



# BZX884S series

## Voltage regulator diodes

Rev. 1 — 13 July 2020

Product data sheet

## 1. General description

General-purpose Zener diodes in an ultra small SOD882BD (DFN1006BD-2) leadless SurfaceMounted Device (SMD) plastic package with side-wettable flanks.

## 2. Features and benefits

- Leadless ultra small plastic package with side-wettable flanks suitable for surface-mounted design
- Two tolerance series:  $\pm 2\%$  and approximately  $\pm 5\%$
- Wide working voltage range: nominal 2.4 V to 6V8 (E24 range)
- AEC-Q101 qualified

## 3. Applications

- General regulation functions

## 4. Quick reference data

Table 1. Quick reference data

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_F$	forward voltage	$I_F = 10\text{ mA}$ [1]	-	-	0.9	V
$P_{tot}$	total power dissipation	[2]	-	-	365	mW

[1] Pulse test:  $t_p \leq 100\text{ }\mu\text{s}$ ;  $\delta \leq 0.02$

[2] Device mounted on a FR4 PCB, single-sided 70  $\mu\text{m}$  copper, tin-plated and standard footprint.

## 5. Pinning information

Table 2. Pinning

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	K	cathode [1]	 Transparent top view	 006aaa152
2	A	anode		

[1] The marking bar indicates the cathode.

## 6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BZX884S series [1]	DFN1006BD-2	Leadless ultra small plastic package with side-wettable flanks (SWF); 2 terminals; 0.65 mm pitch; 1 mm x 0.6 mm x 0.47 mm body	SOD882BD

[1] The series includes 12 breakdown voltages with nominal working voltages from 2.4 V to 6V8 and  $\pm 2\%$  and approximately  $\pm 5\%$  tolerances.

## 7. Marking

Table 4. Marking Codes

Type number	Mark. Code	Type number	Mark. Code
BZX884S-B2V4	2A	BZX884S-C2V4	4K
BZX884S-B2V7	2B	BZX884S-C2V7	4L
BZX884S-B3V0	2C	BZX884S-C3V0	4R
BZX884S-B3V3	2D	BZX884S-C3V3	4S
BZX884S-B3V6	2E	BZX884S-C3V6	4T
BZX884S-B3V9	2F	BZX884S-C3V9	4U
BZX884S-B4V3	2G	BZX884S-C4V3	4U
BZX884S-B4V7	2H	BZX884S-C4V7	4Y
BZX884S-B5V1	2J	BZX884S-C5V1	5B
BZX884S-B5V6	2K	BZX884S-C5V6	5C
BZX884S-B6V2	2L	BZX884S-C6V2	5F
BZX884S-B6V8	N3	BZX884S-C6V8	5G

## 8. Limiting values

**Table 5. Limiting values**

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

Symbol	Parameter	Conditions	Min	Max	Unit
$I_F$	forward current		-	200	mA
$P_{tot}$	total power dissipation	$T_{amb} = 25\text{ °C}$	[1]	365	mW
$T_j$	junction temperature		-	150	°C
$T_{amb}$	ambient temperature		-55	+150	°C
$T_{stg}$	storage temperature		-65	+150	°C

[1] Device mounted on a FR4 PCB, single-sided 70 µm copper, tin-plated and standard footprint.

## 9. Thermal characteristics

**Table 6. Thermal characteristics**

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air	[1]	-	340	K/W

[1] Device mounted on a FR4 PCB, single-sided 70 µm copper, tin-plated and standard footprint.

## 10. Characteristics

**Table 7. Characteristics**

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_F$	forward voltage	$I_F = 10\text{ mA}$	[1]	-	0.9	V

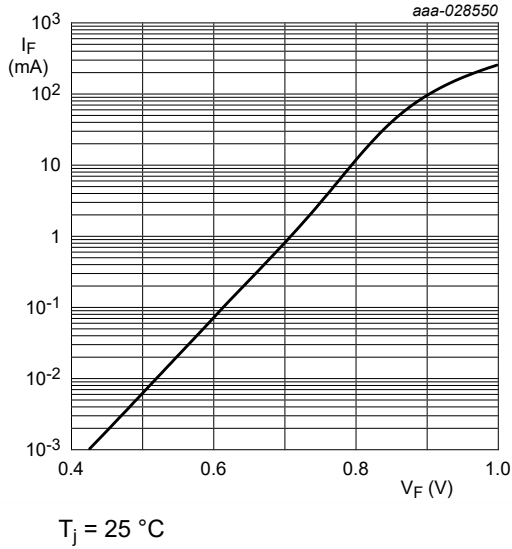
[1] Pulse test:  $t_p \leq 300\text{ }\mu\text{s}$ ;  $\delta \leq 0.02$ .

Table 8. Characteristics per type; BZX884S-B2V4 to BZX884S-C6V8

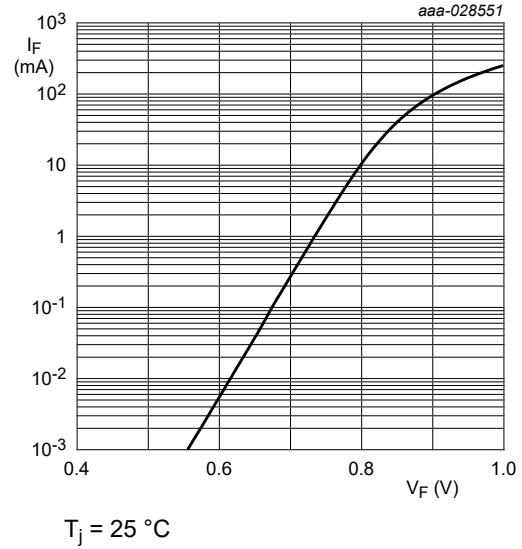
 $T_j = 25\text{ °C}$  unless otherwise specified.

BZX884S	Sel	Working voltage $V_Z$ (V)		Differential resistance $r_{dif}$ ( $\Omega$ )				Reverse current $I_R$ ( $\mu\text{A}$ )		Temperature coefficient $S_Z$ (mV/K)		Diode capacitance $C_d$ (pF) [1]
		$I_Z = 5\text{ mA}$		$I_Z = 1\text{ mA}$		$I_Z = 5\text{ mA}$		Max	$V_R$ (V)	$I_Z = 5\text{ mA}$		
		Min	Max	Typ	Max	Typ	Max			Min	Max	
2V4	B	2.35	2.45	275	600	70	100	50	1.0	-3.5	0.0	450
	C	2.20	2.60									
2V7	B	2.65	2.75	300	600	75	100	20	1.0	-3.5	0.0	450
	C	2.50	2.90									
3V0	B	2.94	3.06	325	600	80	95	10	1.0	-3.5	0.0	450
	C	2.80	3.20									
3V3	B	3.23	3.37	350	600	85	95	5	1.0	-3.5	0.0	450
	C	3.10	3.50									
3V6	B	3.53	3.67	375	600	85	90	5	1.0	-3.5	0.0	450
	C	3.40	3.80									
3V9	B	3.82	3.98	400	600	85	90	3	1.0	-3.5	0.0	450
	C	3.70	4.10									
4V3	B	4.21	4.39	410	600	80	90	3	1.0	-3.5	0.0	450
	C	4.00	4.60									
4V7	B	4.61	4.79	425	500	50	80	3	2.0	-3.5	0.2	300
	C	4.40	5.00									
5V1	B	5.00	5.20	400	480	40	60	2	2.0	-2.7	1.2	300
	C	4.80	5.40									
5V6	B	5.49	5.71	80	400	15	40	1	2.0	-2.0	2.5	300
	C	5.20	6.00									
6V2	B	6.08	6.32	40	150	6	10	3	4.0	0.4	3.7	200
	C	5.80	6.60									
6V8	B	6.66	6.94	30	80	6	15	2	4.0	1.2	4.5	200
	C	6.40	7.20									

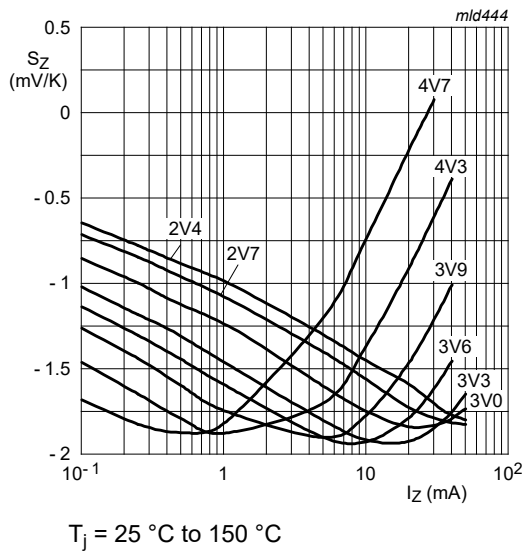
[1]  $f = 1\text{ MHz}$ ;  $V_R = 0\text{ V}$



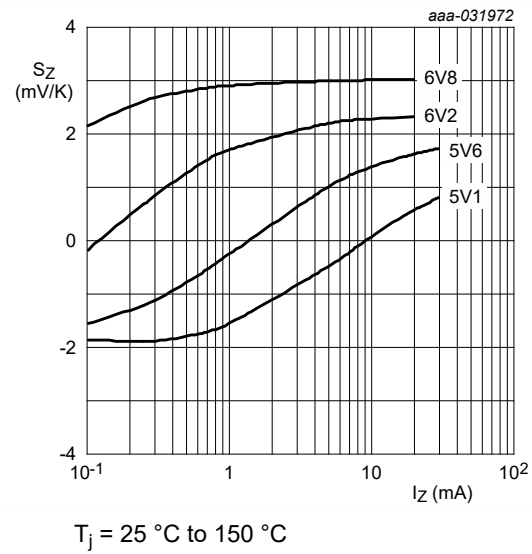
**Fig. 1.** Forward current as a function of forward voltage; typical values (BZX884S-B/C2V4)



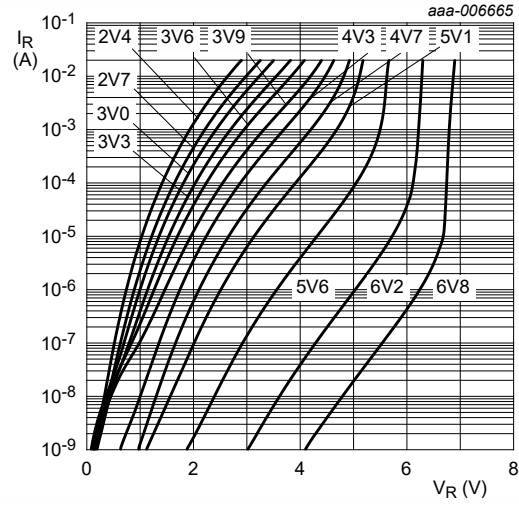
**Fig. 2.** Forward current as a function of forward voltage; typical values (BZX884S-B/C6V8)



**Fig. 3.** Temperature coefficient as a function of working current; typical values (BZX884S-B/C2V4 to B/C4V7)



**Fig. 4.** Temperature coefficient as a function of working current; typical values (BZX884S-B/C5V1 to B/C6V8)



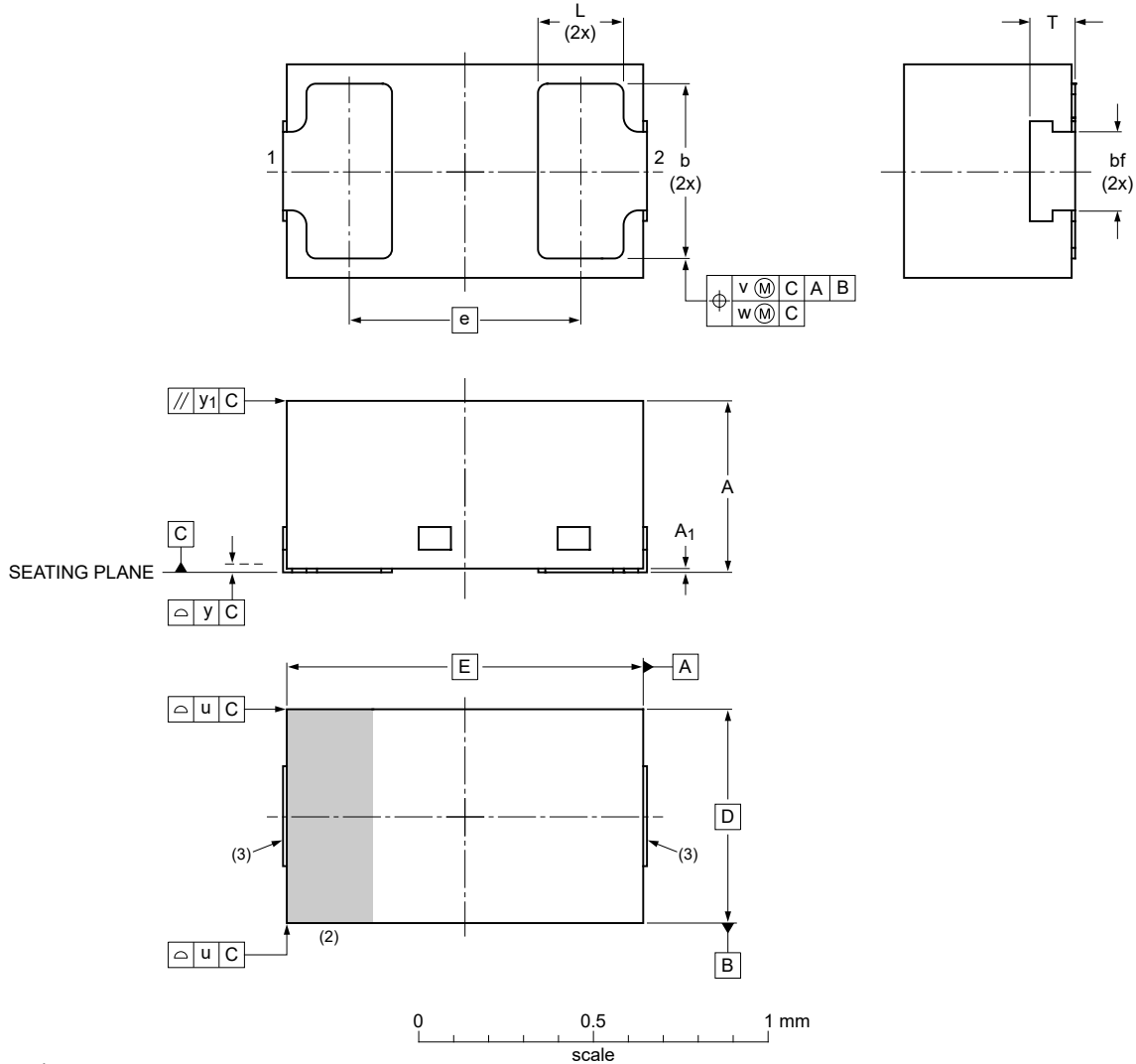
$T_j = 25\text{ }^\circ\text{C}$

**Fig. 5. Reverse current as a function of reverse voltage; typical values (BZX884S-B/C2V4 to BZX884S-B/C6V8)**

11. Package outline

DFN1006BD-2 Leadless ultra small plastic package with side-wettable flanks (SWF); 2 terminals; 0.65 mm pitch; 1 mm x 0.6 mm x 0.47 mm body

SOD882BD



Dimensions

Unit	A <sup>(1)</sup>	A <sub>1</sub>	bf <sup>(1)</sup>	b	D	E	e	L	T <sup>(1)</sup>	u	v	w	y	y <sub>1</sub>
mm	max 0.50	0.04		0.55				0.30	0.22					
	nom 0.47			0.50	0.60	1.00	0.65	0.25	0.16	0.05	0.10	0.05	0.05	0.05
	min 0.44		0.20	0.45				0.22	0.10					

Note

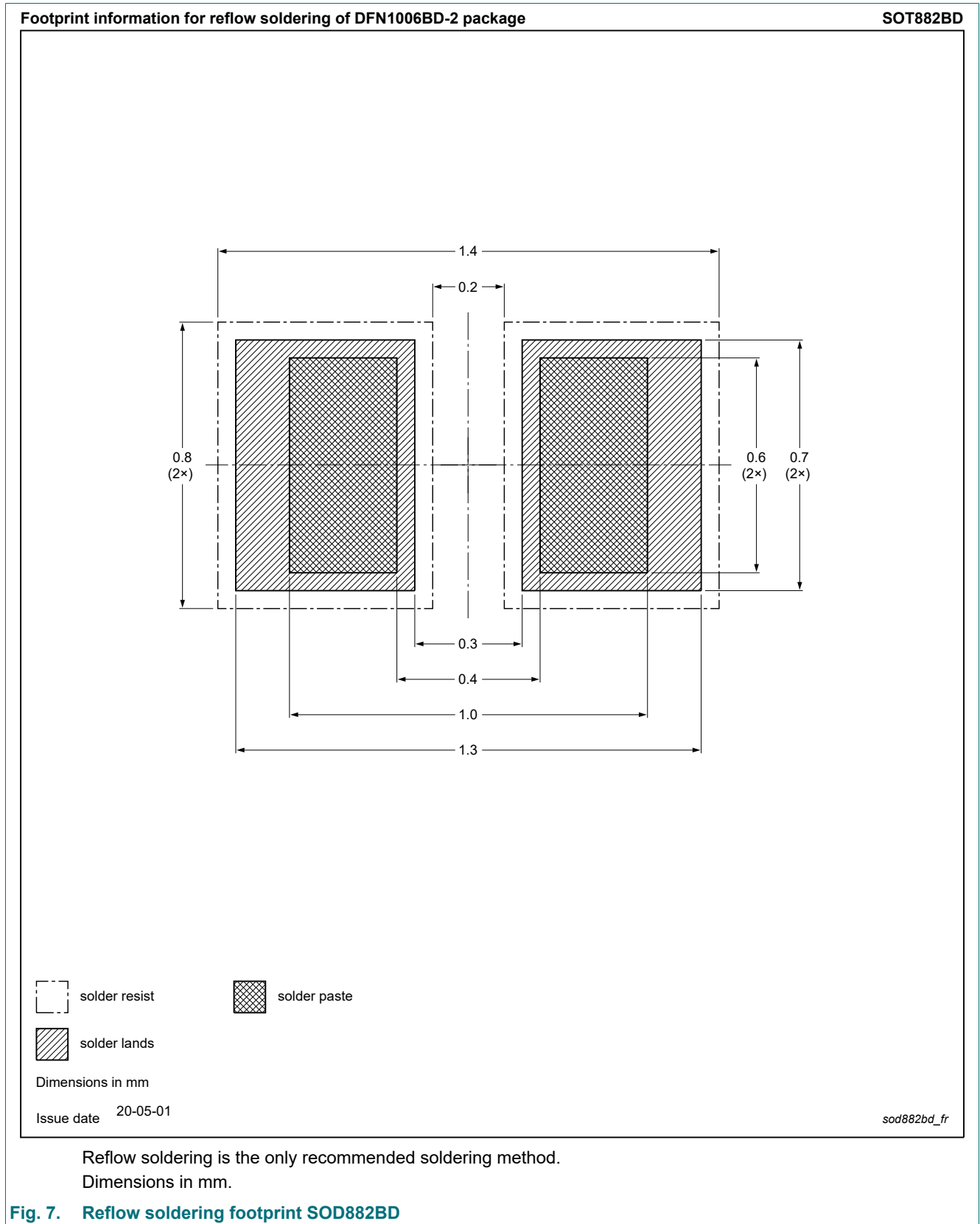
1. Dimension including plating thickness.
2. The marking bar indicates the cathode.
3. Solderable lead end, protrusion max. 0.02 mm.

sod882bd\_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	JEITA			
SOD882BD		MO-343AA				20-06-22 20-06-23

Fig. 6. Package outline SOD882BD

## 12. Soldering



## 13. Revision history

Table 9. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BZX884S_SER v.1	20200713	Product data sheet	-	-

## 14. Legal information

### 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.
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