



# 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

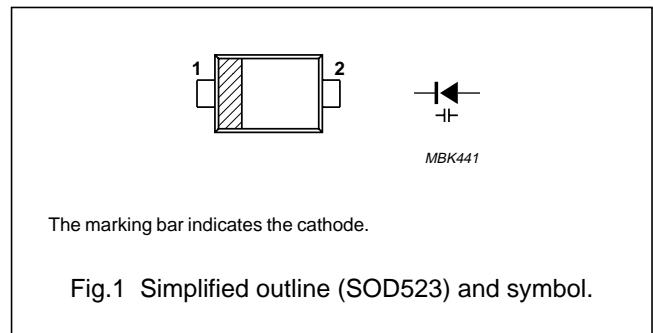
The BB202 is a variable capacitance diode, fabricated in planar technology, and encapsulated in the SOD523 ultra small SMD plastic package.

### 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

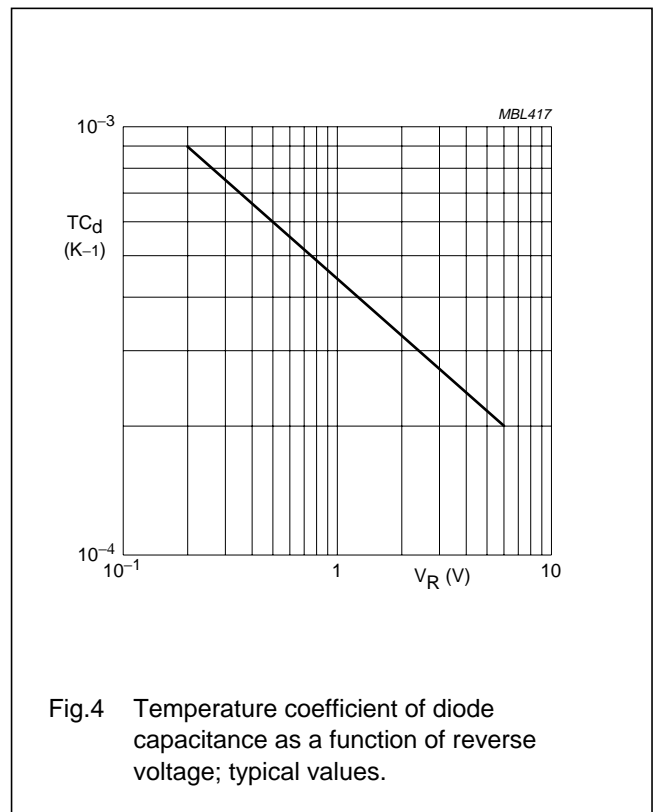
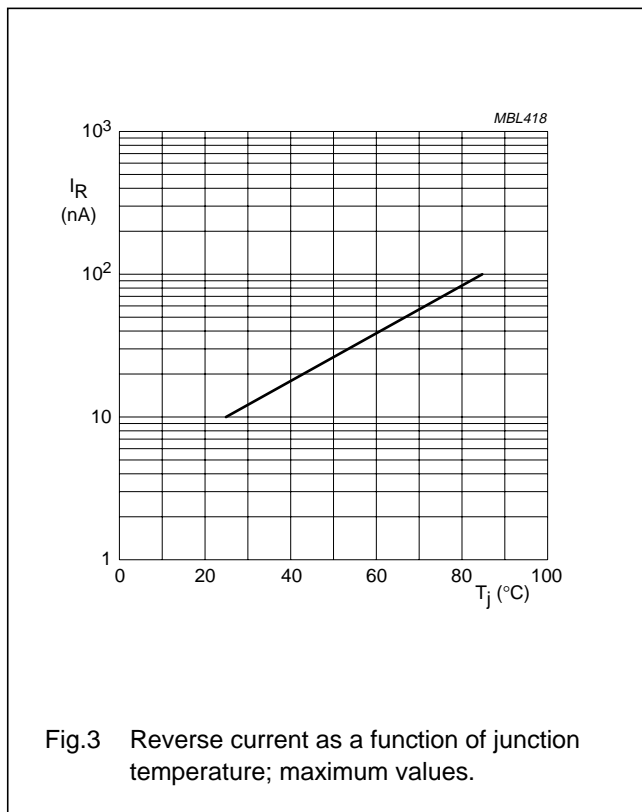
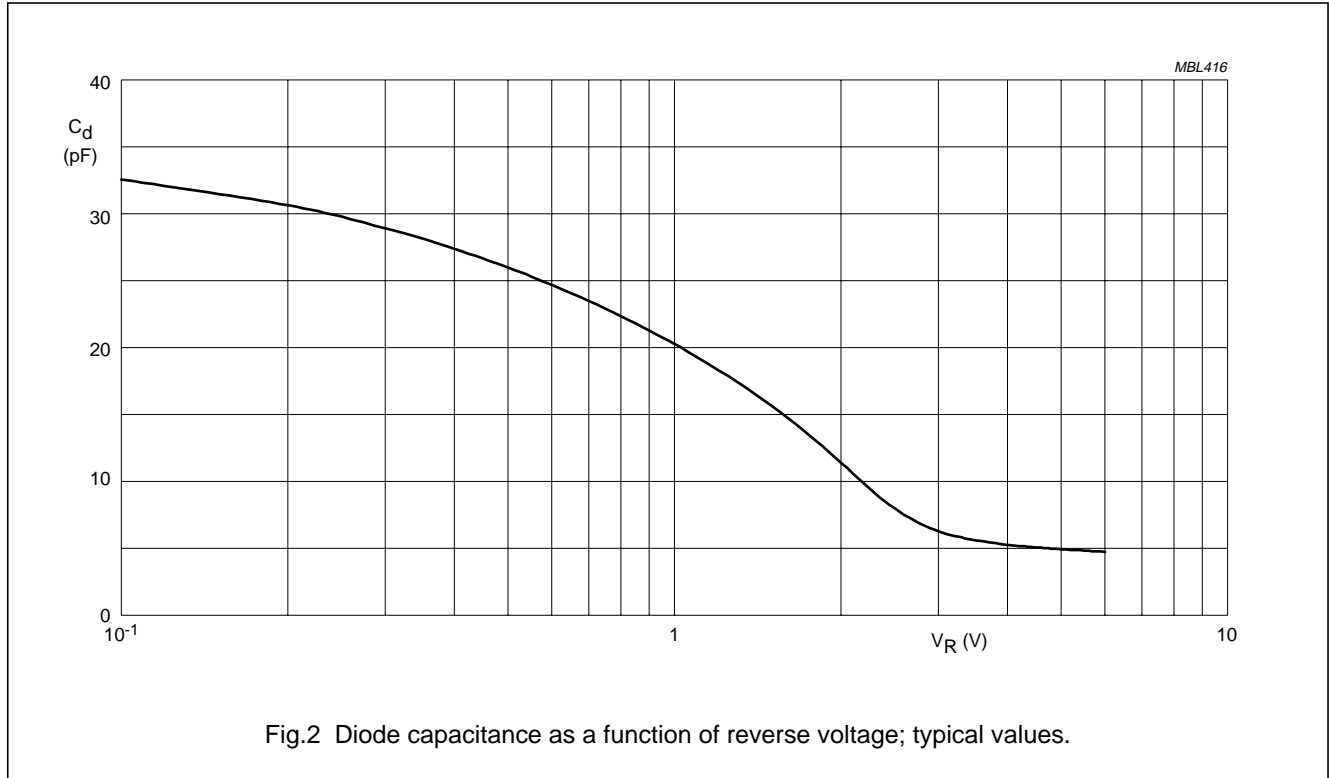
$T_j = 25\text{ °C}$  unless otherwise specified.

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



Low-voltage variable capacitance diode

BB202

PACKAGE OUTLINE

Plastic surface-mounted package; 2 leads

SOD523

0 0.5 1 mm  
scale

**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".

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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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Date of release: 3 January 2008

Document identifier: BB202\_N\_2

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