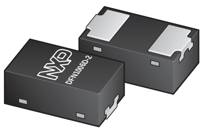


BB173LX

VHF variable capacitance diode

Rev. 1 — 25 March 2013 | Product data sheet

1. Product profile

1.1 General description

The BB173LX is a variable capacitance diode, fabricated in planar technology, and encapsulated in the SOD882D (DFN1006D-2) ultra small leadless SMD plastic package.

1.2 Features and benefits

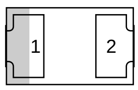
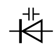
- Excellent linearity
- Ultra small leadless SMD package
- $C_{d(28V)}$ = 2.6 pF; $C_{d(1V)}$ to $C_{d(28V)}$ ratio = 15
- Low series resistance

1.3 Applications

- Voltage Controlled Oscillators (VCO)

2. Pinning information

Table 1. 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
BB173LX	DFN1006D-2	leadless ultra small plastic package; 2 terminals; body 1 × 0.6 × 0.4	SOD882D

4. Marking

Table 3. Marking codes

Type number	Marking code [1]
BB173LX	1000
	1001

[1] For SOD882D binary marking code description, see Figure 1.

4.1 Binary marking code description

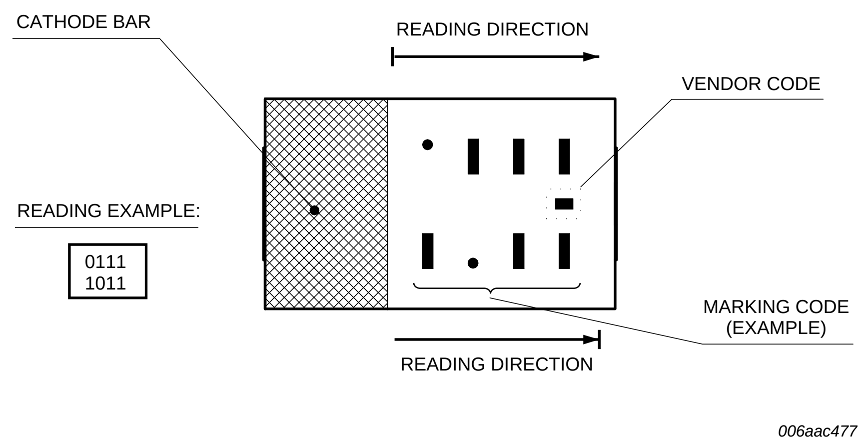


Fig 1. SOD882D binary marking code description

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

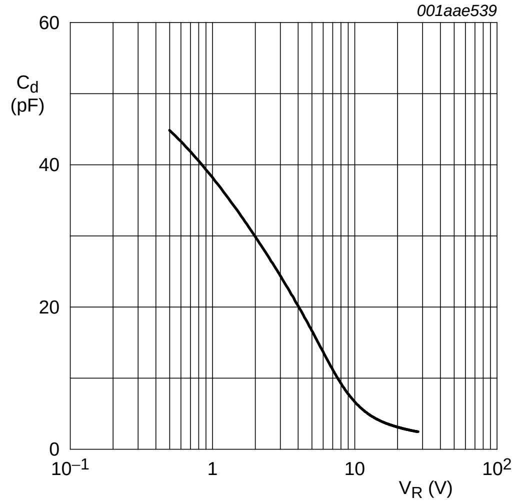
T_j = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
I_R	reverse current	V_R = 30 V	[1]	-	-	10	nA
		V_R = 30 V; T_j = 85 °C	[1]	-	-	200	nA
r_s	diode series resistance	f = 100 MHz; C_d = 30 pF	[2]	-	0.7	-	Ω
C_d	diode capacitance	f = 1 MHz	[3]				
		V_R = 1 V		34.65	-	42.35	pF
		V_R = 28 V		2.36	2.6	2.75	pF
$C_{d(1V)}/C_{d(2V)}$	diode capacitance ratio (1 V to 2 V)	f = 1 MHz		-	1.3	-	
$C_{d(1V)}/C_{d(28V)}$	diode capacitance ratio (1 V to 28 V)	f = 1 MHz		13.5	15	-	
$C_{d(25V)}/C_{d(28V)}$	diode capacitance ratio (25 V to 28 V)	f = 1 MHz		-	1.08	-	

[1] See Figure 4.

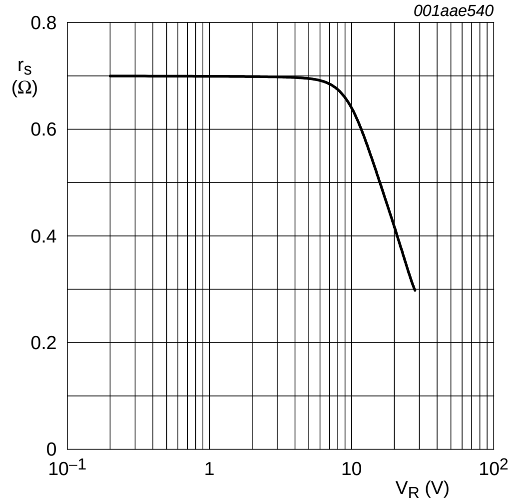
[2] See Figure 3.

[3] See Figure 2 and Figure 5.



f = 1 MHz; T_j = 25 °C.

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



f = 100 MHz; T_j = 25 °C.

Fig 3. Diode series resistance as a function of reverse voltage; typical values

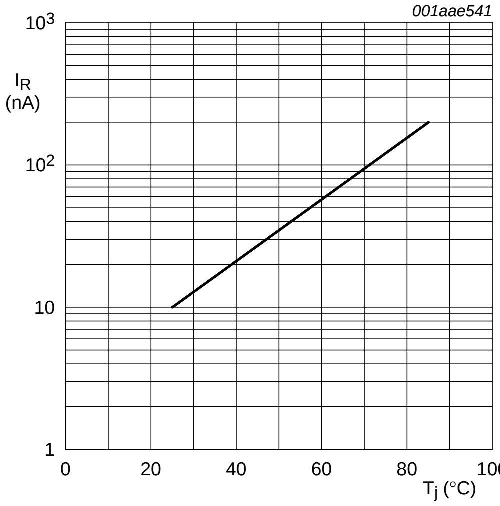
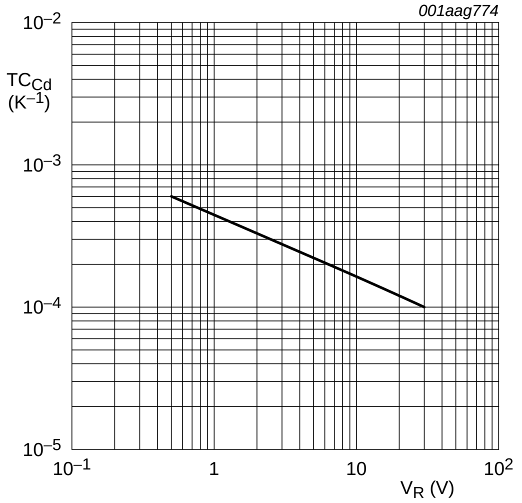


Fig 4. Reverse current as a function of junction temperature; maximum values

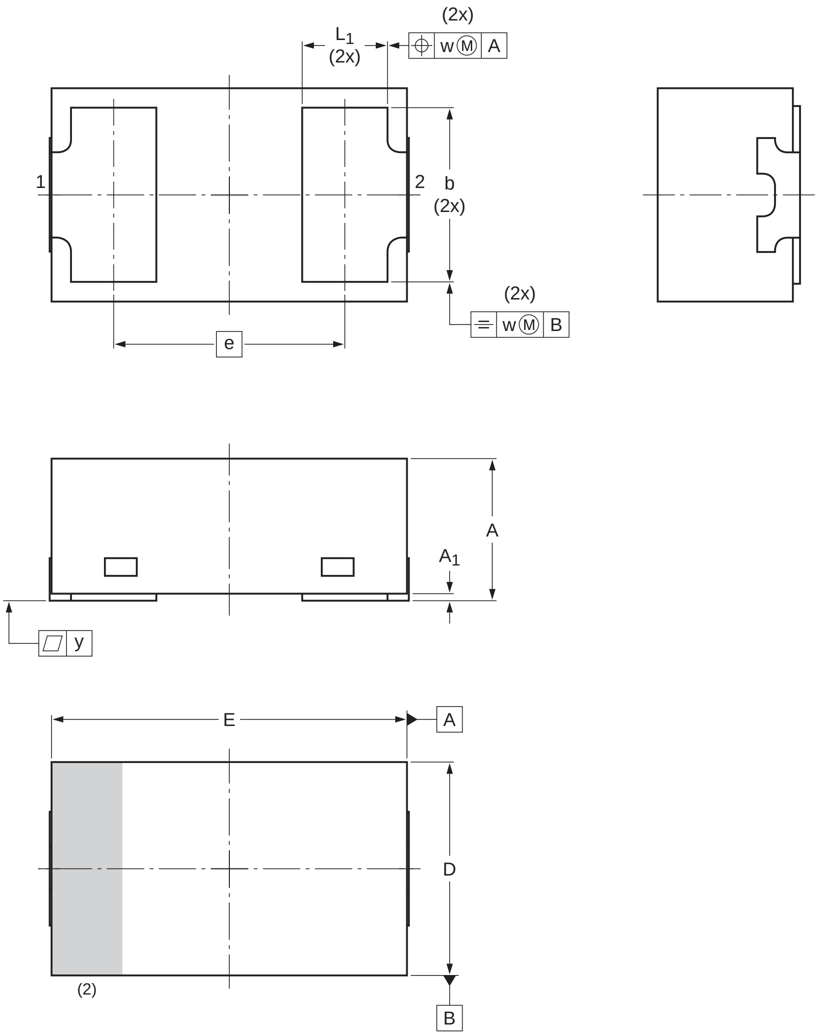


T_j = 0 °C to 85 °C.

Fig 5. Diode capacitance temperature coefficient as a function of reverse voltage; typical values

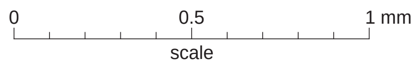
7. Package outline

DFN1006D-2: Leadless ultra small plastic package; 2 terminals; body 1 x 0.6 x 0.4 mm **SOD882D**



Dimensions

Unit		$A^{(1)}$	A_1	b	D	E	e	L_1	w	y
mm	max	0.4	0.04	0.55	0.65	1.05		0.30	0.1	0.03
	nom			0.50	0.60	1.00	0.65	0.25		
	min			0.45	0.55	0.95		0.22		



Note

1. Dimension including plating thickness.
2. The marking bar indicates the cathode (if applicable).

sod882d_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	JEITA			
SOD882D						~~10-09-27~~ 12-05-01

Fig 6. Package outline SOD882D (DFN1006D-2)

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
BB173LX v.1	20130325	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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