



# BAS40LS-Q

## General-purpose Schottky diode

4 May 2021

Product data sheet

### 1. General description

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

### 2. Features and benefits

- High switching speed
- Low leakage current
- High breakdown voltage
- Low capacitance
- Suitable for Automatic Optical Inspection (AOI) of solder joint
- Qualified according to AEC-Q101 and recommended for use in automotive applications

### 3. Applications

- Ultra high-speed switching
- Voltage clamping

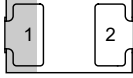

### 4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$I_F$	forward current		-	-	120	mA
$V_R$	reverse voltage		-	-	40	V
$V_F$	forward voltage	$I_F = 1 \text{ mA}$ ; $t_p \leq 300 \text{ } \mu\text{s}$ ; $\delta \leq 0.02$ ; pulsed; $T_{amb} = 25 \text{ } ^\circ\text{C}$	-	-	380	mV

## 5. Pinning information

Table 2. Pinning information

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

[1] The marking bar indicates the cathode.

## 6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BAS40LS-Q	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
BAS40LS-Q	N2

## 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		-	40	V
$I_F$	forward current		-	120	mA
$I_{FRM}$	repetitive peak forward current	$t_p \leq 1 \text{ s}; \delta \leq 0.5$	-	120	mA
$I_{FSM}$	non-repetitive peak forward current	$t_p \leq 10 \text{ ms}; T_{j(\text{init})} = 25 \text{ }^\circ\text{C}$	[1]	200	mA
$T_j$	junction temperature		-	150	$^\circ\text{C}$
$T_{\text{amb}}$	ambient temperature		-55	150	$^\circ\text{C}$
$T_{\text{stg}}$	storage temperature		-65	150	$^\circ\text{C}$

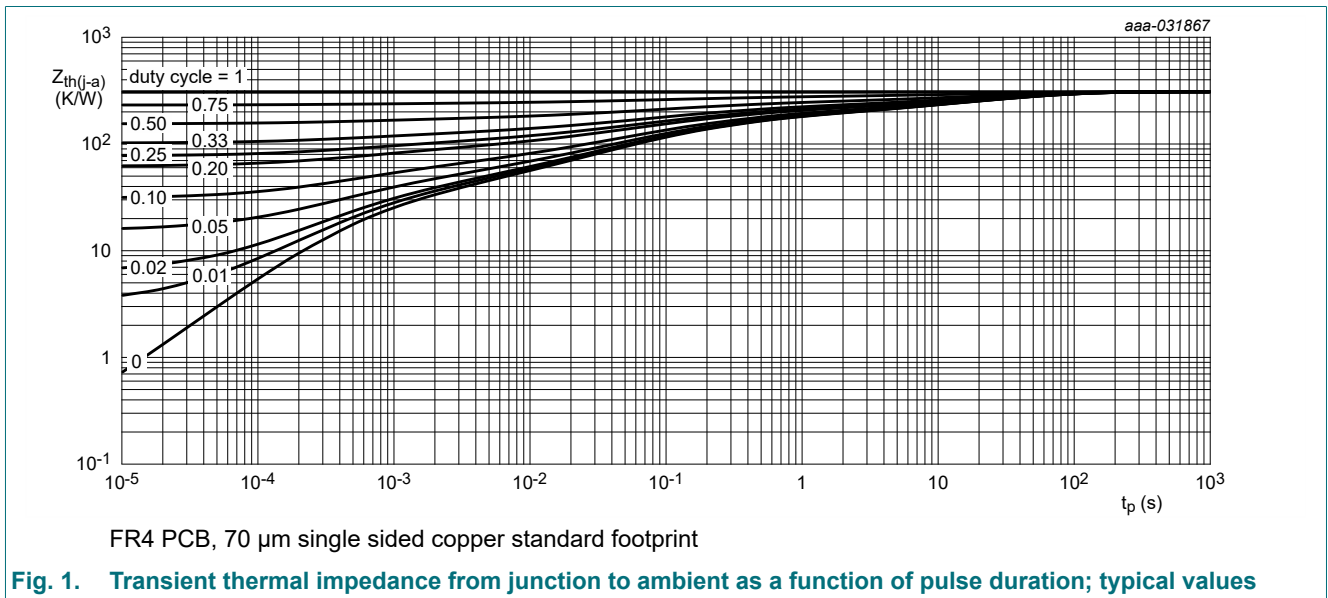
[1]  $T_j = 25 \text{ }^\circ\text{C}$  prior to surge

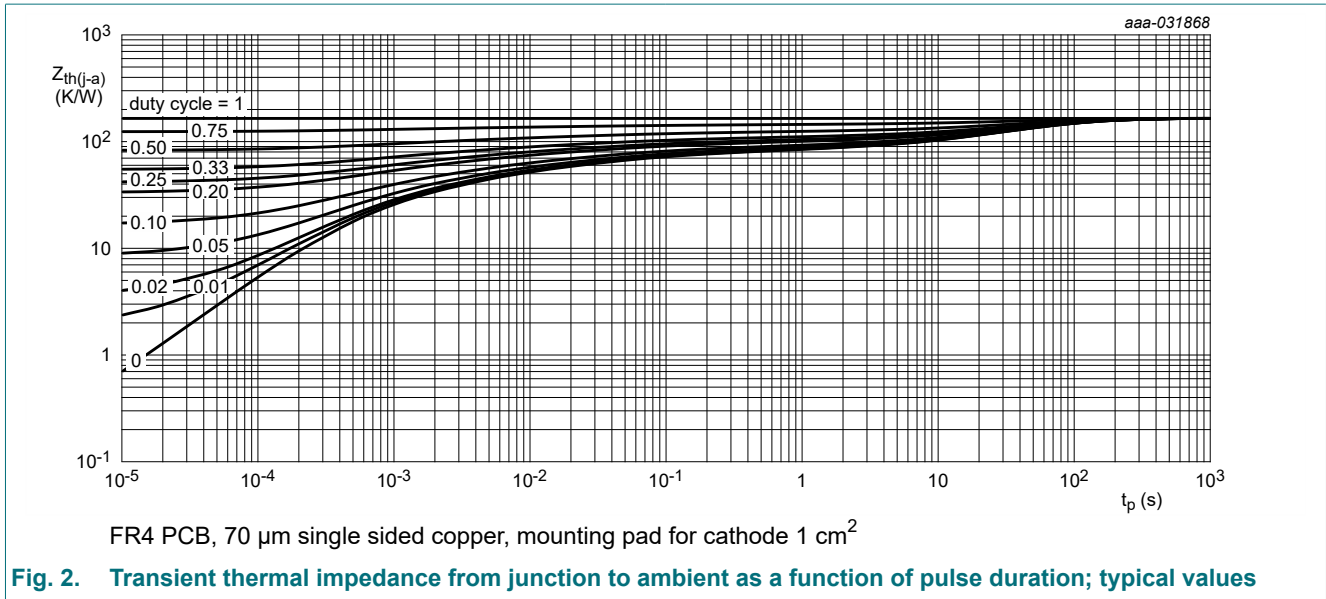
## 9. Thermal characteristics

**Table 6. Thermal characteristics**

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$R_{\text{th}(j-a)}$	thermal resistance from junction to ambient	in free air	[1]	-	360	K/W

[1] Device mounted on an FR4 Printed-Circuit Board (PCB), 70  $\mu\text{m}$  single-sided copper, tin-plated and standard footprint.

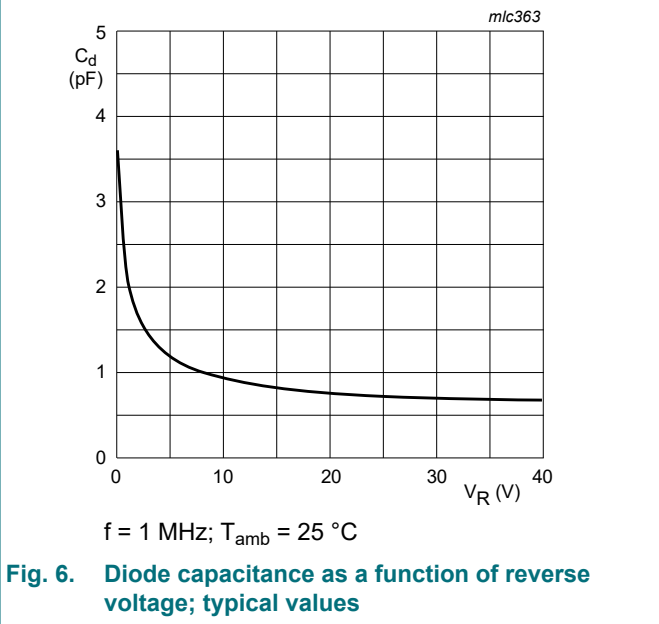
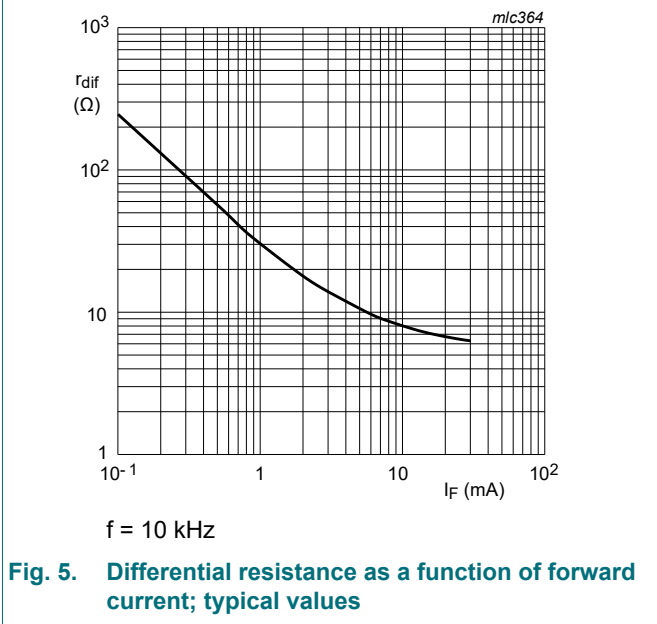
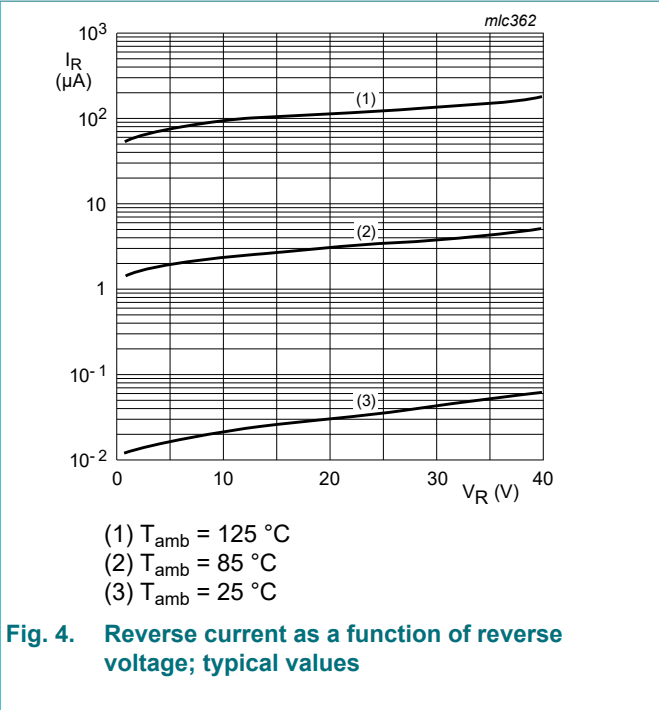
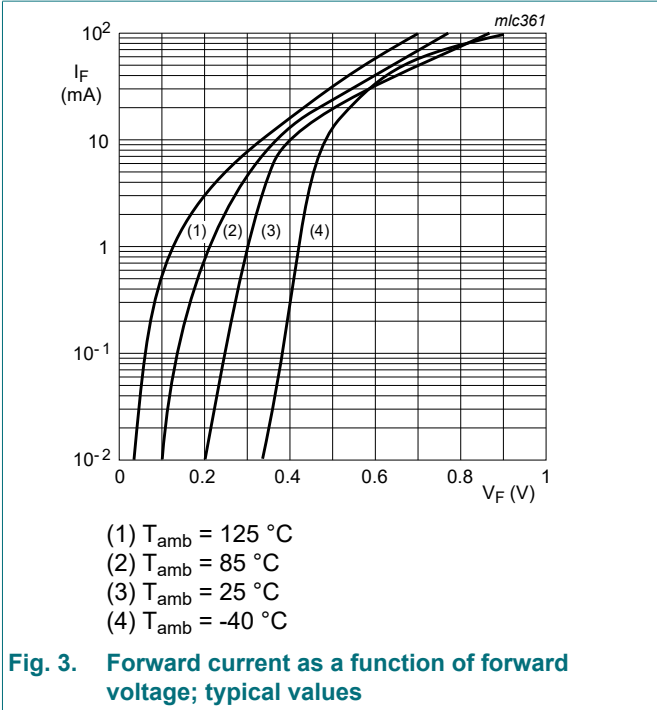




## 10. Characteristics

Table 7. Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V <sub>F</sub>	forward voltage	I <sub>F</sub> = 1 mA; t <sub>p</sub> ≤ 300 µs; δ ≤ 0.02; pulsed; T <sub>amb</sub> = 25 °C	-	-	380	mV
		I <sub>F</sub> = 10 mA; t <sub>p</sub> ≤ 300 µs; δ ≤ 0.02; pulsed; T <sub>amb</sub> = 25 °C	-	-	500	mV
		I <sub>F</sub> = 40 mA; t <sub>p</sub> ≤ 300 µs; δ ≤ 0.02; pulsed; T <sub>amb</sub> = 25 °C	-	-	1	V
I <sub>R</sub>	reverse current	V <sub>R</sub> = 30 V; T <sub>amb</sub> = 25 °C	-	-	1	µA
		V <sub>R</sub> = 40 V; T <sub>amb</sub> = 25 °C	-	-	10	µA
C <sub>d</sub>	diode capacitance	V <sub>R</sub> = 0 V; f = 1 MHz; T <sub>amb</sub> = 25 °C	-	-	5	pF



## 11. Test information

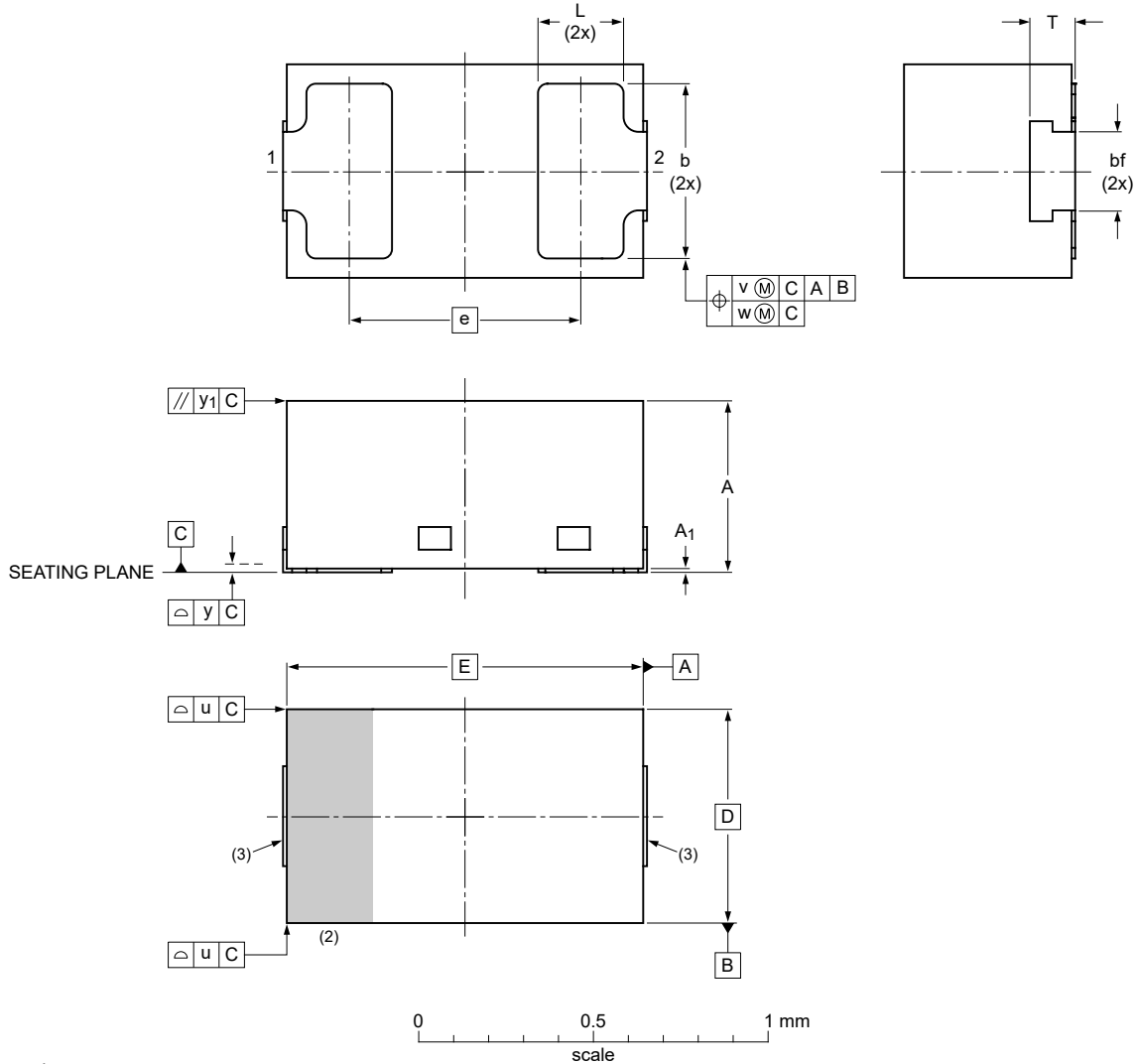
### Quality information

This product has been qualified in accordance with the Automotive Electronics Council (AEC) standard Q101 - *Stress test qualification for discrete semiconductors*, and is suitable for use in automotive applications.

12. 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>
max	0.50	0.04		0.55				0.30	0.22					
mm 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. 7. Package outline DFN1006BD-2 (SOD882BD)

### 13. Soldering

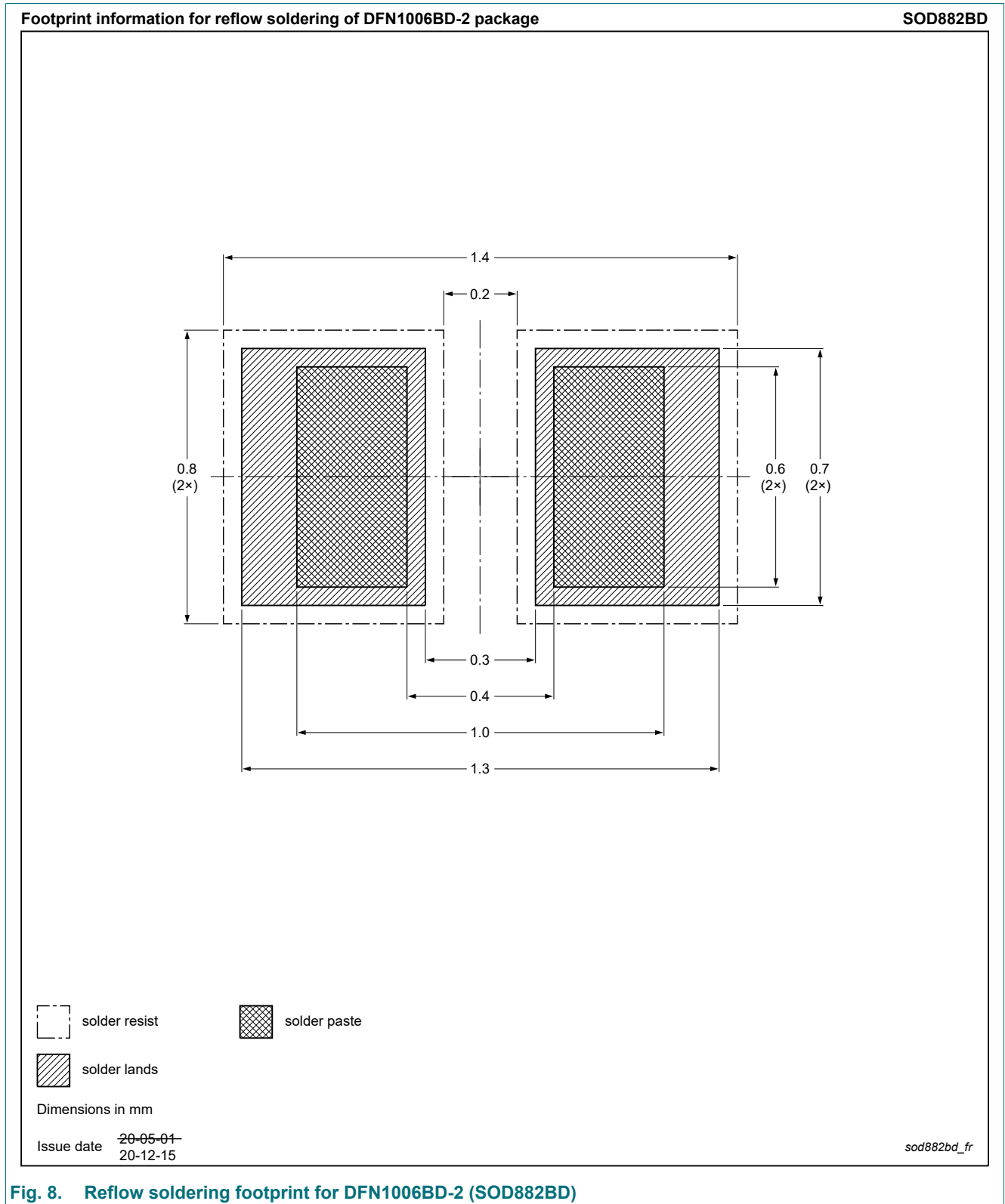


Fig. 8. Reflow soldering footprint for DFN1006BD-2 (SOD882BD)

## 14. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
BAS40LS-Q v.2	20210504	Product data sheet	-	BAS40LS-Q v.1
Modifications:	• Features and benefits: added recommendation for automotive applications			
BAS40LS-Q v.1	20210212	Product data sheet	-	-

## 15. 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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## Contents

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1. General description.....	1
2. Features and benefits.....	1
3. Applications.....	1
4. Quick reference data.....	1
5. Pinning information.....	2
6. Ordering information.....	2
7. Marking.....	2
8. Limiting values.....	3
9. Thermal characteristics.....	3
10. Characteristics.....	4
11. Test information.....	5
12. Package outline.....	6
13. Soldering.....	7
14. Revision history.....	8
15. Legal information.....	9

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