



# BAP64LX

Silicon PIN diode  
Rev. 6.0 — 4 July 2018

Product data sheet

## 1 Product profile

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### 1.1 General description

Planar PIN diode in a SOD882D leadless ultra small plastic SMD package.

### 1.2 Features and benefits

- High voltage, current controlled RF resistor for RF attenuators and switches
- Low diode capacitance
- Low forward resistance
- Very low series inductance
- For applications up to 3 GHz
- AEC-Q101 qualified

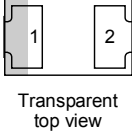

### 1.3 Applications

- RF attenuators and switches



## 2 Pinning information

Table 1. Discrete pinning

Pin	Description	Simplified outline	Symbol
1	cathode <sup>[1]</sup>		 sym006
2	anode		

[1] The marking bar indicates the cathode.

## 3 Ordering information

Table 2. Ordering information

Type number	Package		
	Name	Description	Version
BAP64LX	DFN1006D-2	leadless ultra small plastic package; 2 terminals; body 1 x 0.6 x 0.4 mm	SOD882D

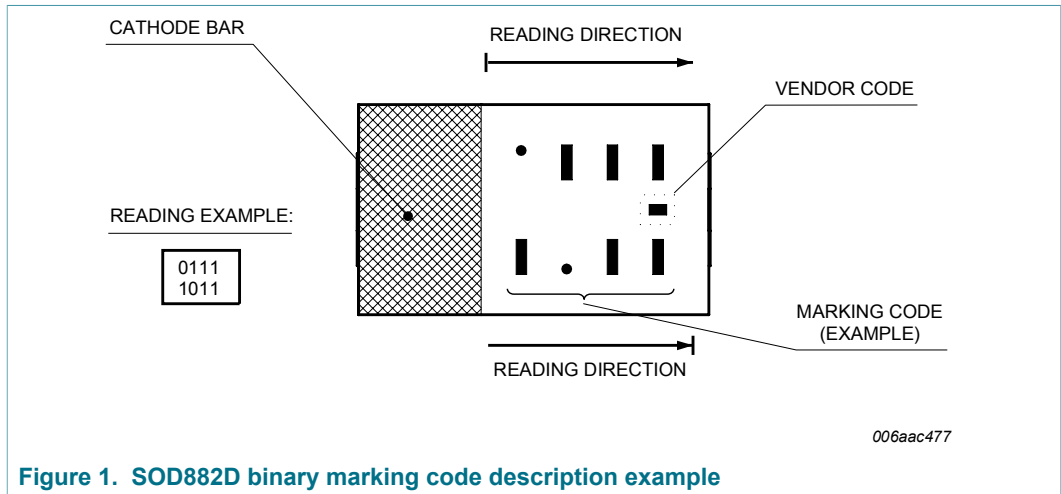
## 4 Marking

Table 3. Marking codes

Type number	Marking code <sup>[1]</sup>
BAP64LX	1111 1111

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

### 4.1 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		-	60	V
$I_F$	forward current		-	100	mA
$P_{tot}$	total power dissipation	$T_{sp} = 90\text{ °C}$	-	150	mW
$T_{stg}$	storage temperature		-65	+150	°C
$T_j$	junction temperature		-65	+150	°C

## 6 Thermal characteristics

**Table 5. Thermal characteristics**

Symbol	Parameter	Conditions	Typ	Unit
$R_{th(j-sp)}$	thermal resistance from junction to solder point		56	K/W

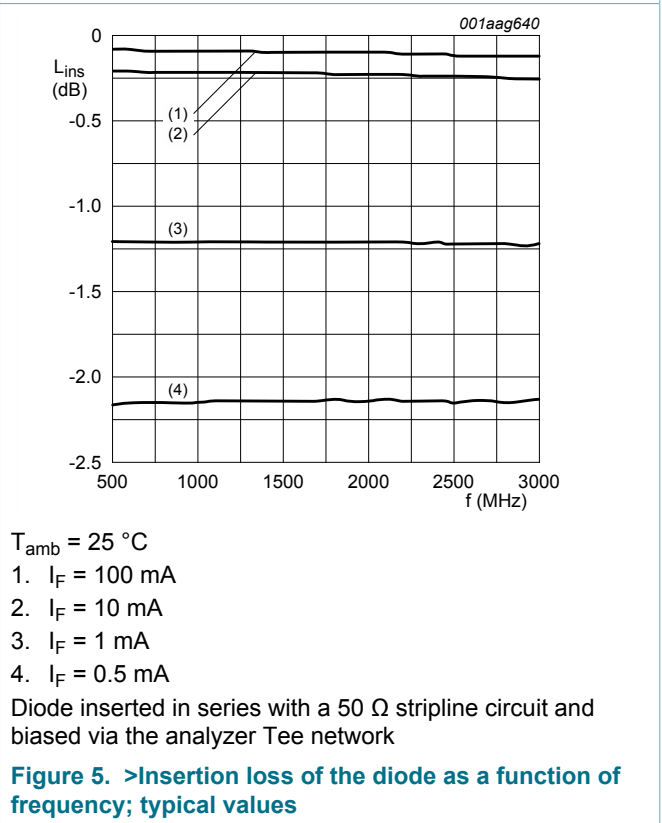
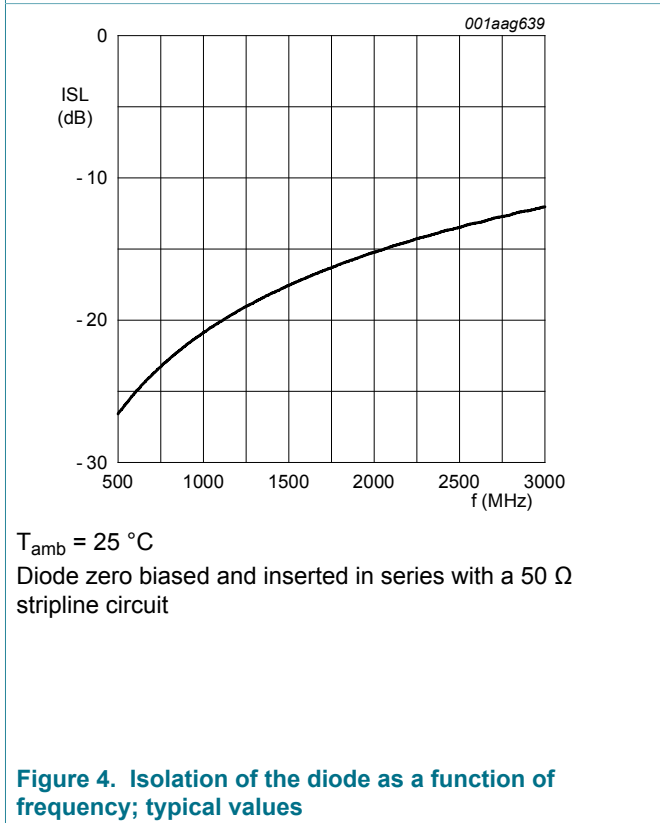
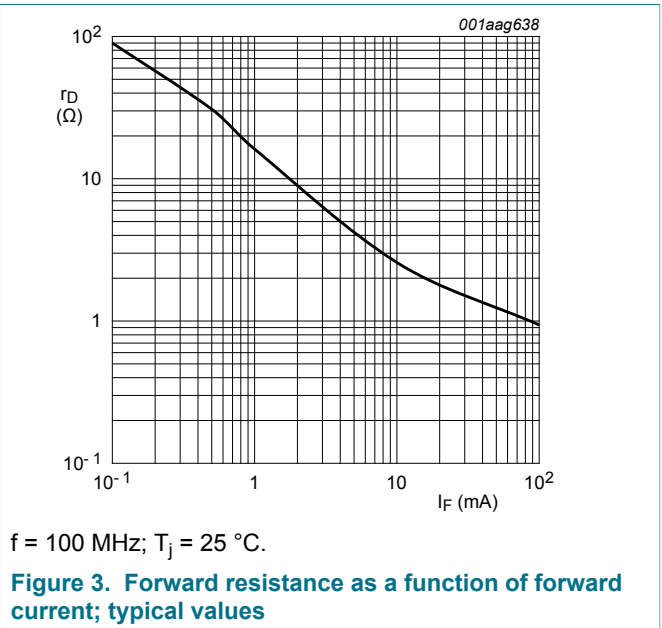
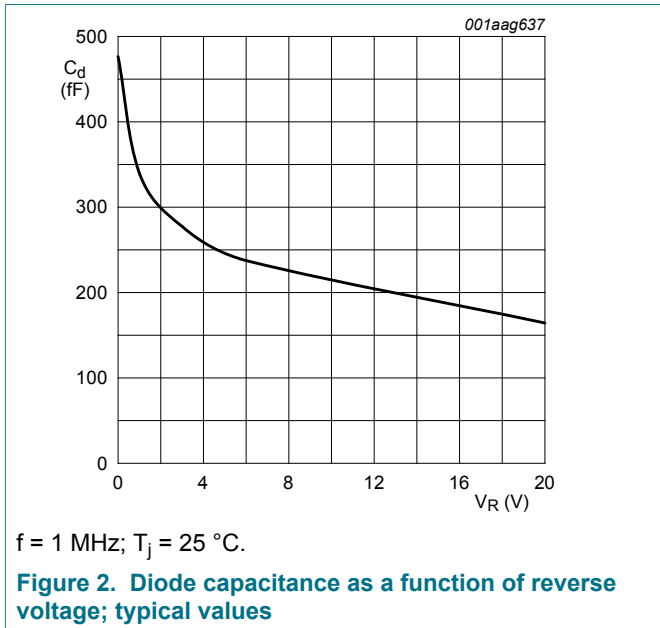
## 7 Characteristics

**Table 6. Characteristics**
 $T_{amb} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified.

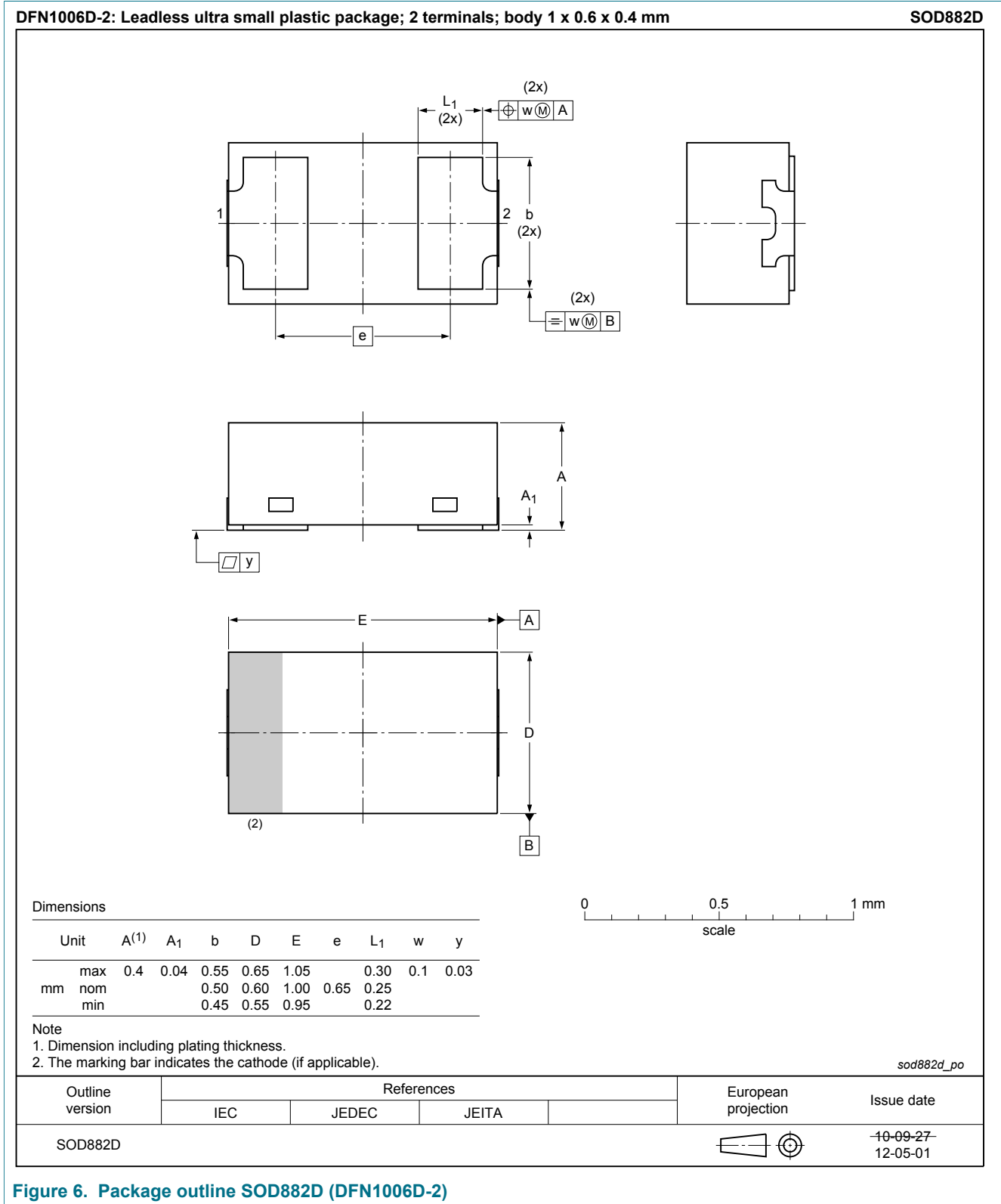
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_F$	forward voltage	$I_F = 100\text{ mA}$	-	0.95	1.1	V
$I_R$	reverse current	$V_R = 60\text{ V}$	-	-	100	nA
$C_d$	diode capacitance	see <a href="#">Figure 2</a> ; $f = 1\text{ MHz}$ ;				
		$V_R = 0\text{ V}$	-	0.48	-	pF
		$V_R = 1\text{ V}$	-	0.34	-	pF
		$V_R = 20\text{ V}$	-	0.17	0.30	pF
$r_D$	diode forward resistance	see <a href="#">Figure 3</a> ; $f = 100\text{ MHz}$ ;				
		$I_F = 0.5\text{ mA}$	-	31	50	$\Omega$
		$I_F = 1\text{ mA}$	-	16	26	$\Omega$
		$I_F = 10\text{ mA}$	-	2.6	4.4	$\Omega$
ISL	isolation	see <a href="#">Figure 4</a> ; $V_R = 0\text{ V}$ ;				
		$f = 900\text{ MHz}$	-	22	-	dB
		$f = 1800\text{ MHz}$	-	16	-	dB
		$f = 2450\text{ MHz}$	-	14	-	dB
$L_{ins}$	insertion loss	see <a href="#">Figure 5</a> ; $I_F = 0.5\text{ mA}$ ;				
		$f = 900\text{ MHz}$	-	2.15	-	dB
		$f = 1800\text{ MHz}$	-	2.13	-	dB
		$f = 2450\text{ MHz}$	-	2.14	-	dB
$L_{ins}$	insertion loss	see <a href="#">Figure 5</a> ; $I_F = 1\text{ mA}$ ;				
		$f = 900\text{ MHz}$	-	1.21	-	dB
		$f = 1800\text{ MHz}$	-	1.21	-	dB
		$f = 2450\text{ MHz}$	-	1.22	-	dB
$L_{ins}$	insertion loss	see <a href="#">Figure 5</a> ; $I_F = 10\text{ mA}$ ;				
		$f = 900\text{ MHz}$	-	0.22	-	dB
		$f = 1800\text{ MHz}$	-	0.23	-	dB
		$f = 2450\text{ MHz}$	-	0.24	-	dB
$L_{ins}$	insertion loss	see <a href="#">Figure 5</a> ; $I_F = 100\text{ mA}$ ;				
		$f = 900\text{ MHz}$	-	0.09	-	dB
		$f = 1800\text{ MHz}$	-	0.1	-	dB
		$f = 2450\text{ MHz}$	-	0.11	-	dB
$T_L$	charge carrier life time	when switched from $I_F = 10\text{ mA}$ to $I_R = 6\text{ mA}$ ; $R_L = 100\text{ }\Omega$ ; measured at $I_R = 3\text{ mA}$	-	1.0	-	$\mu\text{s}$

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$L_S$	series inductance	$I_F = 100 \text{ mA}$ ; $f = 100 \text{ MHz}$	-	0.4	-	nH

**7.1 Graphics**



**8 Package outline**



**Figure 6. Package outline SOD882D (DFN1006D-2)**

## 9 Abbreviations

Table 7. Abbreviations

Acronym	Description
AQL	acceptable quality level
PIN	P-type, intrinsic, N-type
SMD	surface mounted device
S4	special inspection level 4

## 10 Revision history

Table 8. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BAP64LX v.6	20180704	Product data sheet	-	BAP64LX v.5
Modifications:	<ul style="list-style-type: none"> <li>changed max value off <math>V_R</math> at limiting values</li> <li>changed <math>I_R</math> conditions at characteristics</li> <li>adapted the layout of the data sheet</li> </ul>			
BAP64LX v.5	20150512	Product data sheet	-	BAP64LX v.4
Modifications:	<ul style="list-style-type: none"> <li>AEC-Q101 qualified</li> </ul>			
BAP64LX v.4	20140416	Product data sheet	-	BAP64LX v.3
BAP64LX v.3	20140211	Product data sheet	-	BAP64LX v.2
BAP64LX v.2	20130807	Product data sheet	-	BAP64LX v.1
BAP64LX v.1	20070629	Product data sheet	-	-

## 11 Legal information

### 11.1 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".

[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.nxp.com>.

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