



BAS40LS

General-purpose Schottky diode

12 February 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

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; $T_{\text{amb}} = 25 \text{ } ^\circ\text{C}$	-	-	380	mV

5. Pinning information

Table 2. Pinning information

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

[1] The marking bar indicates the cathode.

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BAS40LS	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	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_{amb}	ambient temperature			-55	150	$^\circ\text{C}$
T_{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
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air	[1]	-	-	360	K/W

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

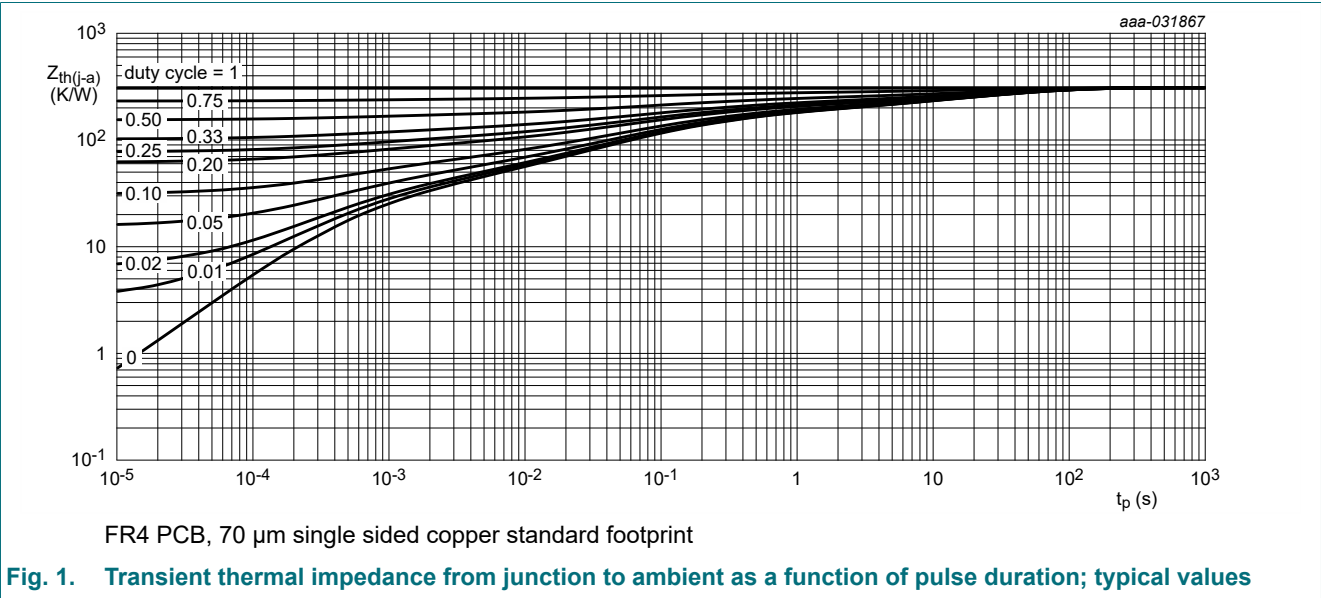
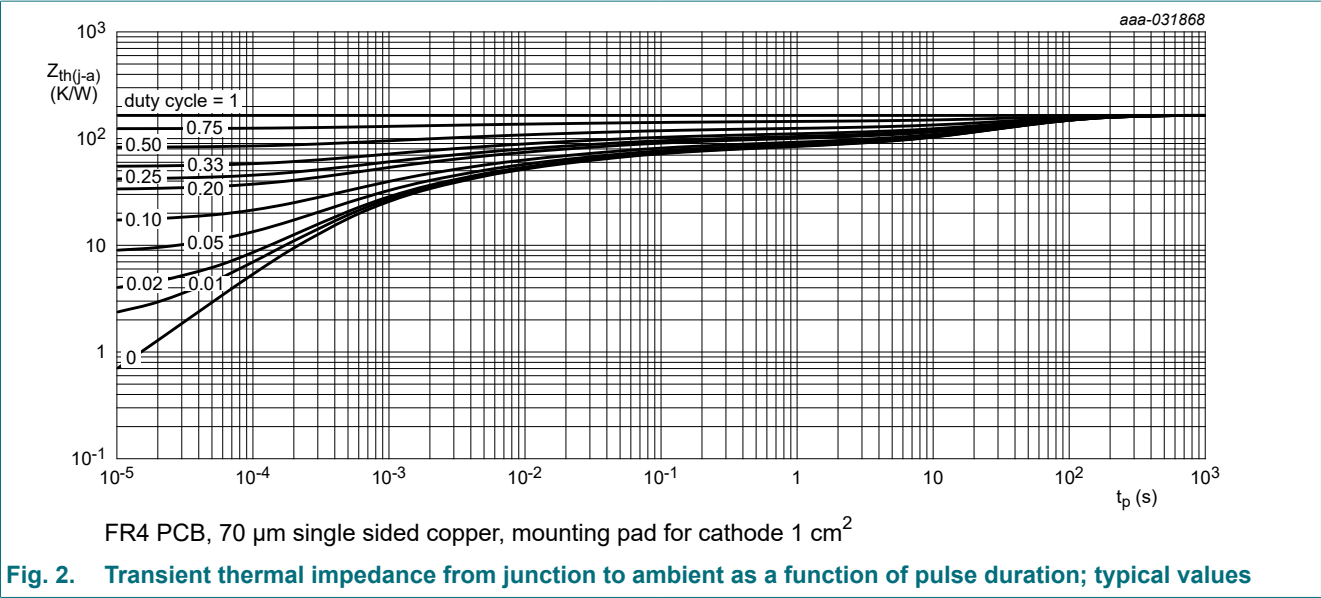


Fig. 1. Transient thermal impedance from junction to ambient as a function of pulse duration; typical values



10. Characteristics

Table 7. Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
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
		$I_F = 10\text{ mA}$; $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$; pulsed; $T_{amb} = 25\text{ }^\circ\text{C}$	-	-	500	mV
		$I_F = 40\text{ mA}$; $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$; pulsed; $T_{amb} = 25\text{ }^\circ\text{C}$	-	-	1	V
I_R	reverse current	$V_R = 30\text{ V}$; $T_{amb} = 25\text{ }^\circ\text{C}$	-	-	1	μA
		$V_R = 40\text{ V}$; $T_{amb} = 25\text{ }^\circ\text{C}$	-	-	10	μA
C_d	diode capacitance	$V_R = 0\text{ V}$; $f = 1\text{ MHz}$; $T_{amb} = 25\text{ }^\circ\text{C}$	-	-	5	pF

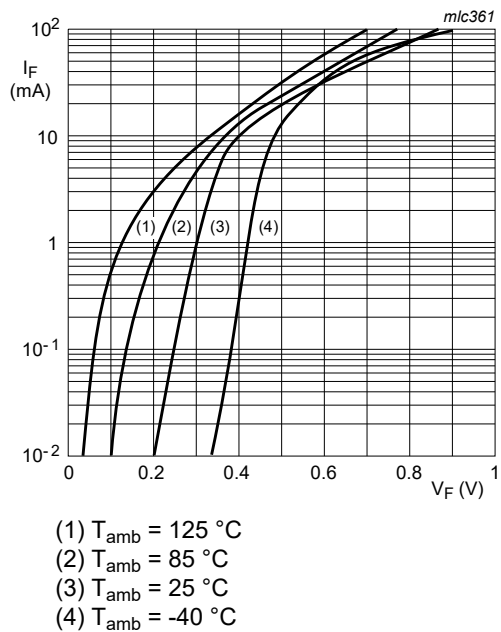


Fig. 3. Forward current as a function of forward voltage; typical values

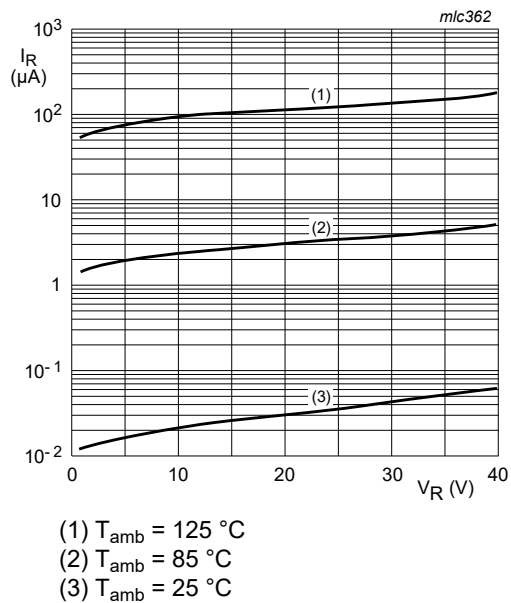


Fig. 4. Reverse current as a function of reverse voltage; typical values

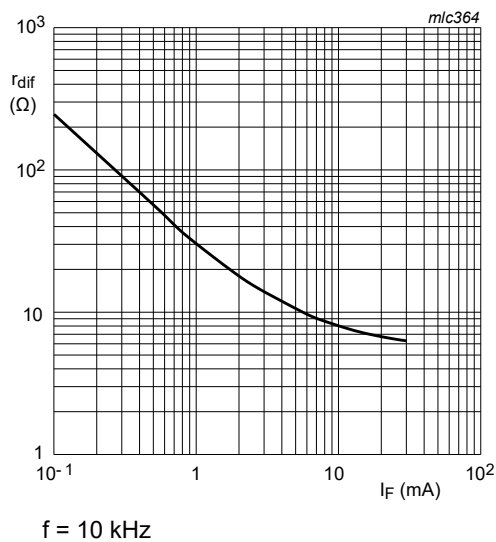


Fig. 5. Differential resistance as a function of forward current; typical values

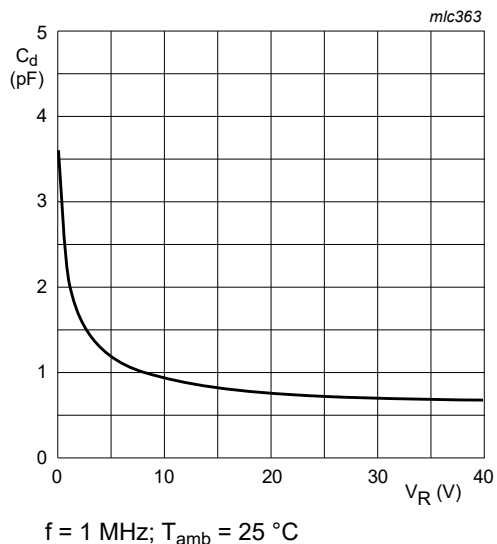


Fig. 6. Diode capacitance as a function of reverse voltage; typical values

11. Package outline

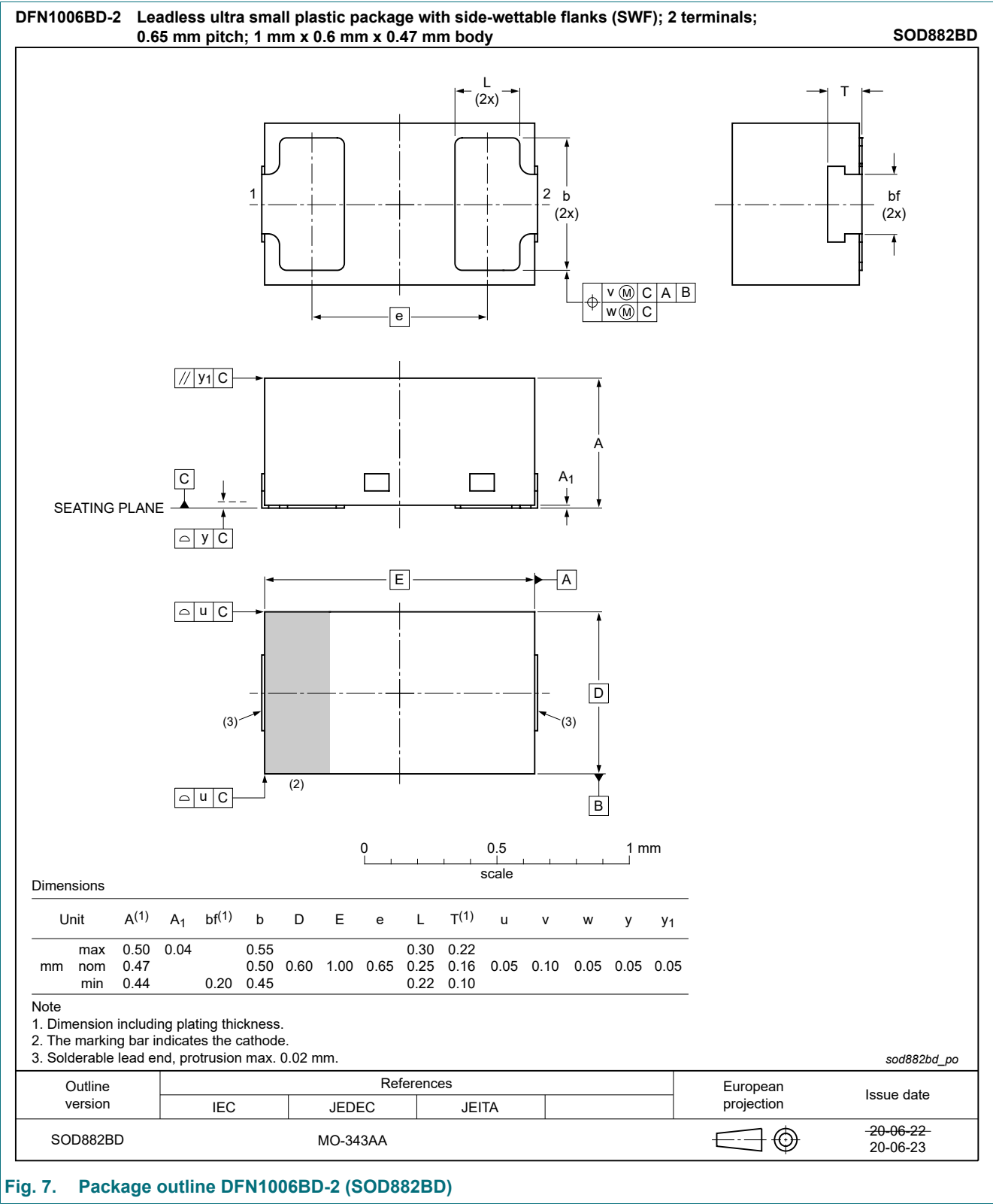


Fig. 7. Package outline DFN1006BD-2 (SOD882BD)

12. Soldering

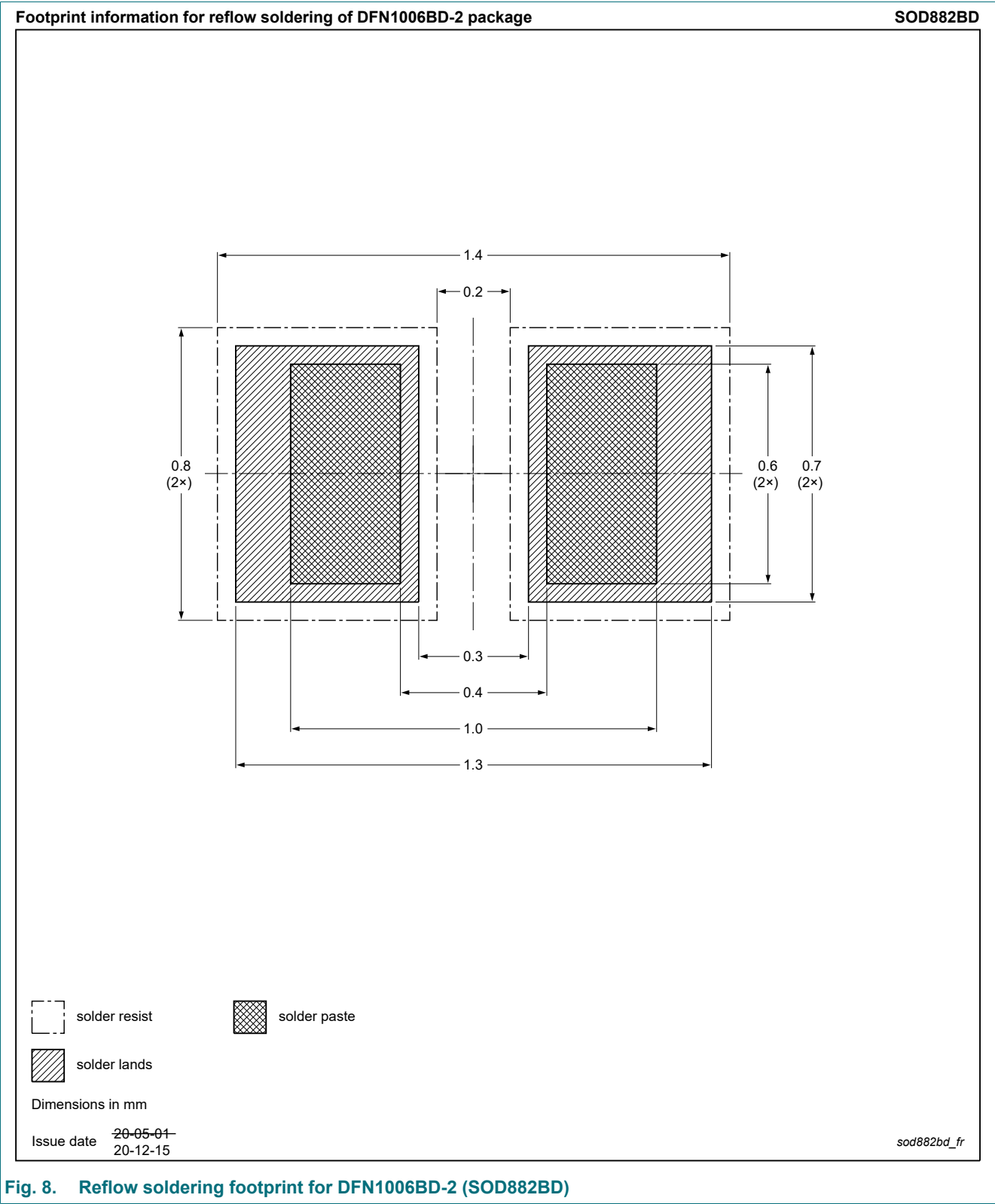


Fig. 8. Reflow soldering footprint for DFN1006BD-2 (SOD882BD)

13. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
BAS40LS v.2	20210212	Product data sheet	-	BAS40LS v.1
Modifications:	• Changed to non-automotive. Please refer to the automotive product(s) with -Q.			
BAS40LS v.1	20200807	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.

- [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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