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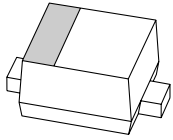
## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





# BB182

## VHF variable capacitance diode

Rev. 03 — 24 February 2009

Product data sheet

## 1. Product profile

### 1.1 General description

The BB182 is a planar technology variable capacitance diode in a SOD523 (SC-79) ultra small plastic package. The excellent matching performance is achieved by gliding matching and a Direct Matching Assembly (DMA) procedure.

### 1.2 Features




- High linearity
- Excellent matching to 2 % DMA
- Ultra small plastic SMD package
- $C_{d(28V)}$ : 2.7 pF;  $C_{d(1V)}$  to  $C_{d(28V)}$  ratio: 22
- Low series resistance

### 1.3 Applications

- Electronic tuning in VHF television tuners, Band A up to 160 MHz
- Voltage Controlled Oscillators (VCO)

## 2. Pinning information

Table 1. Pinning

Pin	Description	Simplified outline	Graphic symbol
1	cathode	[1]	
2	anode		

*sym008*

[1] The marking bar indicates the cathode.

## 3. Ordering information

Table 2. Ordering information

Type number	Package		Version
	Name	Description	
BB182	SC-79	plastic surface-mounted package; 2 leads	SOD523

## 4. Marking

**Table 3. Marking codes**

Type number	Marking code
BB182	2

## 5. Limiting values

**Table 4. Limiting values**

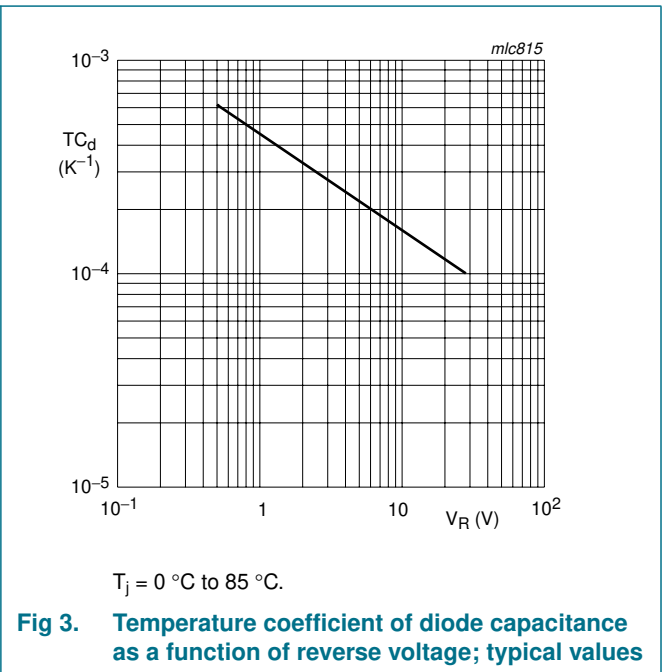
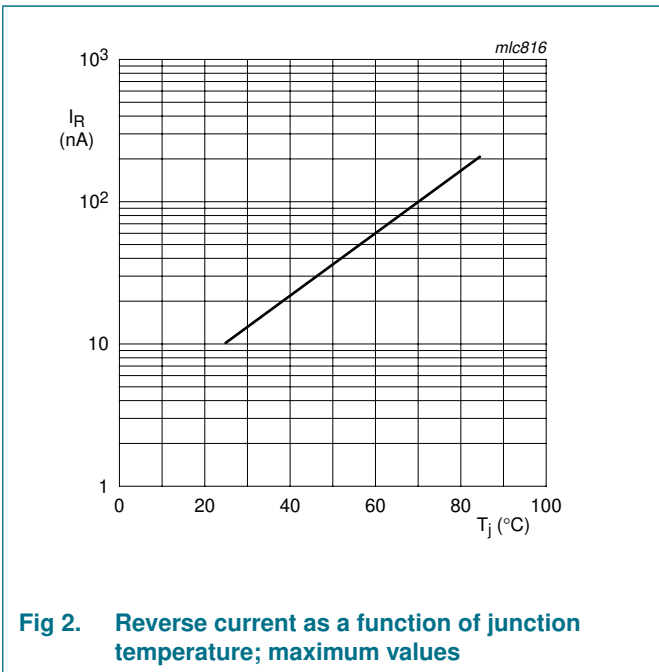
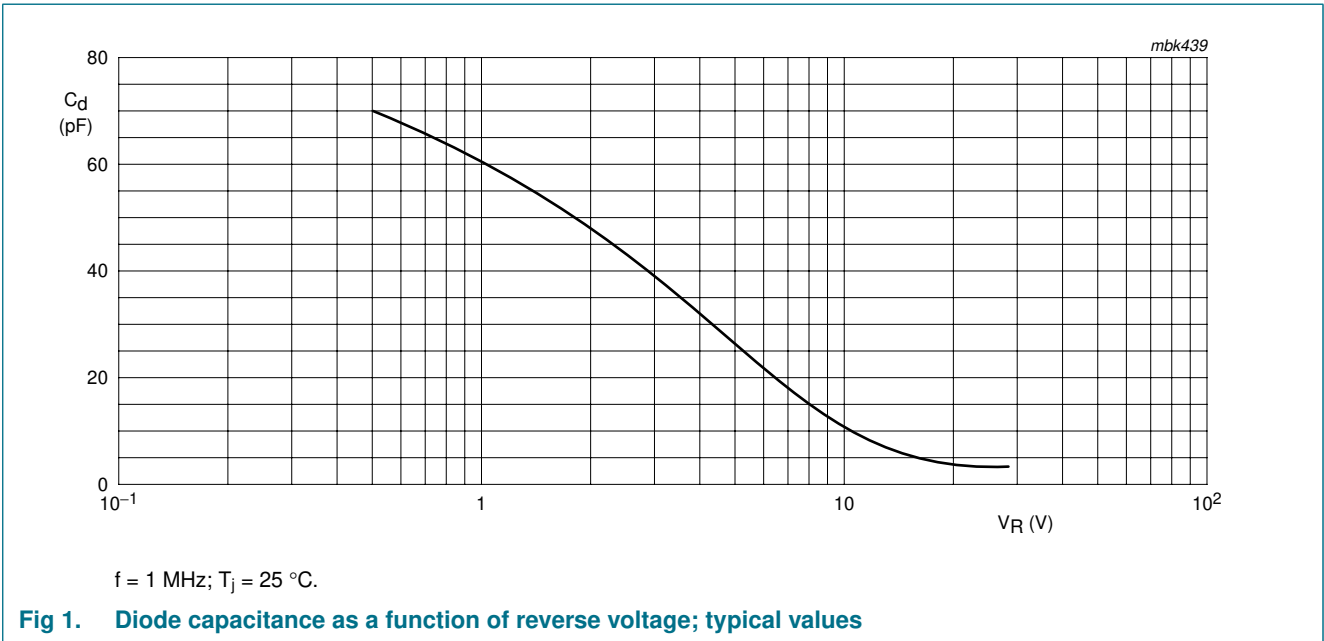
*In accordance with the Absolute Maximum Rating System (IEC 60134).*

Symbol	Parameter	Conditions	Min	Max	Unit
$V_R$	reverse voltage		-	32	V
		peak value in series with a 10 k $\Omega$ resistor	-	35	V
$I_F$	forward current		-	20	mA
$T_{stg}$	storage temperature		-55	+150	$^{\circ}\text{C}$
$T_j$	junction temperature		-55	+125	$^{\circ}\text{C}$

## 6. Characteristics

**Table 5. Characteristics**

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$I_R$	reverse current	see <a href="#">Figure 2</a>				
		$V_R = 30\text{ V}$	-	-	10	nA
		$V_R = 30\text{ V}; T_j = 85\text{ }^{\circ}\text{C}$	-	-	200	nA
$r_s$	diode series resistance	$f = 100\text{ MHz}$ at $C_d = 30\text{ pF}$	-	1.0	1.2	$\Omega$
$C_d$	diode capacitance	$f = 1\text{ MHz}$ ; see <a href="#">Figure 1</a> and <a href="#">Figure 3</a>				
		$V_R = 1\text{ V}$	52	-	62	pF
		$V_R = 28\text{ V}$	2.48	2.7	2.89	pF
$C_{d(1V)}/C_{d(2V)}$	diode capacitance ratio (1 V to 2 V)	$f = 1\text{ MHz}$	-	1.31	-	
$C_{d(1V)}/C_{d(28V)}$	diode capacitance ratio (1 V to 28 V)	$f = 1\text{ MHz}$	20.6	22	-	
$C_{d(25V)}/C_{d(28V)}$	diode capacitance ratio (25 V to 28 V)	$f = 1\text{ MHz}$	-	1.05	-	
$\Delta C_d/C_d$	diode capacitance matching	$V_R = 1\text{ V to }28\text{ V}$ ; in a sequence of 10 diodes (gliding)	-	-	2	%



## 7. Package outline

Plastic surface-mounted package; 2 leads

SOD523

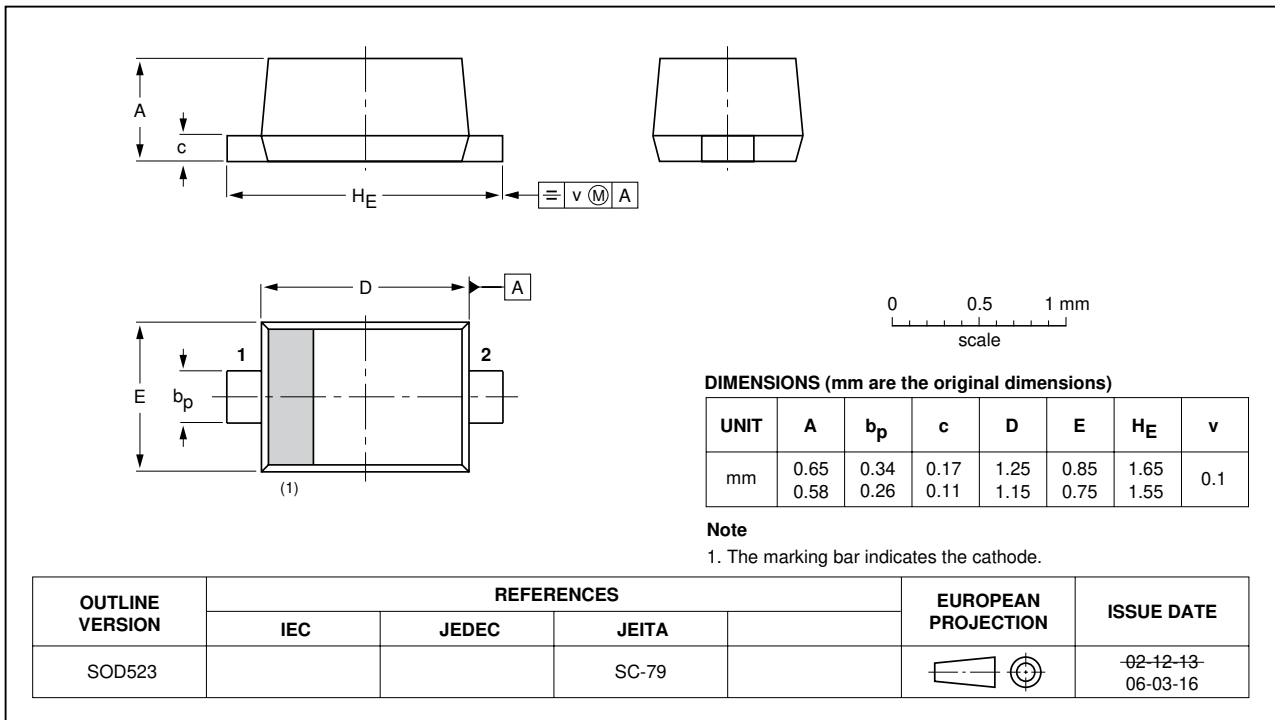


Fig 4. Package outline SOD523 (SC-79)

## 8. Abbreviations

Table 6. Abbreviations

Acronym	Description
SMD	Surface-Mounted Device
VHF	Very High Frequency

## 9. Revision history

Table 7. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BB182_3	20090224	Product data sheet	-	BB182_2
Modifications:		<ul style="list-style-type: none"> <li>The format of this data sheet has been redesigned to comply with the new identity guidelines of NXP Semiconductors</li> <li>Legal texts have been adapted to the new company name where appropriate</li> </ul>		
BB182_2	20041103	Product data sheet	-	BB182_1
BB182_1	19971113	Product specification	-	-

## 10. Legal information

### 10.1 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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## 12. Contents

<b>1</b>	<b>Product profile</b> .....	<b>1</b>
1.1	General description .....	1
1.2	Features .....	1
1.3	Applications .....	1
<b>2</b>	<b>Pinning information</b> .....	<b>1</b>
<b>3</b>	<b>Ordering information</b> .....	<b>1</b>
<b>4</b>	<b>Marking</b> .....	<b>2</b>
<b>5</b>	<b>Limiting values</b> .....	<b>2</b>
<b>6</b>	<b>Characteristics</b> .....	<b>2</b>
<b>7</b>	<b>Package outline</b> .....	<b>4</b>
<b>8</b>	<b>Abbreviations</b> .....	<b>4</b>
<b>9</b>	<b>Revision history</b> .....	<b>4</b>
<b>10</b>	<b>Legal information</b> .....	<b>5</b>
10.1	Data sheet status .....	5
10.2	Definitions .....	5
10.3	Disclaimers .....	5
10.4	Trademarks .....	5
<b>11</b>	<b>Contact information</b> .....	<b>5</b>
<b>12</b>	<b>Contents</b> .....	<b>6</b>

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