

BB179BLX

UHF variable capacitance diode

Rev. 2 — 5 September 2011

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 and benefits

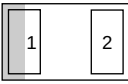
- Excellent linearity
- Excellent matching to 2 % DMA
- Ultra small leadless SMD package
- $C_{d(28V)}$: 2.1 pF; $C_{d(1V)}$ to $C_{d(28V)}$ ratio typical 9
- Low series resistance

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	 Transparent top view	 sym008
2	anode		

[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

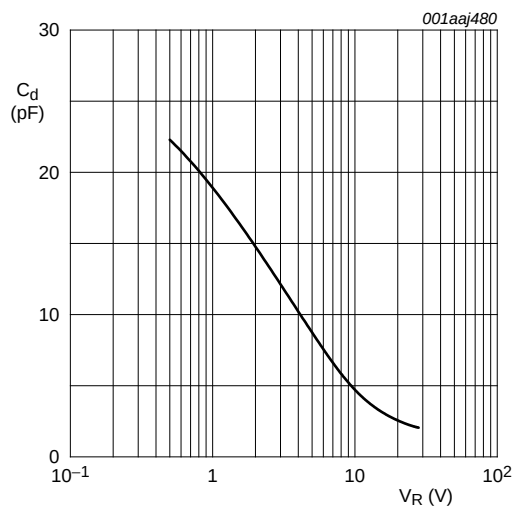
In accordance with the Absolute Maximum Rating System (IEC 60134).

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

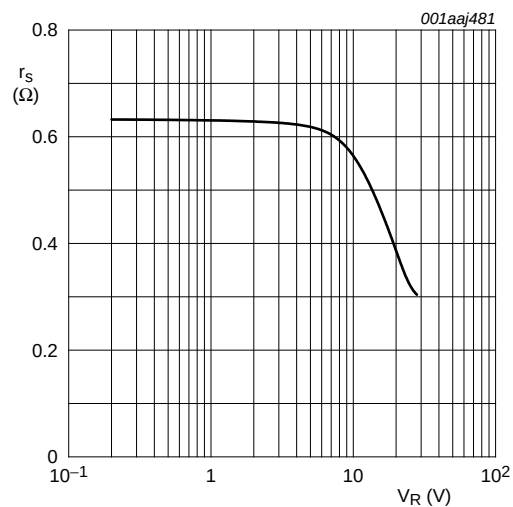
Table 5. Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
I_R	reverse current	see Figure 3				
		$V_R = 30\text{ V}$	-	-	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 Figure 2	-	0.65	-	Ω
C_d	diode capacitance	$f = 1\text{ MHz}$; see Figure 1 and Figure 4				
		$V_R = 1\text{ V}$	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

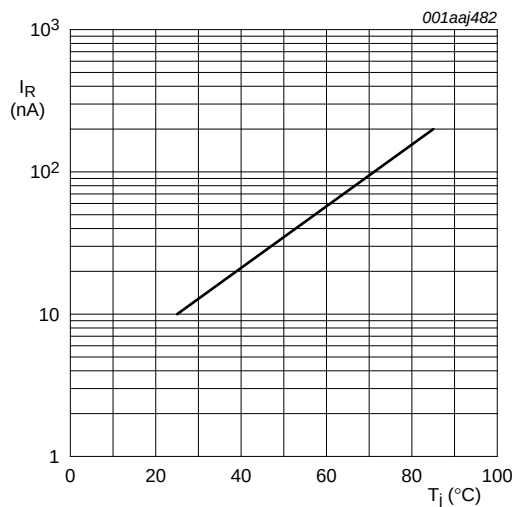
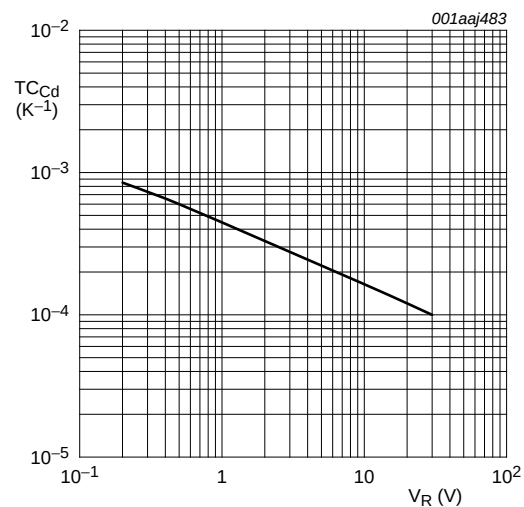


Fig 3. Reverse current as a function of junction temperature; maximum values



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

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

7. Package outline

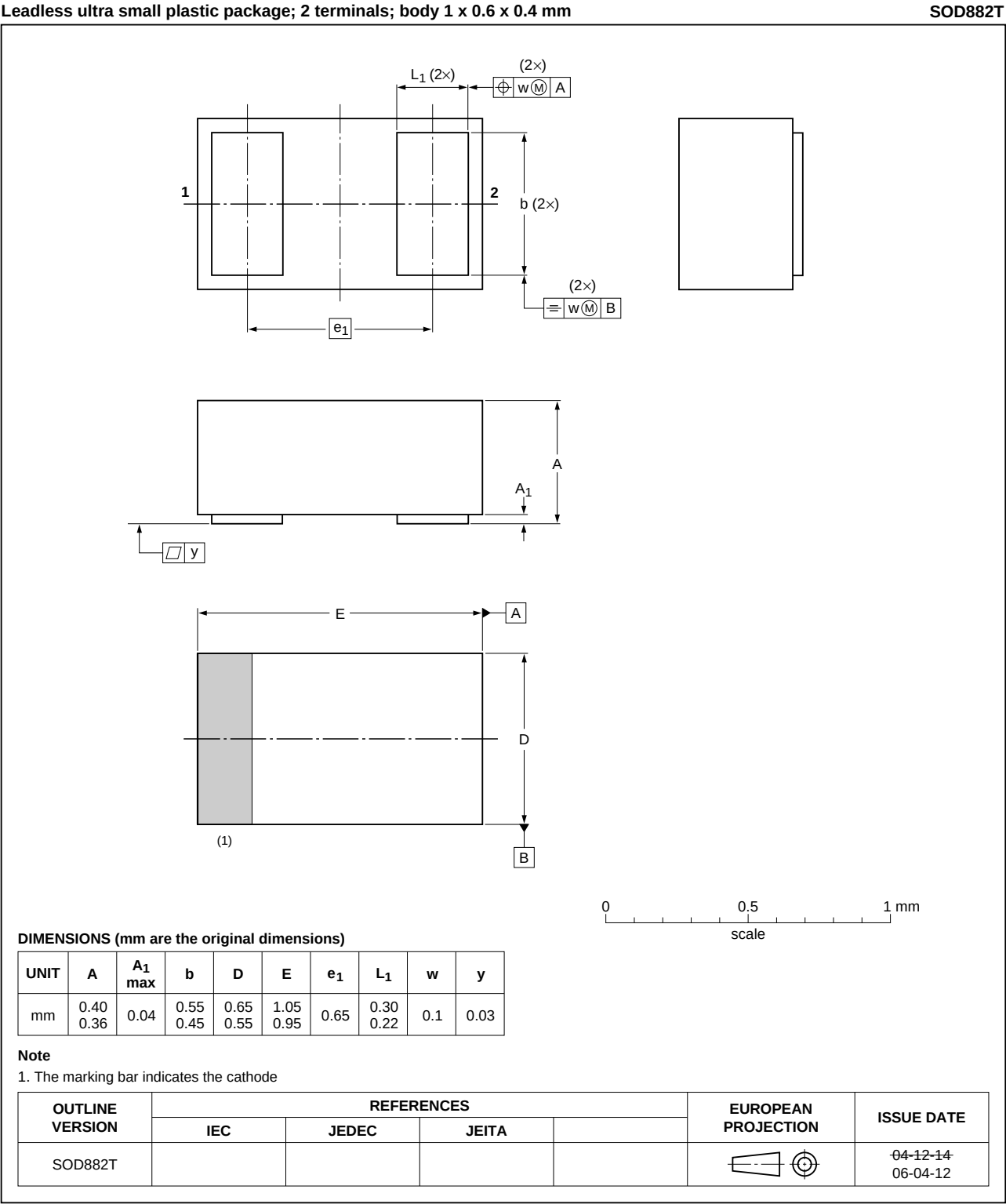


Fig 5. Package outline SOD882T

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 v.2	20110905	Product data sheet	-	BB179BLX v.1
Modifications:	- The format of this data sheet has been redesigned to comply with the new identity guidelines of NXP Semiconductors. - Legal texts have been adapted to the new company name where appropriate.			
BB179BLX v.1	20090129	Product data sheet	-	-

10. Legal information

10.1 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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