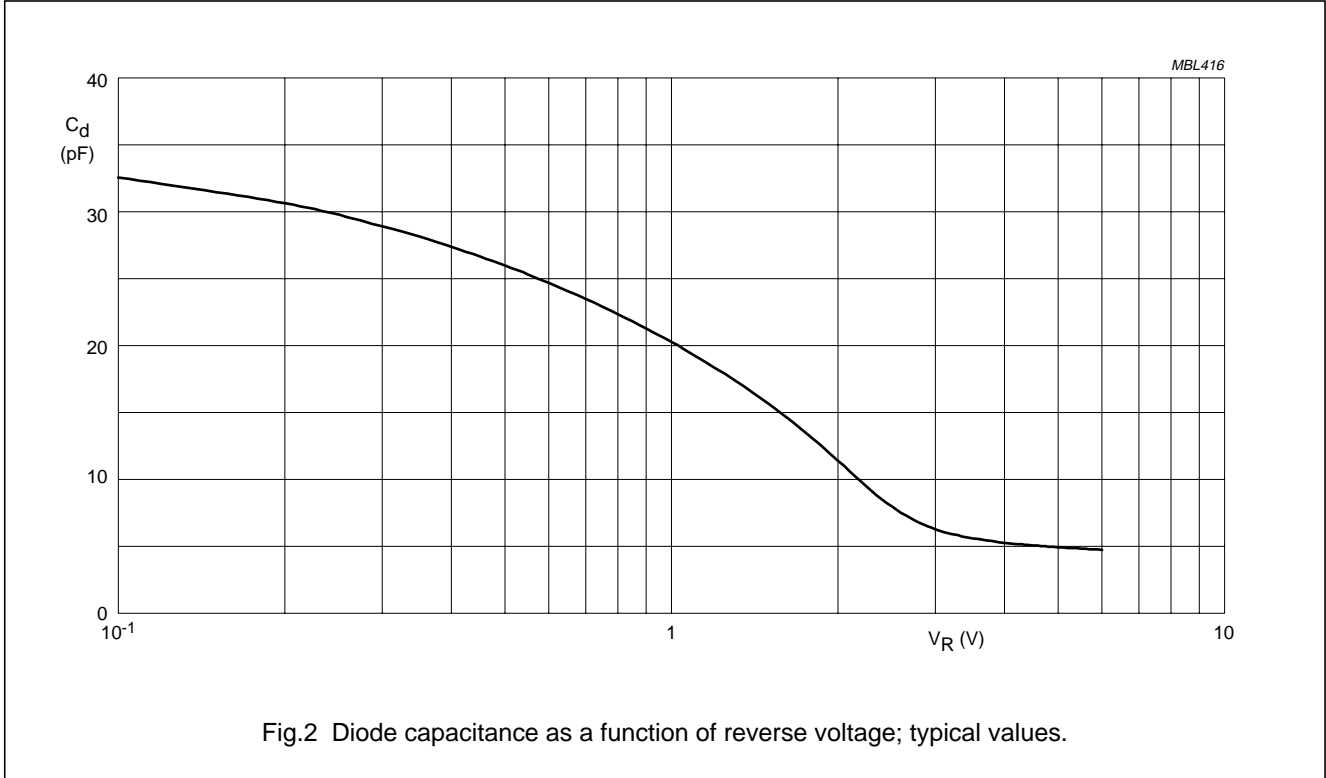
$T_j = 25\text{ °C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	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	–	–	100	nA
$r_s$	diode series resistance	$f = 100\text{ MHz}$ ; $C = 30\text{ pF}$	–	0.35	0.6	$\Omega$
$C_d$	diode capacitance	$V_R = 0.2$ ; $f = 1\text{ MHz}$ ; see Fig.2 and Fig.4	28.2	–	33.5	pF
		$V_R = 2.3$ ; $f = 1\text{ MHz}$ ; see Fig.2 and Fig.4	7.2	–	11.2	pF
$\frac{C_{d(0.2V)}}{C_{d(2.3V)}}$	capacitance ratio	$f = 1\text{ MHz}$	2.5	–	–	

Low-voltage variable capacitance diode

BB202

GRAPHICAL DATA



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BB202

PACKAGE OUTLINE

Plastic surface-mounted package; 2 leads

SOD523

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

UNIT	A	bp	c	D	E	HE	v
mm	0.65	0.34	0.17	1.25	0.85	1.65	0.1
	0.58	0.26	0.11	1.15	0.75	1.55	

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

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

## Legal information

### Data sheet status

Document status <sup>[1][2]</sup>	Product status <sup>[3]</sup>	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

[3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

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## Revision history

### Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BB202_N_2	20080103	Product data sheet	-	BB202_1
Modifications:	• Package outline drawing on page 4 changed			
BB202_1 (9397 750 09195)	20020218	Product specification	-	-

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