



**THE DATASHEET OF
BAP64-06W,115**





BAP64-06W

Silicon PIN diode

Rev. 3.2 — 12 February 2019

Product data sheet

1 Product profile

1.1 General description

Two planar PIN diodes in common anode configuration in a SOT323 small SMD plastic package.

1.2 Features and benefits

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

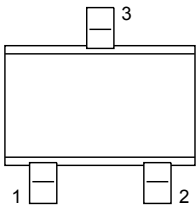
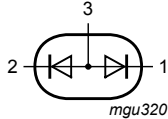
1.3 Applications

- RF attenuators and switches



2 Pinning information

Table 1. Discrete pinning

Pin	Description	Simplified outline	Graphic symbol
1	cathode 1	 <p>Top view</p>	
2	cathode 2		
3	common connection		

3 Ordering information

Table 2. Ordering information

Type number	Package		
	Name	Description	Version
BAP64-06W	-	plastic surface-mounted package; 3 leads	SOT323

4 Marking

Table 3. Marking code

Type number	Marking code
BAP64-06W	V4%

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		-	100	V
I_F	continuous forward current		-	100	mA
P_{tot}	total power dissipation	$T_{sp} \leq 90\text{ °C}$	-	240	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		250	K/W

7 Characteristics

Table 6. Characteristics

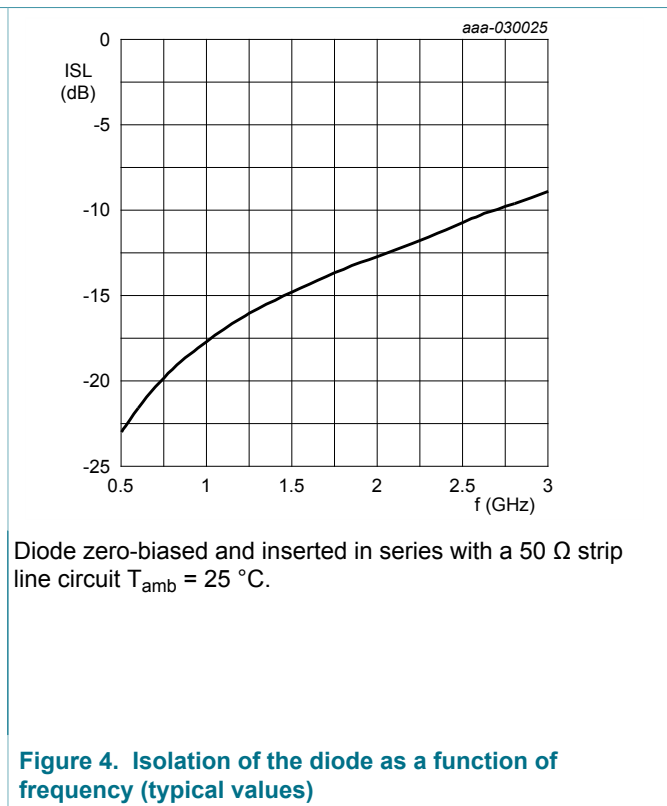
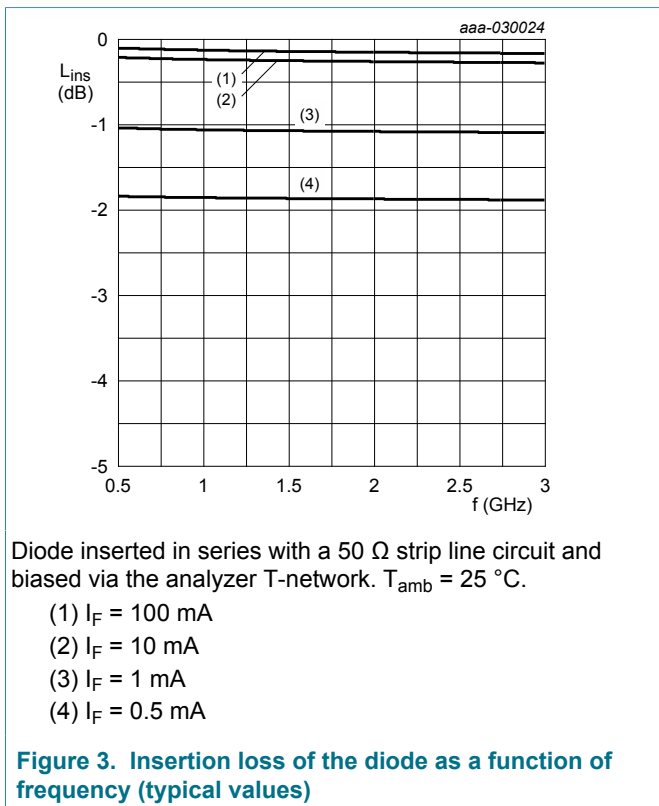
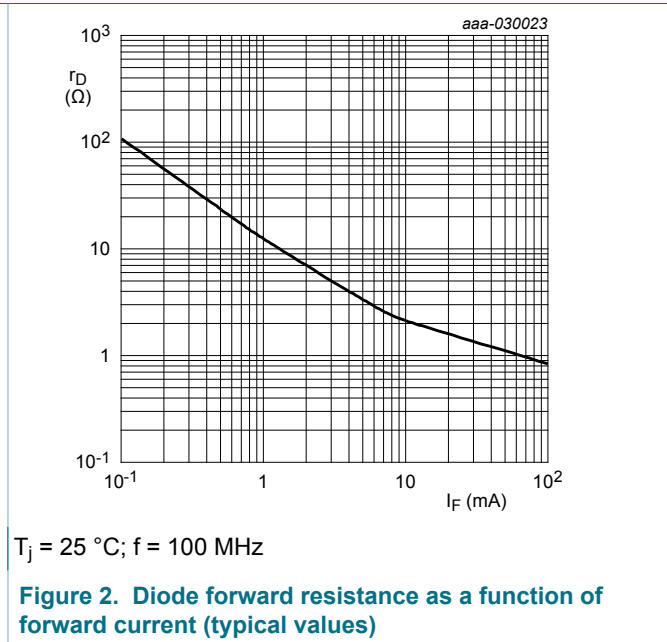
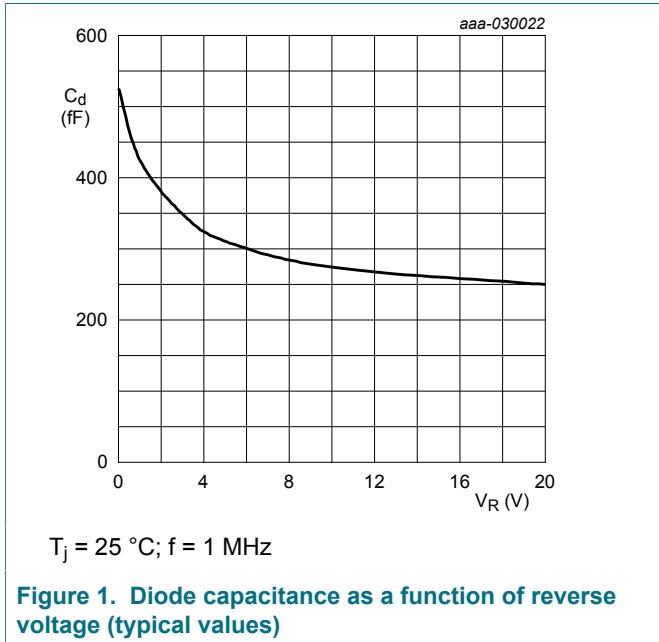
$T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified.

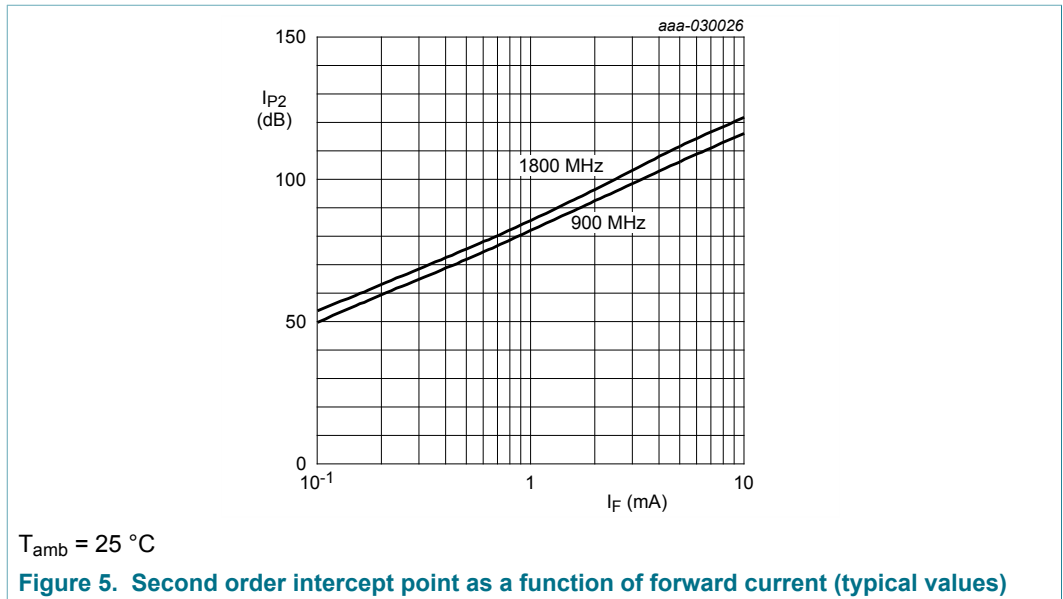
Symbol	Parameter	Conditions	Min	Typ	Max	Unit	
V_F	forward voltage	$I_F = 50\text{ mA}$	-	0.95	1.1	V	
I_R	reverse current	$V_R = 60\text{ V}$	-	-	10	μA	
		$V_R = 20\text{ V}$	-	-	1	μA	
C_d	diode capacitance	f = 1 MHz (see Figure 1)					
		$V_R = 0\text{ V}$	-	0.52	-	pF	
		$V_R = 1\text{ V}$	-	0.37	-	pF	
		$V_R = 20\text{ V}$	-	0.23	0.35	pF	
r_D	diode forward resistance	f = 100 MHz (see Figure 2)					
		$I_F = 0.5\text{ mA}$	[1]	-	20	40	Ω
		$I_F = 1\text{ mA}$	[1]	-	10	20	Ω
		$I_F = 10\text{ mA}$	[1]	-	2	3.8	Ω
		$I_F = 100\text{ mA}$	[1]	-	0.7	1.35	Ω
ISL	isolation	$V_R = 0\text{ V}$ (see Figure 4)					
		f = 900 MHz	-	18.5	-	dB	
		f = 1800 MHz	-	13.5	-	dB	
		f = 2450 MHz	-	10.9	-	dB	
L_{ins}	insertion loss	$I_F = 0.5\text{ mA}$ (See Figure 3).					
		f = 900 MHz	-	1.86	-	dB	
		f = 1800 MHz	-	2.06	-	dB	
		f = 2450 MHz	-	2.23	-	dB	
		$I_F = 1\text{ mA}$					
		f = 900 MHz	-	1.01	-	dB	
		f = 1800 MHz	-	1.06	-	dB	
		f = 2450 MHz	-	1.10	-	dB	
		$I_F = 10\text{ mA}$					
		f = 900 MHz	-	0.19	-	dB	
		f = 1800 MHz	-	0.21	-	dB	
		f = 2450 MHz	-	0.27	-	dB	
		L_{ins}	insertion loss	$I_F = 100\text{ mA}$			
f = 900 MHz	-			0.08	-	dB	
f = 1800 MHz	-			0.10	-	dB	
f = 2450 MHz	-			0.16	-	dB	

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
τ_L	charge carrier life time	when switched from $I_F = 10$ mA to $I_R = 6$ mA; $R_L = 100 \Omega$; measured at $I_R = 3$ mA	-	1.55	-	μ s
L_S	series inductance	$I_F = 100$ mA; $f = 100$ MHz	-	1.6	-	nH

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

8 Graphical data





9 Package outline

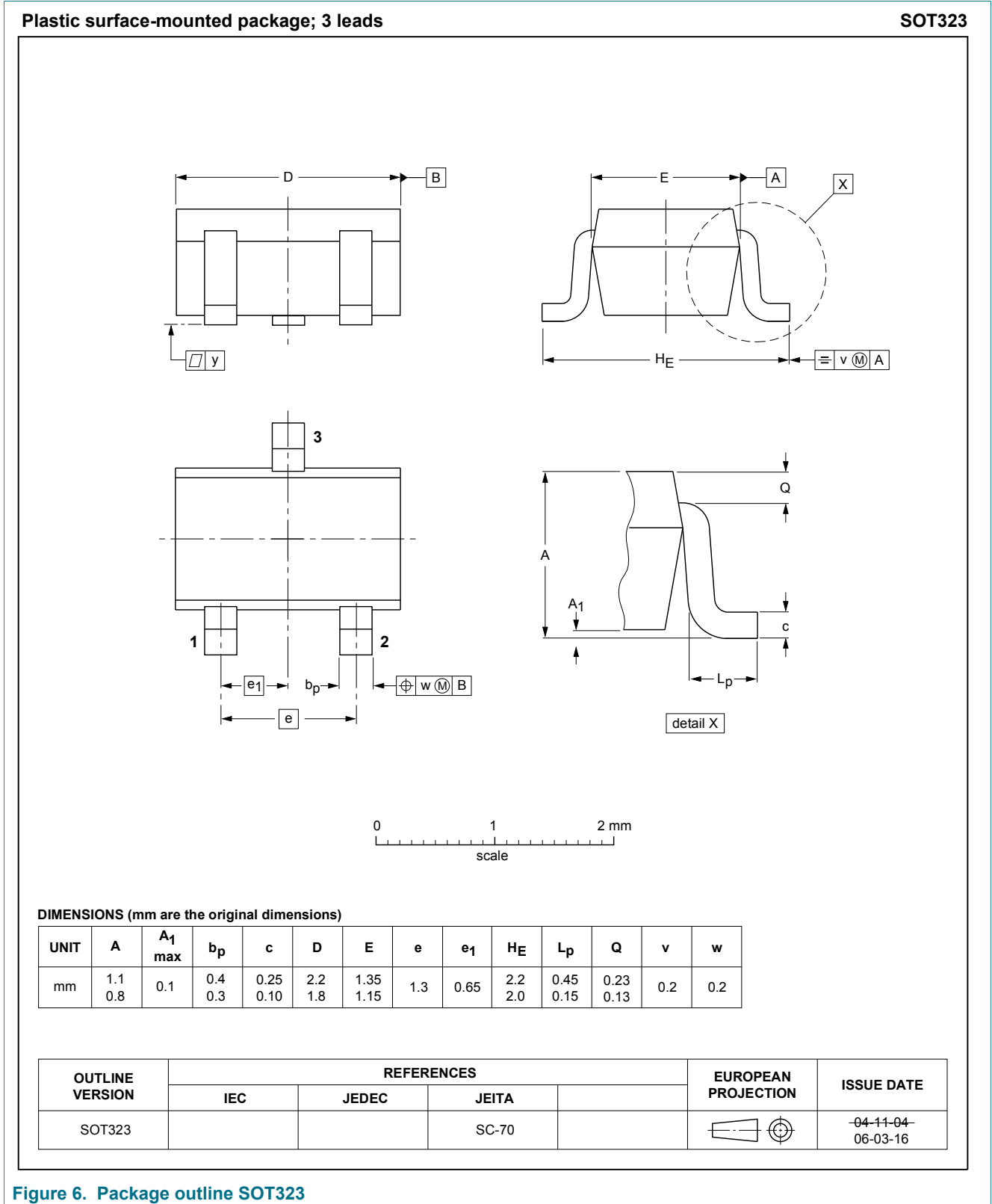


Figure 6. Package outline SOT323

10 Revision history

Table 7. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BAP64-06W v.3.2	20190212	Product data sheet	-	BAP64-06W v.3.1
Modifications:	<ul style="list-style-type: none"> aligned the last graphic with the look and feel of the other graphics 			
BAP64-06W v.3.1	20190201	Product data sheet	-	BAP64-06W v.3
Modifications:	<ul style="list-style-type: none"> changed condition for reverse current for V_R from 100 V to 60 V 			
BAP64-06W v.3	20181211	Product data sheet	-	BAP64-06W 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. 			
BAP64-06W v.2	20010417	Product data sheet	-	BAP64-06W v.1

11 Legal information

11.1 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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