



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

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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

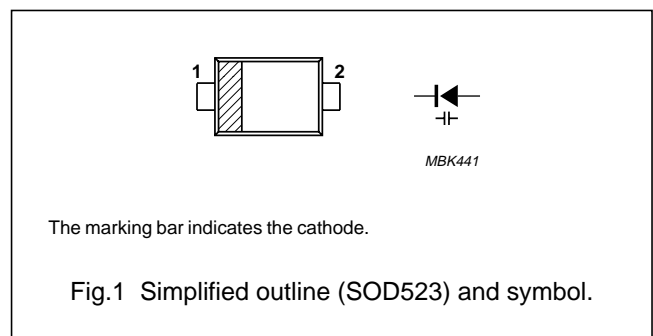
The BB202 is a variable capacitance diode, fabricated in planar technology, and encapsulated in the SOD523 ultra small SMD plastic package.

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

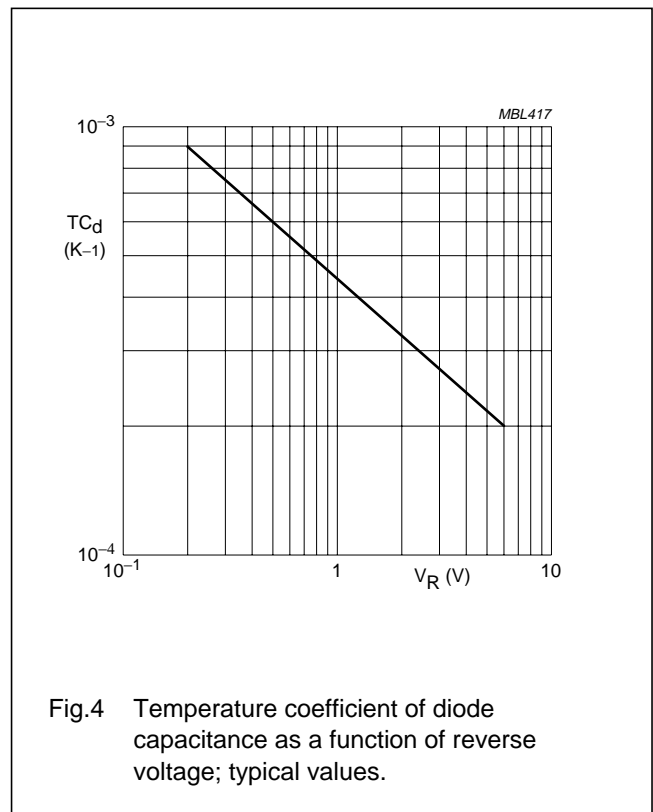
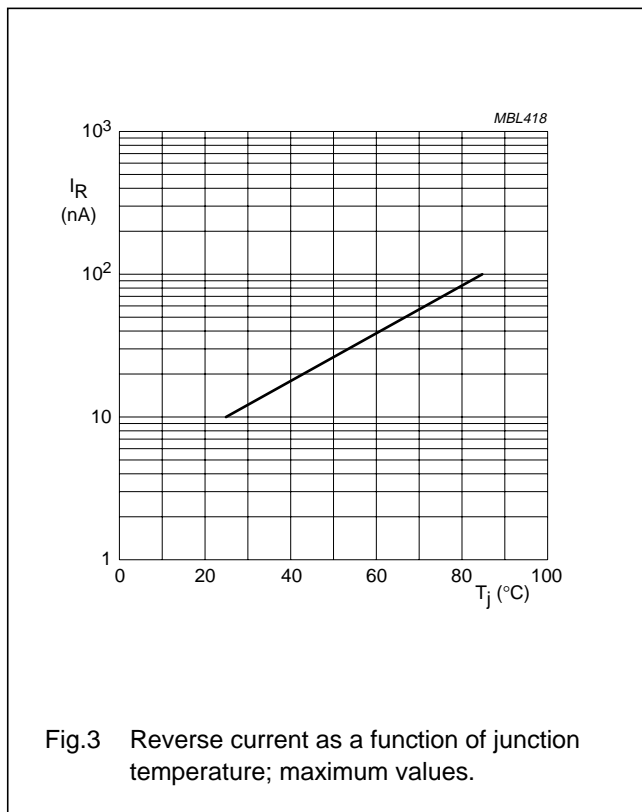
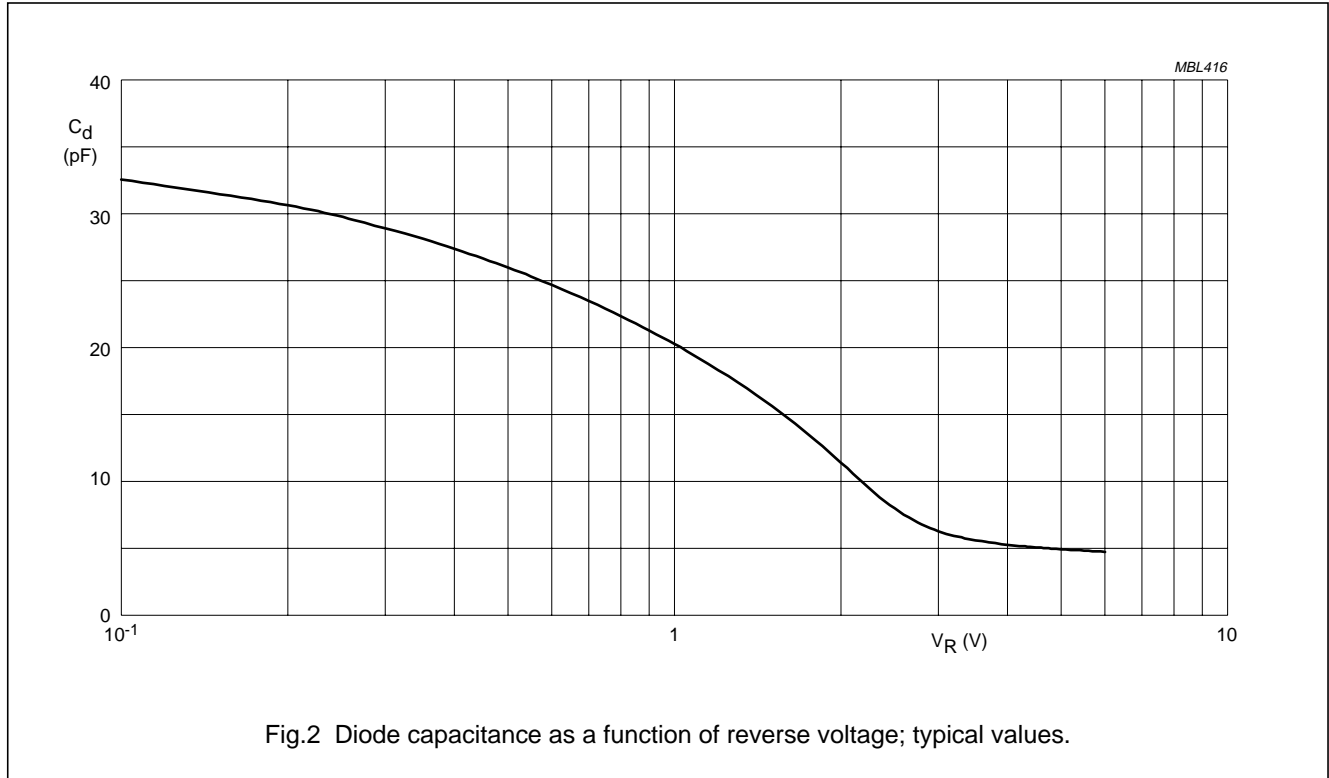
$T_j = 25\text{ °C}$ unless otherwise specified.

| 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 | Ω |
| 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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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 ^{[1][2]} | Product status ^[3] | 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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