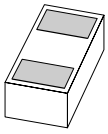


BB179LX

UHF variable capacitance diode

Rev. 01 — 13 April 2006 **Preliminary data sheet**

1. Product profile

1.1 General description

The BB179LX 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

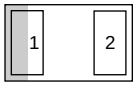
- Excellent linearity
- Excellent matching to 2 % DMA
- Ultra small leadless SMD package
- $C_{d(28V)}$: 2.1 pF; $C_{d(1V)}$ to $C_{d(28V)}$ ratio typical 9
- Low series resistance

1.3 Applications

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

2. Pinning information

Table 1. Discrete pinning

Pin	Description		Simplified outline	Symbol
1	cathode	[1]	 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
BB179LX	-	leadless ultra small plastic package; 2 terminals; body 1.0 × 0.6 × 0.4 mm	SOD882T

PHILIPS

4. Marking

Table 3. Marking

Type number	Marking code
BB179LX	L4

5. Limiting values

Table 4. Limiting values

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

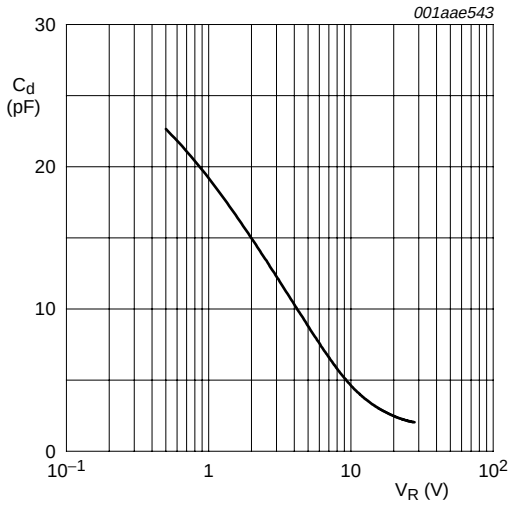
Symbol	Parameter	Conditions	Min	Max	Unit
V_R	reverse voltage		-	30	V
I_F	forward current		-	20	mA
T_{stg}	storage temperature		–55	+150	°C
T_j	junction temperature		–55	+125	°C

6. Characteristics

Table 5. Characteristics

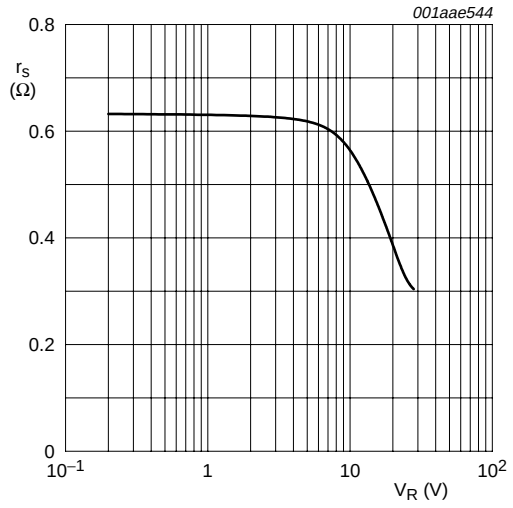
T_j = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
I_R	reverse current	see Figure 3				
		V_R = 30 V	-	-	10	nA
		V_R = 30 V; T_j = 85 °C	-	-	200	nA
r_s	diode series resistance	f = 470 MHz; C_d = 30 pF; see Figure 2	-	0.65	-	Ω
C_d	diode capacitance	see Figure 1 and Figure 4; f = 1 MHz;				
		V_R = 1 V	18.2	-	21.3	pF
		V_R = 28 V	1.95	2.1	2.22	pF
$\frac{C_{d(1V)}}{C_{d(2V)}}$	diode capacitance ratio	f = 1 MHz	-	1.27	-	
$\frac{C_{d(1V)}}{C_{d(28V)}}$	diode capacitance ratio	f = 1 MHz	8.45	9	10.9	
$\frac{C_{d(25V)}}{C_{d(28V)}}$	diode capacitance ratio	f = 1 MHz	-	1.05	-	
$\frac{\Delta C_d}{C_d}$	diode capacitance matching	V_R = 1 V to 28 V; in sequence of 5 diodes (gliding)	-	-	2	%



f = 1 MHz; T_j = 25 °C.

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



f = 470 MHz; T_j = 25 °C.

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

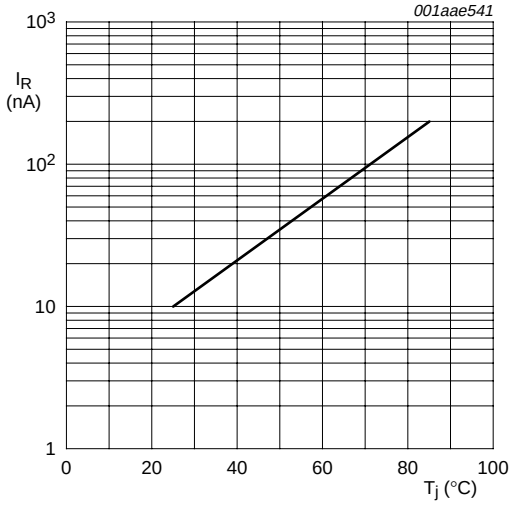
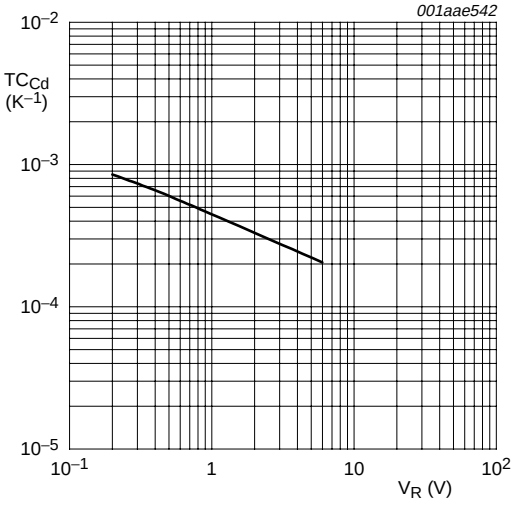


Fig 3. Reverse current as function of junction temperature; maximum values

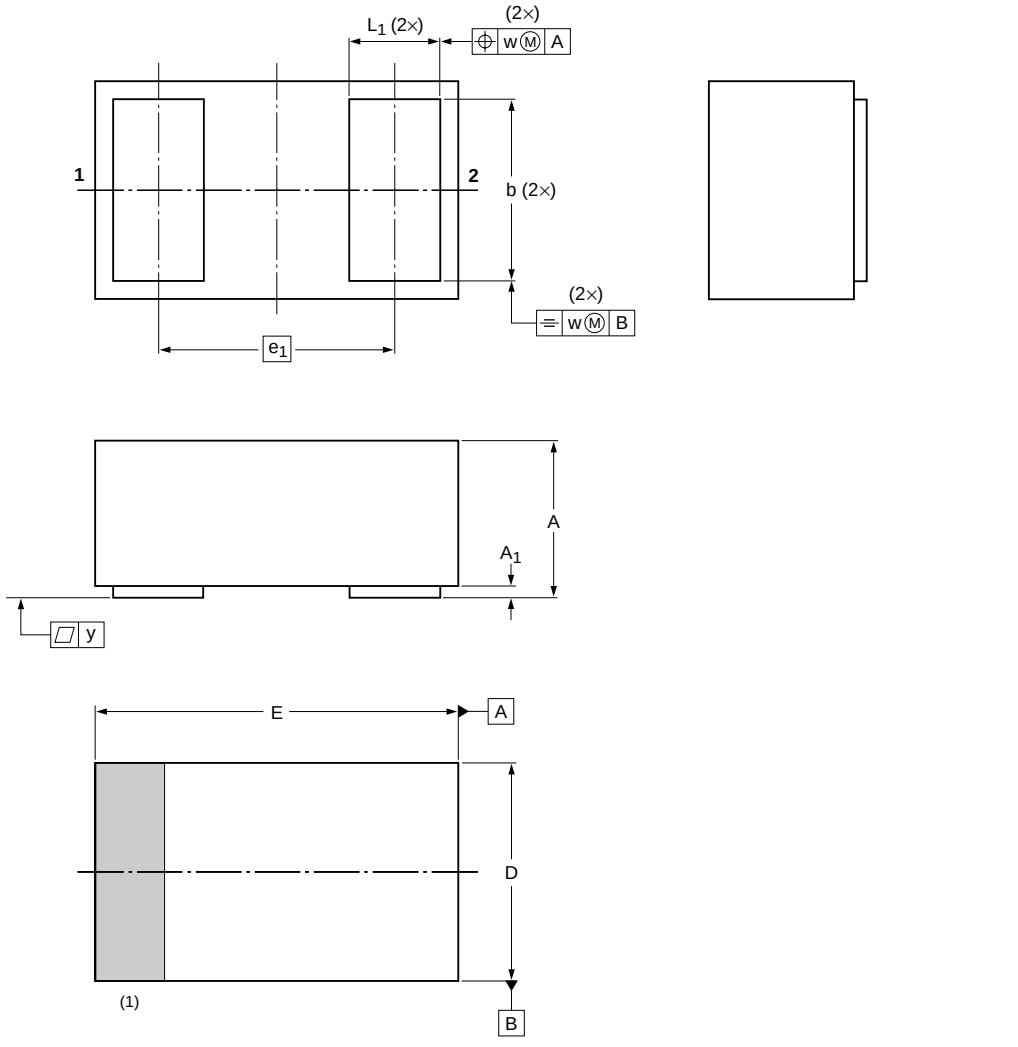


T_j = 25 °C to 85 °C.

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**



DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1 max	b	D	E	e_1	L_1	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~~ 06-04-12

Fig 5. Package outline SOD882T

8. Revision history

Table 6. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BB179LX_1	20060413	Preliminary data sheet	-	-

9. Legal information

9.1 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".

[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.semiconductors.philips.com.

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Date of release: 13 April 2006

Document identifier: BB179LX_1