



# BAP50-05

Silicon PIN diode

Rev. 3.1 — 8 February 2019

Product data sheet

## 1 Product profile

### 1.1 General description

Two planar PIN diodes in common cathode configuration in a SOT23 small plastic SMD package.

### 1.2 Features and benefits

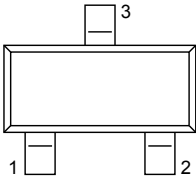
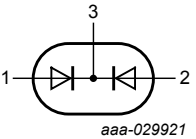
- Two elements in common cathode configuration in a small-sized plastic SMD package
- Low diode capacitance
- Low diode forward resistance

### 1.3 Applications

- General RF application

## 2 Pinning information

Table 1. Discrete pinning

Pin	Description	Simplified outline	Graphic symbol
1	anode	 Top view	 aaa-029921
2	anode		
3	common cathode		

### 3 Ordering information

Table 2. Ordering information

Type number	Package		Version
	Name	Description	
BAP50-05	-	plastic surface-mounted package; 3 leads	SOT023

### 4 Marking

Table 3. Marking code

Type number	Marking code
BAP50-05	1C%

### 5 Limiting values

Table 4. Limiting values

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

Symbol	Parameter	Conditions	Min	Max	Unit
$V_R$	continuous reverse voltage		-	50	V
$I_F$	continuous forward current		-	50	mA
$P_{tot}$	total power dissipation	$T_{sp} \leq 90\text{ °C}$	-	250	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		220	K/W

## 7 Characteristics

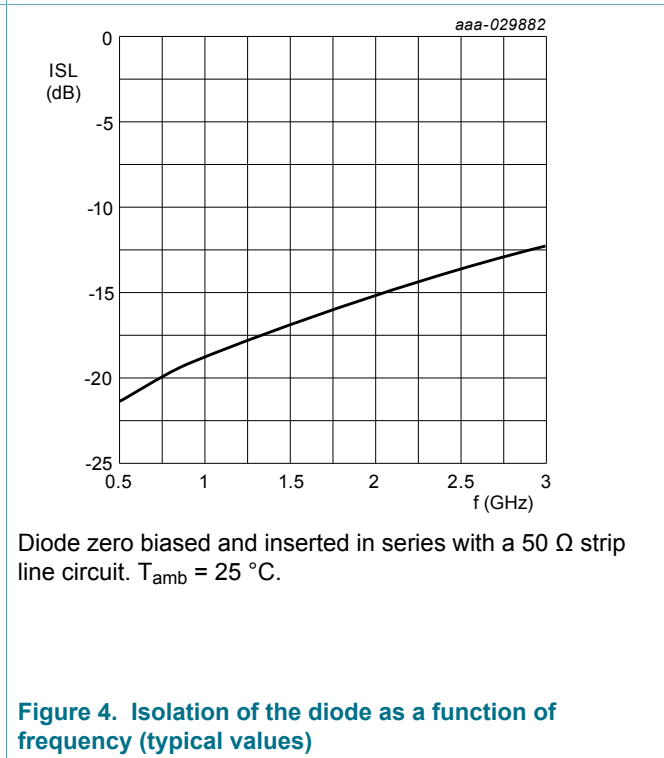
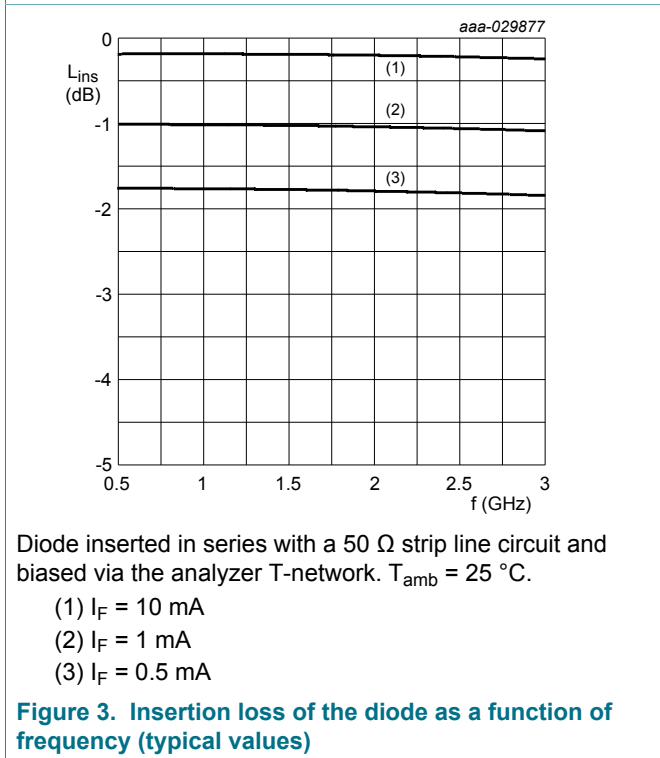
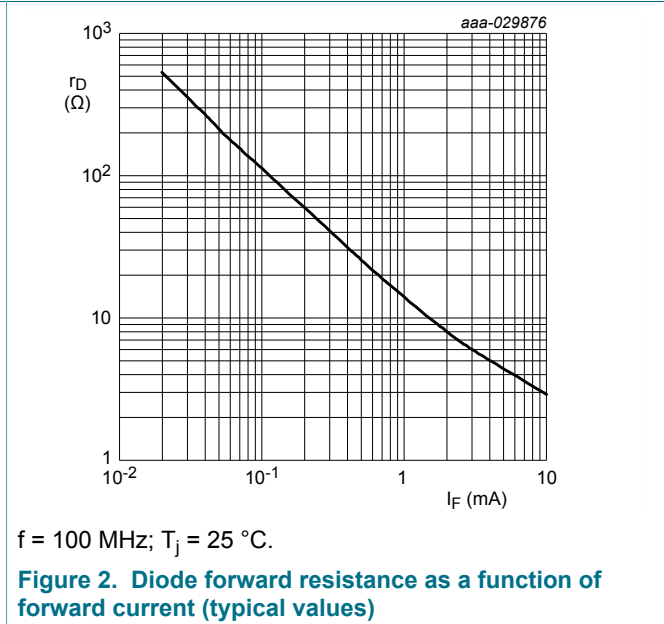
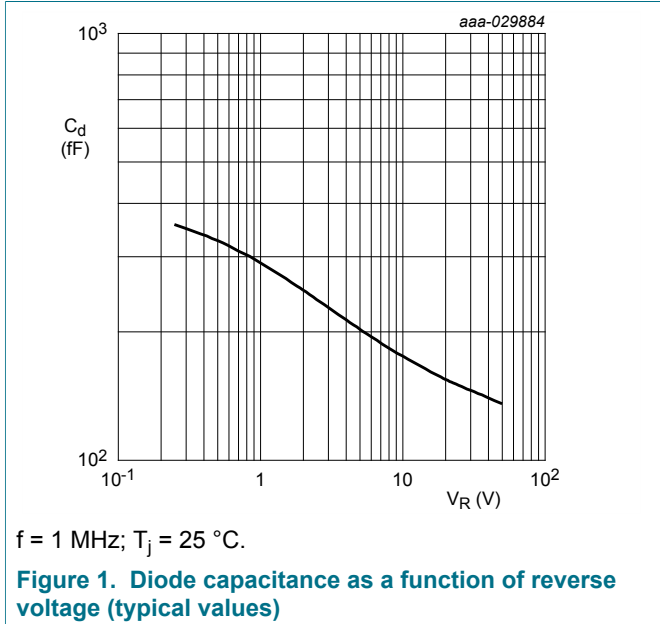
**Table 6. Characteristics**

$T_j = 25\text{ °C}$  unless otherwise specified.

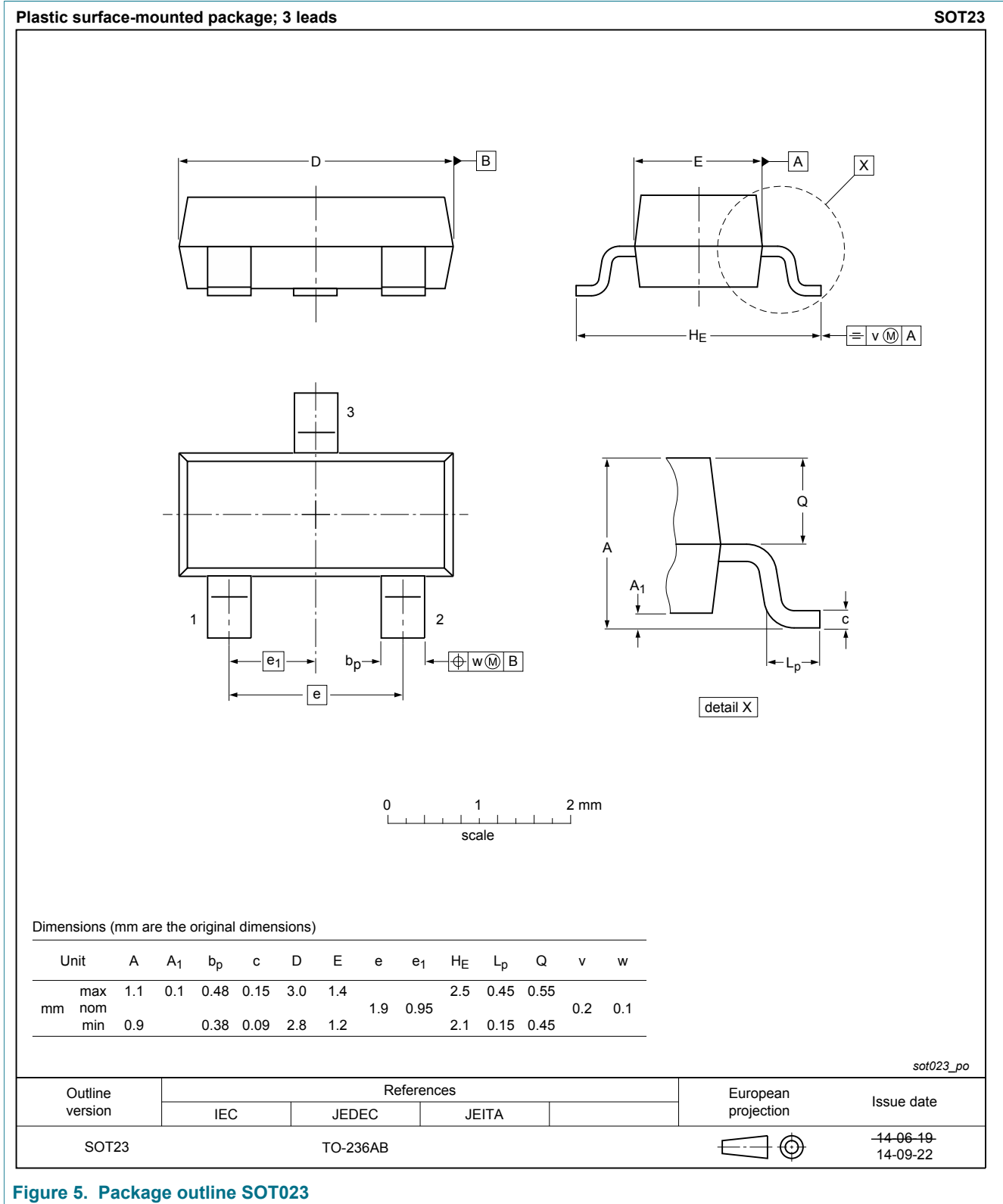
Symbol	Parameter	Conditions	Min	Typ	Max	Unit	
$V_F$	forward voltage	$I_F = 50\text{ mA}$	-	0.95	1.1	V	
$V_R$	reverse voltage	$I_R = 10\text{ }\mu\text{A}$	50	-	-	V	
$I_R$	reverse current	$V_R = 50\text{ V}$	-	-	100	nA	
$C_d$	diode capacitance	f = 1 MHz (see <a href="#">Figure 1</a> )					
		$V_R = 0\text{ V}$	-	0.45	-	pF	
		$V_R = 1\text{ V}$	-	0.35	0.6	pF	
		$V_R = 5\text{ V}$	-	0.3	0.5	pF	
$r_D$	diode forward resistance	f = 100 MHz (see <a href="#">Figure 2</a> )					
		$I_F = 0.5\text{ mA}$	[1]	-	25	40	$\Omega$
		$I_F = 1\text{ mA}$	[1]	-	14	25	$\Omega$
		$I_F = 10\text{ mA}$	[1]	-	3	5	$\Omega$

[1] Guaranteed on AQL basis: inspection level S4, AQL 1.0.

**8 Graphical data**



**9 Package outline**



**Figure 5. Package outline SOT023**

## 10 Abbreviations

Table 7. Abbreviations

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

## 11 Revision history

Table 8. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BAP50-05 v.3.1	20190208	Product data sheet	-	BAP50-05 v.3
Modifications:	<ul style="list-style-type: none"> <li>aligned the title of the data sheet with the description on the Internet</li> </ul>			
BAP50-05 v.3	20181126	Product data sheet	-	BAP50-05 v.2.1
Modifications:	<ul style="list-style-type: none"> <li><a href="#">Section 1.2</a> "Features and benefits" has been updated.</li> <li>The "Legal information" pages have been updated.</li> </ul>			
BAP50-05 v .2.1	19990510	Product data sheet	-	BAP50-05 v.1

## 12 Legal information

### 12.1 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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