



BAP50LX

Silicon PIN diode

Rev. 3 — 26 November 2018

Product data sheet

1 Product profile

1.1 General description

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

1.2 Features and benefits

- Low diode capacitance
- Low diode forward resistance
- For applications up to 3 GHz

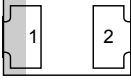

1.3 Applications

- General RF applications



2 Pinning information

Table 1. Discrete pinning

Pin	Description	Simplified outline	Symbol
1	cathode	 <p>Transparent top view</p>	 <i>sym006</i>
2	anode		

3 Ordering information

Table 2. Ordering information

Type number	Package		
	Name	Description	Version
BAP50LX	DFN1006D-2	leadless ultra small plastic package; 2 terminals; body 1 × 0.6 × 0.4 mm	SOD882D

4 Marking

Table 3. Marking code

Type number	Marking code
BAP50LX	1001 0011

4.1 Binary marking code description

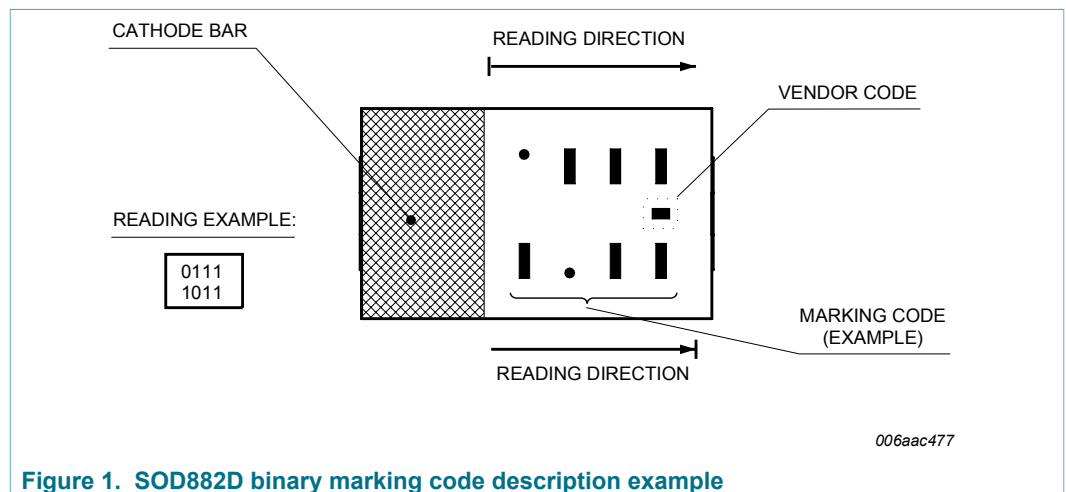


Figure 1. SOD882D binary marking code description example

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	continuous	-	50	V
I_F	forward current	continuous	-	50	mA
P_{tot}	total power dissipation	$T_{sp} \leq 90\text{ °C}$	-	150	mW
T_{stg}	storage temperature		-65	+150	°C
T_j	junction temperature		-65	+150	°C

6 Thermal characteristics

Table 5. Thermal characteristics

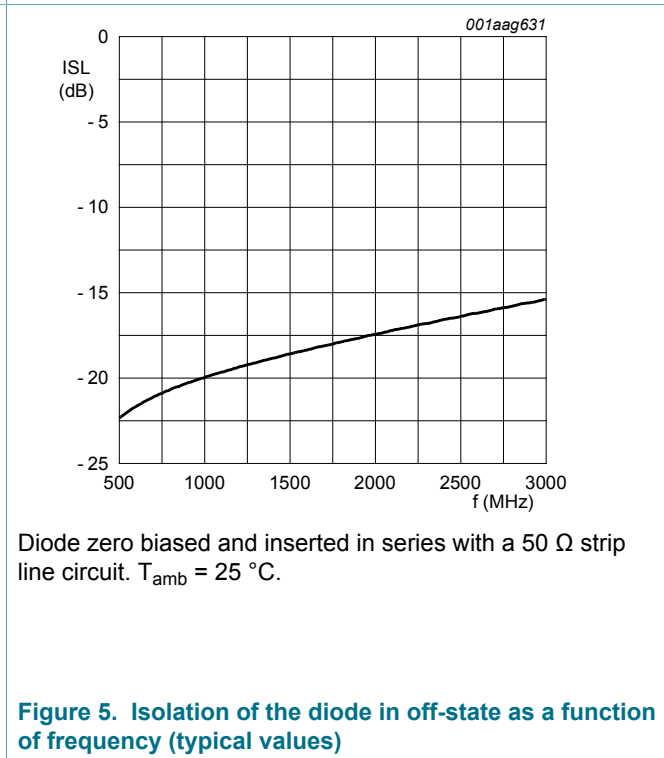
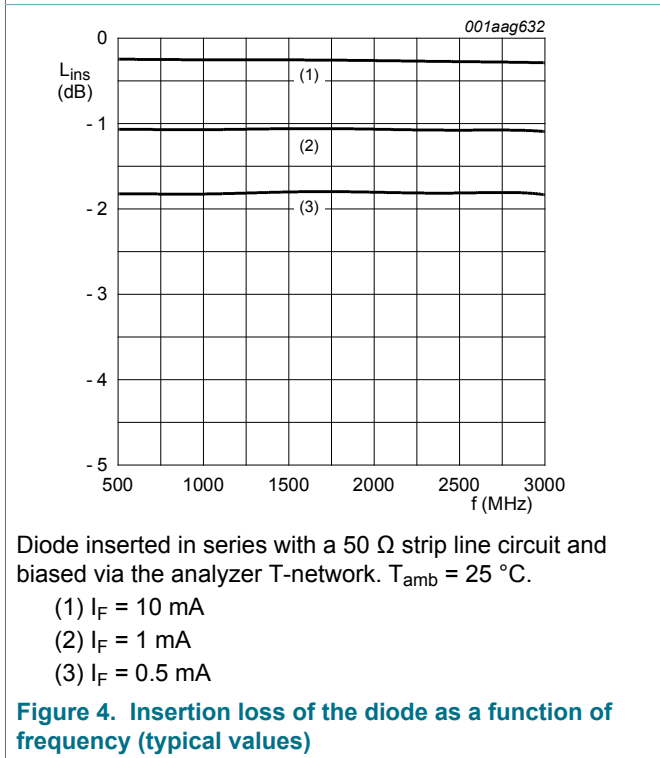
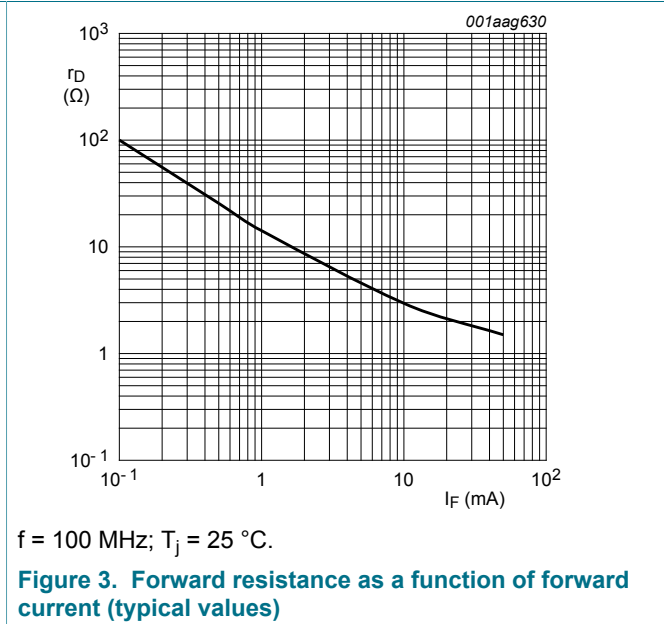
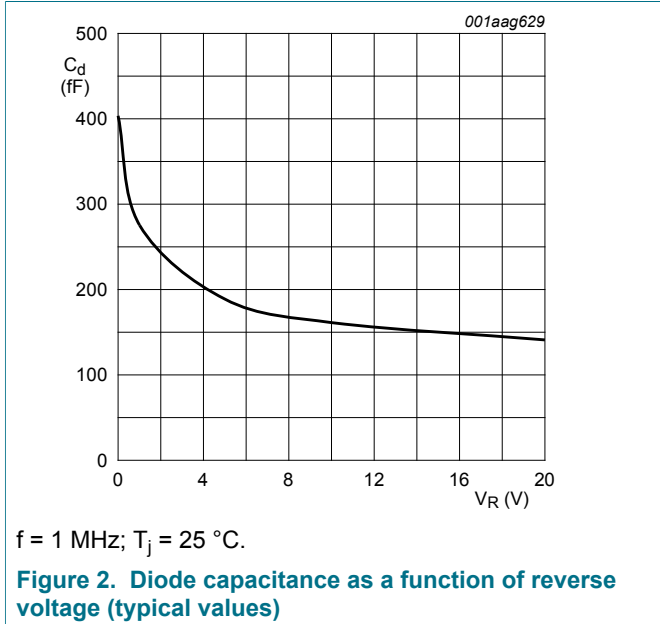
Symbol	Parameter	Conditions	Typ	Unit
$R_{th(j-sp)}$	thermal resistance from junction to solder point		53	K/W

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	$I_F = 50\text{ mA}$	-	0.95	1.1	V
V_R	reverse voltage	$I_R = 10\text{ }\mu\text{A}$	50	-	-	V
I_R	reverse current	$V_R = 50\text{ V}$	-	-	100	nA
C_d	diode capacitance	f = 1 MHz (see Figure 2)				
		$V_R = 0\text{ V}$	-	0.40	-	pF
		$V_R = 1\text{ V}$	-	0.28	0.55	pF
		$V_R = 5\text{ V}$	-	0.19	0.35	pF
r_D	diode forward resistance	f = 100 MHz (see Figure 3)				
		$I_F = 0.5\text{ mA}$	-	26	40	Ω
		$I_F = 1\text{ mA}$	-	14	25	Ω
		$I_F = 10\text{ mA}$	-	3	5	Ω
ISL	isolation	$V_R = 0\text{ V}$ (see Figure 5)				
		f = 900 MHz	-	20.3	-	dB
		f = 1800 MHz	-	17.9	-	dB
		f = 2450 MHz	-	16.5	-	dB
L_{ins}	insertion loss	(See Figure 4)				
		$I_F = 0.5\text{ mA};$				
		f = 900 MHz	-	1.82	-	dB
		f = 1800 MHz	-	1.80	-	dB
		f = 2450 MHz	-	1.81	-	dB
		$I_F = 1\text{ mA};$				
		f = 900 MHz	-	1.07	-	dB
		f = 1800 MHz	-	1.06	-	dB
		f = 2450 MHz	-	1.08	-	dB
		$I_F = 10\text{ mA};$				
		f = 900 MHz	-	0.25	-	dB
		f = 1800 MHz	-	0.26	-	dB
		f = 2450 MHz	-	0.27	-	dB
τ_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	-	μs
L_S	series inductance	$I_F = 100\text{ mA}$; f = 100 MHz	-	0.4	-	nH

8 Graphical data



9 Package outline

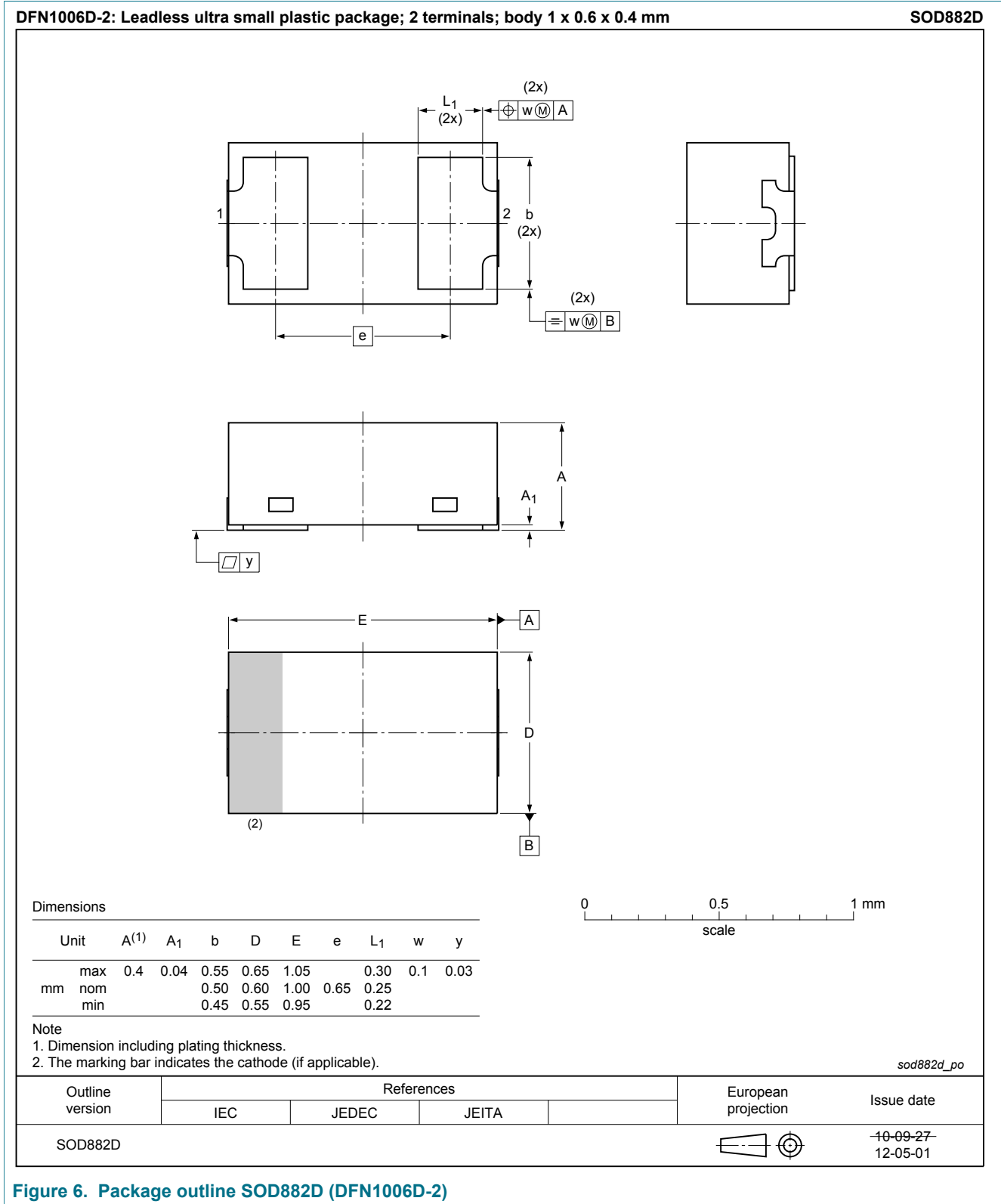


Figure 6. Package outline SOD882D (DFN1006D-2)

10 Abbreviations

Table 7. Abbreviations

Acronym	Description
PIN	P-type, intrinsic, N-type
SMD	surface-mounted device
RF	radio frequency

11 Revision history

Table 8. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BAP50LX v.3	20181126	Product data sheet	-	BAP50LX v.2
Modifications:	<ul style="list-style-type: none">• Section 1.2 "Features and benefits" has been updated.• The "Legal information" pages have been updated.• Crossreferences to graphics are repaired			
BAP50LX v.2	20130807	Product data sheet	-	BAP50LX v.1
BAP50LX v.1	20070717	Product data sheet	-	-

12 Legal information

12.1 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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