

# BB202LX

## Low-voltage variable capacitance diode

Rev. 01 — 11 April 2006

Preliminary data sheet

## 1. Product profile

### 1.1 General description

The BB202LX is a planar technology variable capacitance diode in a SOD882T ultra small leadless plastic SMD package.

### 1.2 Features

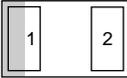
- Very steep Capacitance-Voltage (CV) curve
- $C_{d(0V2)}$ : 30.5 pF;  $C_{d(2V3)}$ : 9.5 pF
- Ratio  $C_{d(0V2)}$  to  $C_{d(2V3)}$  minimal 2.5
- Ultra small leadless SMD package
- Low series resistance

### 1.3 Applications

- Voltage Controlled Oscillators (VCO)
- Electronic tuning in FM radios
- Recommended as the reference VCO varactor for Philips Tuner ICs TEA5764, TEA5767 and TEA5768 in mobile and portable platforms

## 2. Pinning information

Table 1. Discrete pinning

Pin	Description	Simplified outline	Symbol
1	cathode	<a href="#">[1]</a>	
2	anode	 Transparent top view	 <i>sym008</i>

[1] The marking bar indicates the cathode.

### 3. Ordering information

**Table 2. Ordering information**

Type number	Package		Version
	Name	Description	
BB202LX	-	leadless ultra small plastic package; 2 terminals; body 1.0 × 0.6 × 0.4 mm	SOD882T

### 4. Marking

**Table 3. Marking**

Type number	Marking code
BB202LX	L1

### 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		-	6	V
$I_F$	forward current		-	10	mA
$T_{stg}$	storage temperature		-55	+85	°C
$T_j$	junction temperature		-55	+85	°C

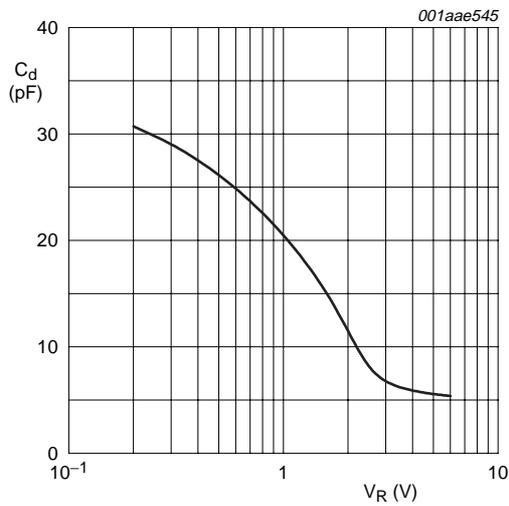
### 6. Characteristics

**Table 5. Characteristics**

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

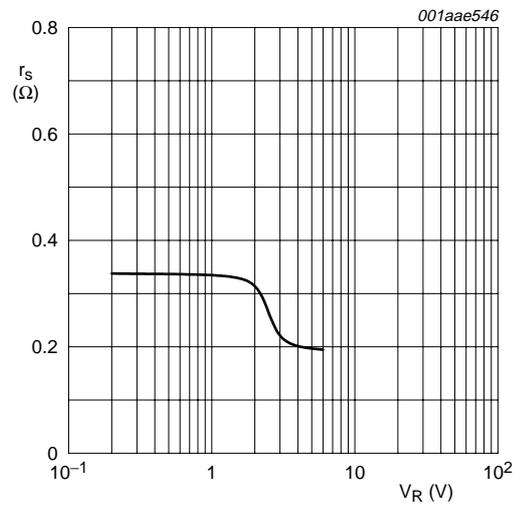
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$I_R$	reverse current	see <a href="#">Figure 3</a>				
		$V_R = 6\text{ V}$	-	-	10	nA
		$V_R = 6\text{ V}; T_j = 85\text{ °C}$	-	-	100	nA
$r_s$	diode series resistance	$f = 100\text{ MHz}$ ; see <a href="#">Figure 2</a> <sup>[1]</sup>	-	0.35	-	$\Omega$
$C_d$	diode capacitance	see <a href="#">Figure 1</a> and <a href="#">Figure 4</a> ; $f = 1\text{ MHz}$ ;				
		$V_R = 0.2\text{ V}$	28.2	-	33.5	pF
		$V_R = 2.3\text{ V}$	7.2	-	11.2	pF
$\frac{C_{d(0V2)}}{C_{d(2V3)}}$	diode capacitance ratio	$f = 1\text{ MHz}$	2.5	-	-	

[1]  $r_s$  is the value at which  $C_d = 30\text{ pF}$ .



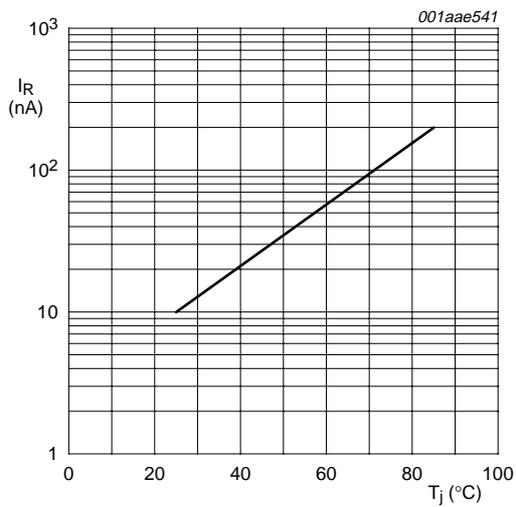
$f = 1 \text{ MHz}; T_j = 25 \text{ }^\circ\text{C}.$

**Fig 1. Diode capacitance as a function of reverse voltage; typical values**

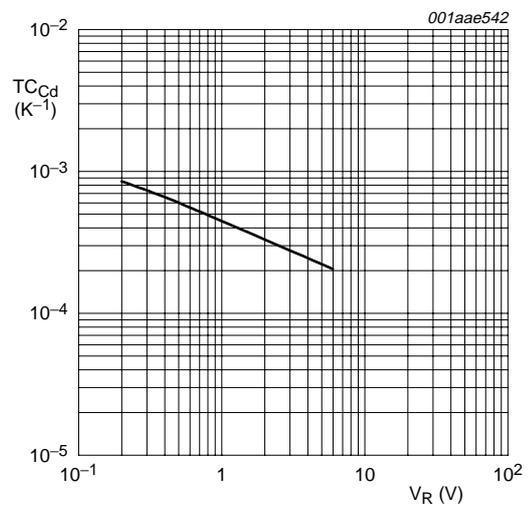


$f = 470 \text{ MHz}; T_j = 25 \text{ }^\circ\text{C}.$

**Fig 2. Diode serial resistance as a function of reverse voltage; typical values**



**Fig 3. Reverse current as a function of junction temperature; maximum values**



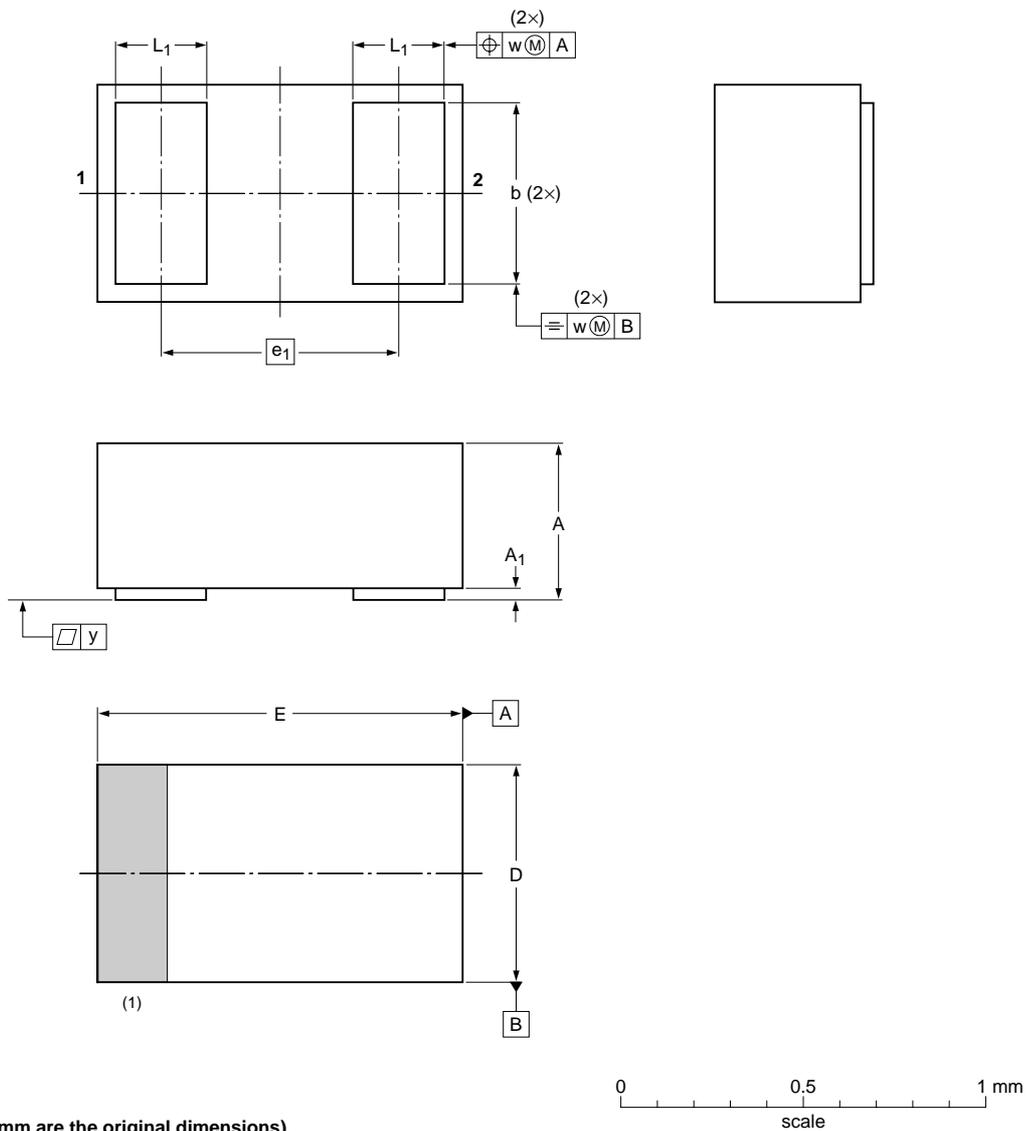
$T_j = 0 \text{ }^\circ\text{C} \text{ to } 85 \text{ }^\circ\text{C}.$

**Fig 4. Temperature coefficient of diode capacitance as a function of reverse voltage; typical values**

7. Package outline

Leadless ultra small plastic package; 2 terminals; body 1.0 x 0.6 x 0.4 mm

SOD882T



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max	b	D	E	e <sub>1</sub>	L <sub>1</sub>	w	y
mm	0.40 0.36	0.04	0.55 0.45	0.65 0.55	1.05 0.95	0.65	0.30 0.22	0.1	0.03

Note

1. The marking bar indicates the cathode

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA		
SOD882T					04-12-14

Fig 5. Package outline SOD882T

## 8. Revision history

Table 6. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BB202LX_1	20060411	Preliminary data sheet	-	-

## 9. Legal information

### 9.1 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".

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