

# BB187LX

## VHF variable capacitance diode

Rev. 01 — 19 February 2009

Product data sheet

## 1. Product profile

### 1.1 General description

The BB187LX is a planar technology variable capacitance diode in a SOD882T ultra small leadless plastic SMD package. The excellent matching performance is achieved by gliding matching and a Direct Matching Assembly (DMA) procedure.

### 1.2 Features


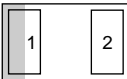

- High linearity
- Excellent matching to 2 % DMA
- Ultra small leadless SMD package
- $C_{d(25V)}$  : 2.75 pF;  $C_{d(2V)}$  to  $C_{d(25V)}$  ratio: 11
- Low series resistance

### 1.3 Applications

- Voltage Controlled Oscillators (VCO)
- Electronic tuning in VHF television tuners

## 2. Pinning information

Table 1. Pinning

Pin	Description	Simplified outline	Graphic symbol
1	cathode	<a href="#">[1]</a>	
2	anode		

Transparent top view

[1] The marking bar indicates the cathode.

## 3. Ordering information

Table 2. Ordering information

Type number	Package		
	Name	Description	Version
BB187LX	-	leadless ultra small plastic package; 2 terminals; body 1 × 0.6 × 0.4 mm	SOD882T

## 4. Marking

Table 3. Marking codes

Type number	Marking code
BB187LX	L8

## 5. Limiting values

Table 4. Limiting values

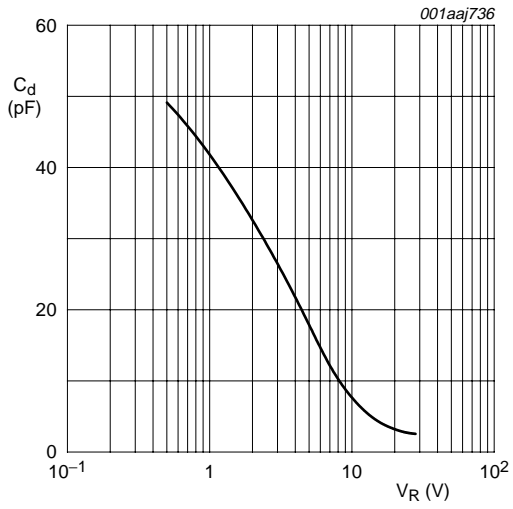
In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions	Min	Max	Unit
$V_R$	reverse voltage		-	32	V
$I_F$	forward current		-	20	mA
$T_{stg}$	storage temperature		-55	+150	°C
$T_j$	junction temperature		-55	+125	°C

## 6. Characteristics

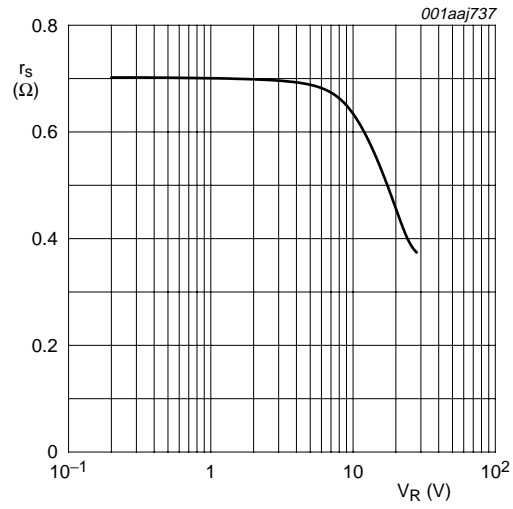
Table 5. Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$I_R$	reverse current	see <a href="#">Figure 3</a>				
		$V_R = 30$ V	-	-	10	nA
		$V_R = 30$ V; $T_j = 85$ °C	-	-	200	nA
$r_s$	diode series resistance	$f = 470$ MHz at $V_R = 5$ V; see <a href="#">Figure 2</a>	-	0.7	-	$\Omega$
$C_d$	diode capacitance	$f = 1$ MHz; see <a href="#">Figure 1</a> and <a href="#">Figure 4</a>				
		$V_R = 2$ V	29.3	-	34.2	pF
		$V_R = 25$ V	2.57	2.75	2.92	pF
$C_{d(2V)}/C_{d(25V)}$	diode capacitance ratio (2 V to 25 V)	$f = 1$ MHz	11	-	-	
$\Delta C_d/C_d$	diode capacitance matching	$V_R = 1$ V to 25 V; in sequence of 5 diodes (gliding)	-	-	2	%



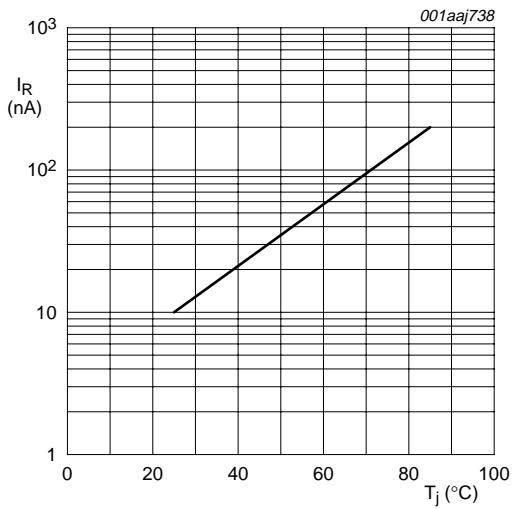
$f = 1 \text{ MHz}; T_j = 25 \text{ }^\circ\text{C}.$

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

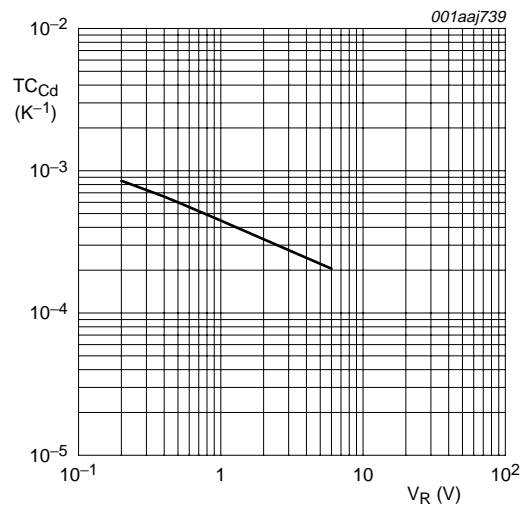


$f = 470 \text{ MHz}; T_j = 25 \text{ }^\circ\text{C}.$

**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 x 0.6 x 0.4 mm

SOD882T

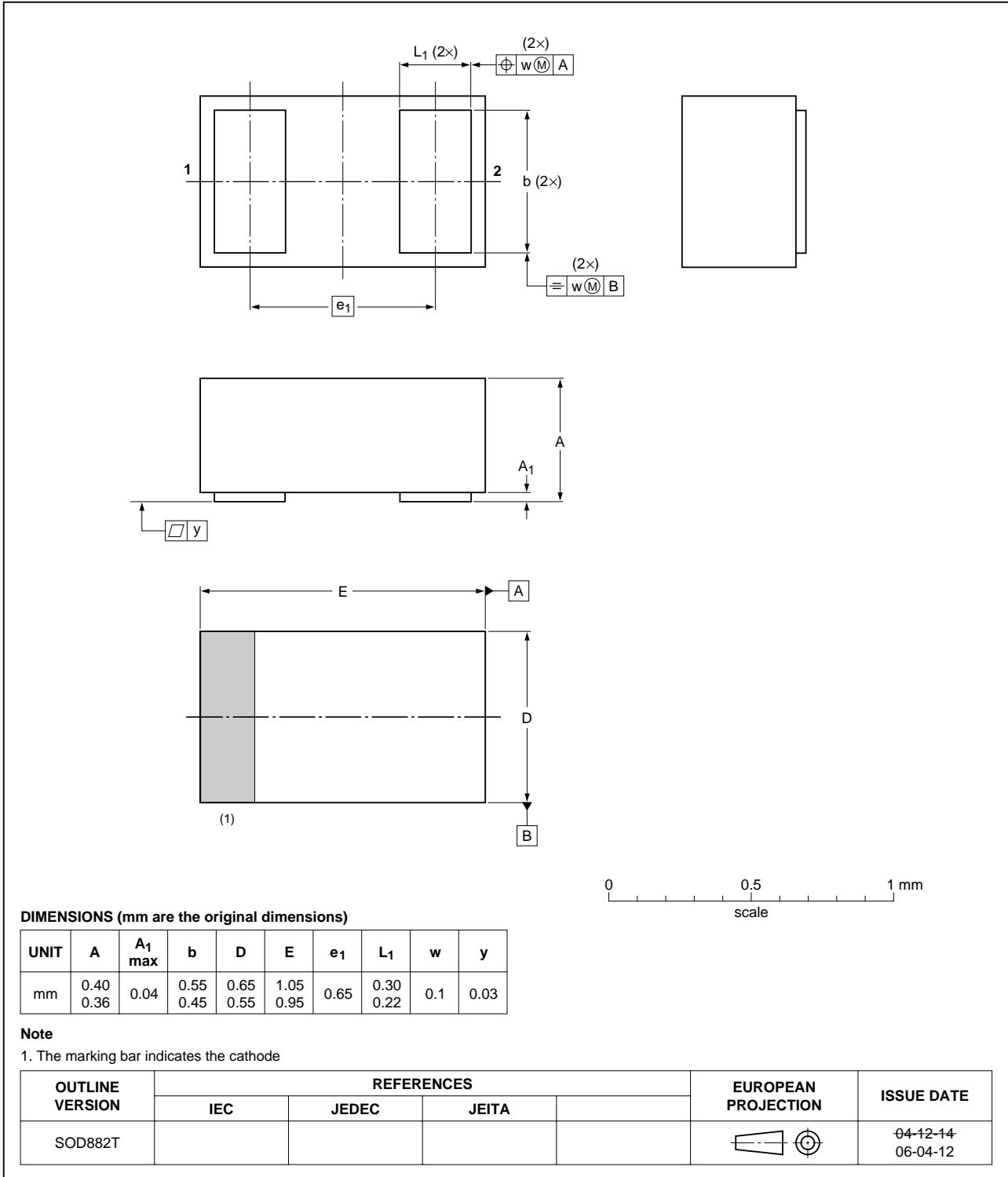


Fig 5. Package outline SOD882T

## 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
BB187LX_1	20090219	Product data sheet	-	-

## 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".

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