

# BB179BLX

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## UHF variable capacitance diode

Rev. 01 — 29 January 2009

Product data sheet

## 1. Product profile

### 1.1 General description

The BB179BLX 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

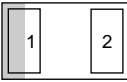

- Excellent linearity
- Excellent matching to 2 % DMA
- Ultra small leadless SMD package
- $C_{d(28V)}$  : 2.1 pF;  $C_{d(1V)}$  to  $C_{d(28V)}$  ratio typical 9
- Low series resistance

### 1.3 Applications

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

## 2. Pinning information

Table 1. Pinning

Pin	Description	Simplified outline	Graphic symbol
1	cathode		
2	anode		

Transparent top view

sym008

[1] The marking bar indicates the cathode.

## 3. Ordering information

Table 2. Ordering information

Type number	Package		
	Name	Description	Version
BB179BLX	-	leadless ultra small plastic package; 2 terminals; body 1.0 × 0.6 × 0.4 mm	SOD882T

## 4. Marking

Table 3. Marking codes

Type number	Marking code
BB179BLX	L5

## 5. Limiting values

Table 4. Limiting values

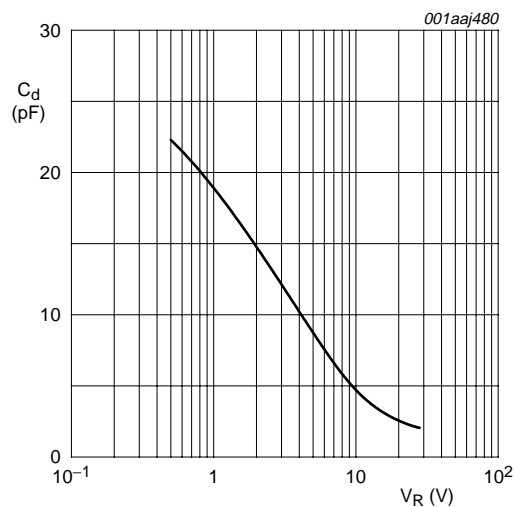
In accordance with the Absolute Maximum Rating System (IEC 60134).

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

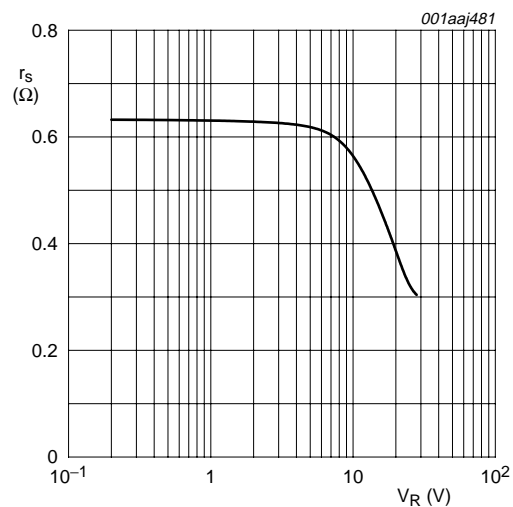
Table 5. Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$I_R$	reverse current	see <a href="#">Figure 3</a>				
		$V_R = 30\text{ V}$	-	-	10	nA
		$V_R = 30\text{ V}; T_j = 85\text{ °C}$	-	-	200	nA
$r_s$	diode series resistance	$f = 470\text{ MHz}$ at $C_d = 9\text{ pF}$ ; see <a href="#">Figure 2</a>	-	0.65	-	$\Omega$
$C_d$	diode capacitance	$f = 1\text{ MHz}$ ; see <a href="#">Figure 1</a> and <a href="#">Figure 4</a>				
		$V_R = 1\text{ V}$	18.22	-	20	pF
		$V_R = 28\text{ V}$	1.9	2.1	2.25	pF
$C_{d(1V)}/C_{d(2V)}$	diode capacitance ratio (1 V to 2 V)	$f = 1\text{ MHz}$	-	1.27	-	
$C_{d(1V)}/C_{d(28V)}$	diode capacitance ratio (1 V to 28 V)	$f = 1\text{ MHz}$	8.45	9	10.9	
$C_{d(25V)}/C_{d(28V)}$	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 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

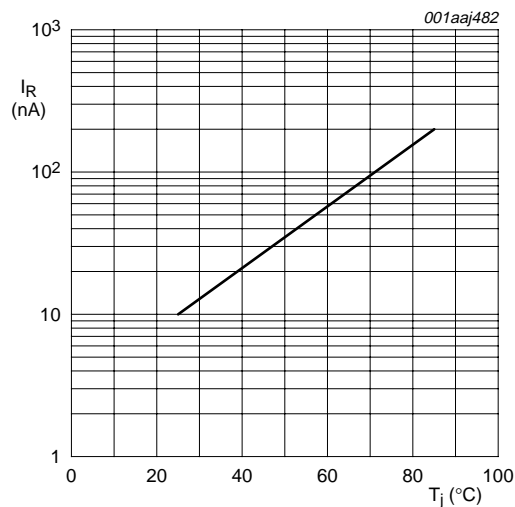
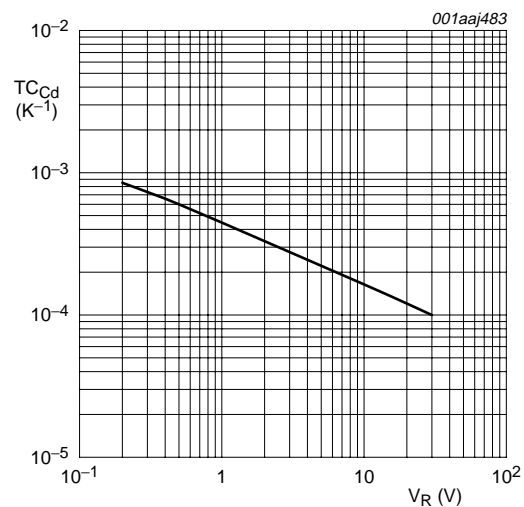


Fig 3. Reverse current as a function of junction temperature; maximum values



$T_j = 0 \text{ }^\circ\text{C}$  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

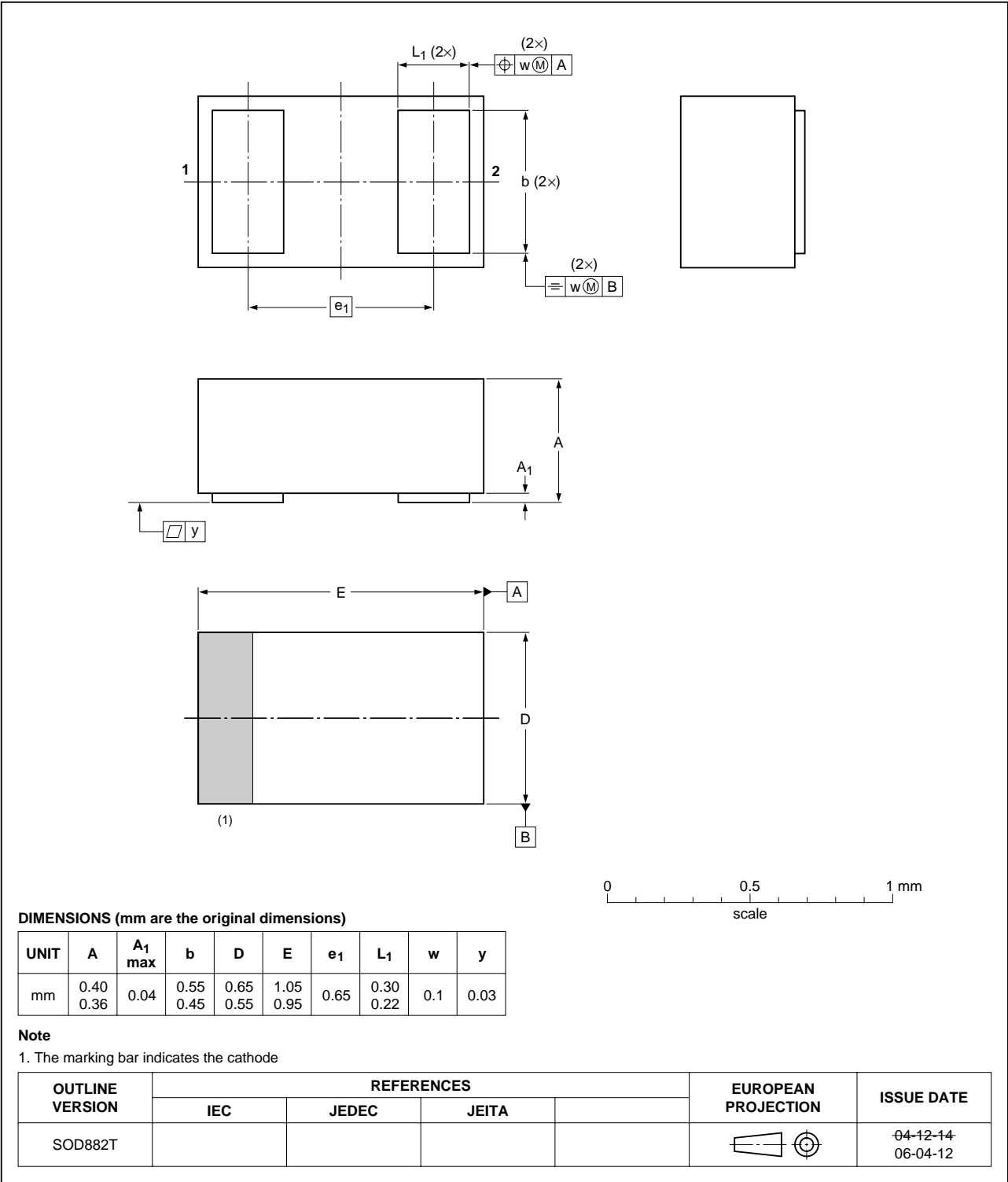


Fig 5. Package outline SOD882T

## 8. Abbreviations

Table 6. Abbreviations

Acronym	Description
SMD	Surface Mounted Device
UHF	Ultra High Frequency

## 9. Revision history

Table 7. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BB179BLX_1	20090129	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.

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[2] The term 'short data sheet' is explained in section "Definitions".

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