



BAT32ALS

General-purpose Schottky diode

4 August 2022

Product data sheet

1. General description

General-purpose Schottky diode in an ultra small DFN1006BD-2 (SOD882BD) leadless Surface-Mounted Device (SMD) plastic package with side-wettable flanks.

2. Features and benefits

- Forward current: $I_F \leq 0.2$ A
- Reverse voltage: $V_R \leq 30$ V
- Ultra small SMD plastic package
- Low forward voltage
- Suitable for Automatic Optical Inspection (AOI) of solder joint

3. Applications

- Ultra high-speed switching
- Voltage clamping
- Protection circuits
- Low voltage rectification
- High efficiency DC-to-DC conversion
- Low power consumption applications

4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
I_F	forward current		-	-	200	mA
V_R	reverse voltage		-	-	30	V
V_F	forward voltage	$I_F = 200$ mA; $t_p \leq 300$ μ s; $\delta \leq 0.02$; $T_{amb} = 25$ °C	-	-	480	mV

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	K	cathode[1]	<p>Transparent top view DFN1006BD-2 (SOD882BD)</p>	<p>sym001</p>
2	A	anode		

[1] The marking bar indicates the cathode.

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BAT32ALS	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

7. Marking

Table 4. Marking codes

Type number	Marking code
BAT32ALS	9B

8. Limiting values

Table 5. Limiting values

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

Symbol	Parameter	Conditions		Min	Max	Unit
V_R	reverse voltage			-	30	V
I_F	forward current			-	200	mA
I_{FRM}	repetitive peak forward current	$t_p \leq 1$ ms; $\delta \leq 0.25$		-	1	A
I_{FSM}	non-repetitive peak forward current	$t_p = 8$ ms; square wave		-	3	A
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C	[1]	-	335	mW
			[2]	-	610	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 an FR4 Printed-Circuit Board (PCB), 70 µm single-sided copper, tin-plated and standard footprint.

[2] Device mounted on an FR4 PCB, 70 µm single-sided copper, tin-plated, mounting pad for cathode 1 cm².

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] [2]	-	-	375	K/W
			[3]	-	-	205	K/W

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

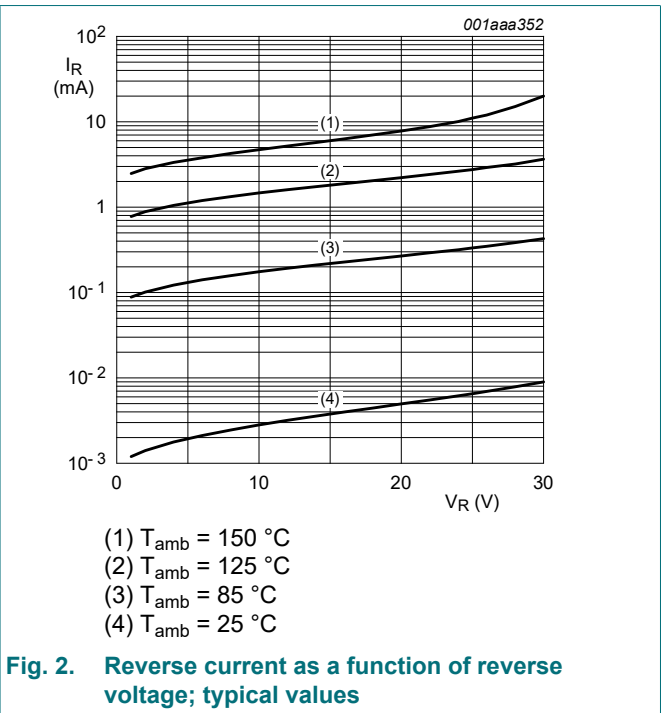
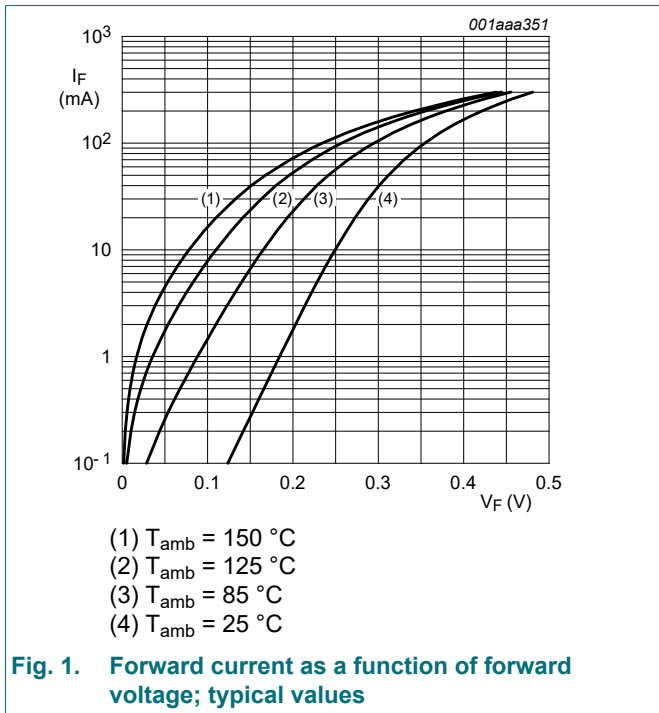
[2] For Schottky barrier diodes thermal runaway has to be considered, as in some applications the reverse power losses P_R are a significant part of the total power losses.

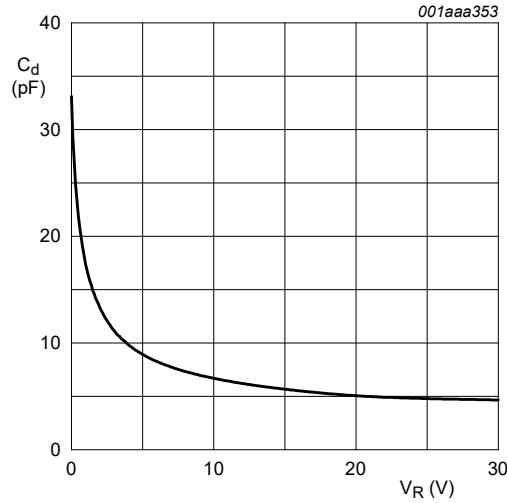
[3] Device mounted on an FR4 PCB, 70 µm single-sided copper, tin-plated, mounting pad for cathode 1 cm².

10. Characteristics

Table 7. Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_F	forward voltage	$I_F = 0.1 \text{ mA}$; $t_p \leq 300 \mu\text{s}$; $\delta \leq 0.02$; pulsed; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$	-	-	190	mV
		$I_F = 1 \text{ mA}$; $t_p \leq 300 \mu\text{s}$; $\delta \leq 0.02$; pulsed; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$	-	-	250	mV
		$I_F = 10 \text{ mA}$; $t_p \leq 300 \mu\text{s}$; $\delta \leq 0.02$; pulsed; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$	-	-	300	mV
		$I_F = 100 \text{ mA}$; $t_p \leq 300 \mu\text{s}$; $\delta \leq 0.02$; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$	-	-	400	mV
		$I_F = 200 \text{ mA}$; $t_p \leq 300 \mu\text{s}$; $\delta \leq 0.02$; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$	-	-	480	mV
I_R	reverse current	$V_R = 10 \text{ V}$; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$	-	-	10	μA
		$V_R = 30 \text{ V}$; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$	-	-	50	μA
C_d	diode capacitance	$V_R = 1 \text{ V}$; $f = 1 \text{ MHz}$; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$	-	-	25	pF





f = 1 MHz; T_{amb} = 25 °C

Fig. 3. Diode capacitance as a function of reverse voltage; typical values

11. Package outline

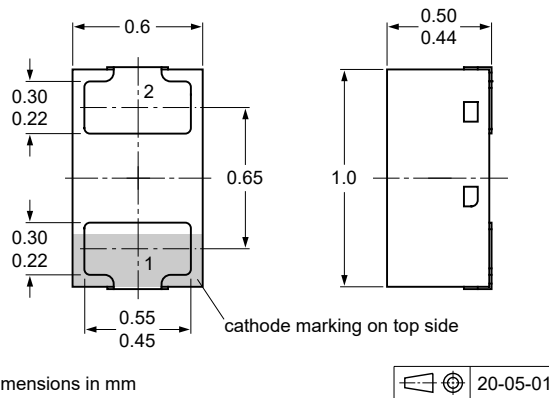


Fig. 4. Package outline DFN1006BD-2 (SOD882BD)

12. Soldering

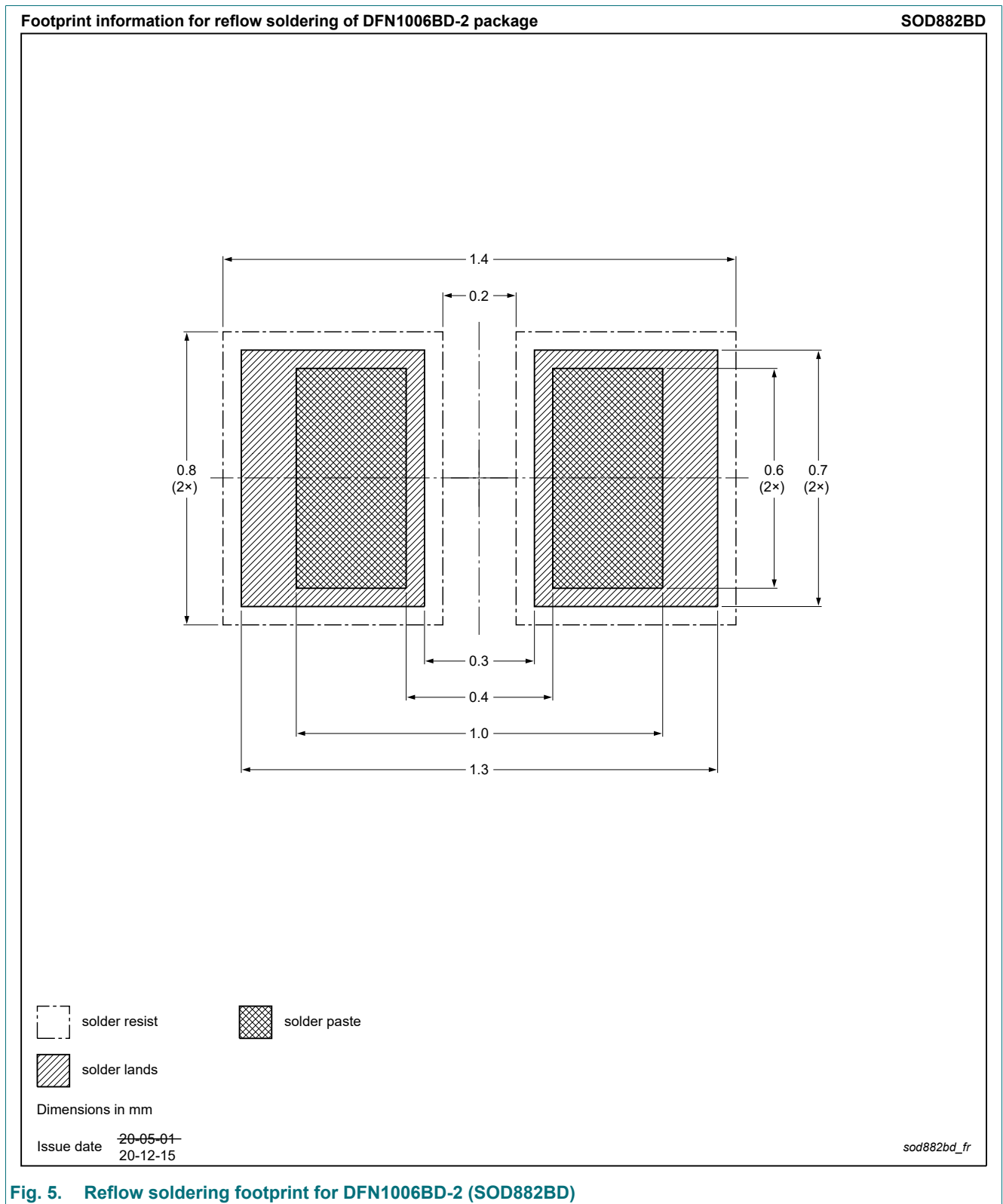


Fig. 5. Reflow soldering footprint for DFN1006BD-2 (SOD882BD)

13. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
BAT32ALS v.1	20220804	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.
Product [short] data sheet	Production	This document contains the product specification.

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- [2] The term 'short data sheet' is explained in section "Definitions".
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