



BAS70L-Q

General-purpose Schottky diode

7 January 2022

Product data sheet

1. General description

General-purpose Schottky diode in a leadless ultra small SOD882 (DFN1006-2) Surface-Mounted Device (SMD) plastic package.

2. Features and benefits

- High switching speed
- Low leakage current
- High breakdown voltage
- Low capacitance
- 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_{FRM}	repetitive peak forward current	$t_p \leq 1 \text{ s}$; $\delta \leq 0.5$	-	-	70	mA
V_F	forward voltage	$I_F = 1 \text{ mA}$; $t_p \leq 300 \mu\text{s}$; $\delta \leq 0.02$; pulsed; $T_{amb} = 25 \text{ }^\circ\text{C}$	-	-	410	mV
V_R	reverse voltage	$T_j = 25 \text{ }^\circ\text{C}$	-	-	70	V

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	K	cathode[1]	<p>Transparent top view DFN1006-2 (SOD882)</p>	<p>aaa-003679</p>
2	A	anode		

[1] The marking bar indicates the cathode.

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BAS70L-Q	DFN1006-2	plastic, leadless ultra small package; 2 terminals; 0.65 mm pitch; 1 mm x 0.6 mm x 0.48 mm body	SOD882

7. Marking

Table 4. Marking codes

Type number	Marking code
BAS70L-Q	S8

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	$T_j = 25\text{ °C}$	-	70	V
I_F	forward current		-	70	mA
I_{FRM}	repetitive peak forward current	$t_p \leq 1\text{ s}$; $\delta \leq 0.5$	-	70	mA
I_{FSM}	non-repetitive peak forward current	$t_p \leq 10\text{ ms}$; $T_{j(\text{init})} = 25\text{ °C}$	-	100	mA
T_j	junction temperature		-	150	°C
T_{amb}	ambient temperature		-65	150	°C
T_{stg}	storage temperature		-65	150	°C

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] [2]	-	500	K/W

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

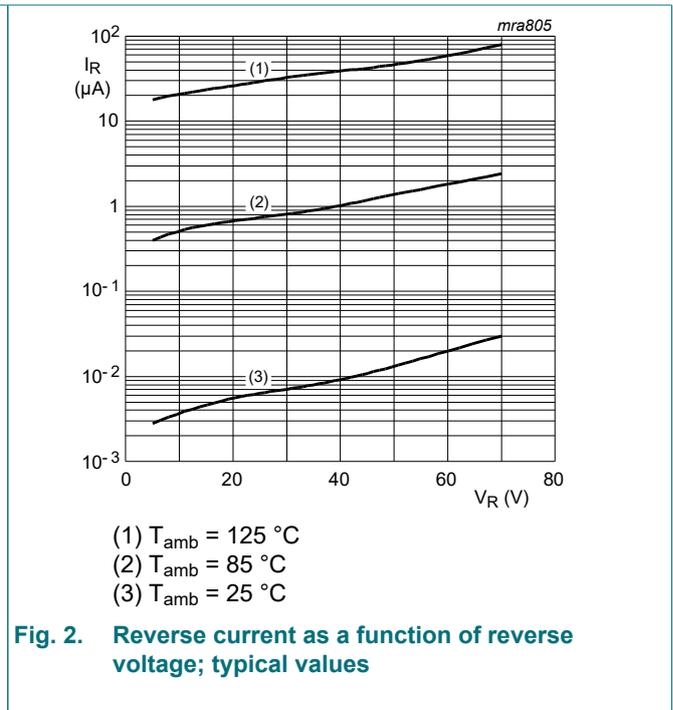
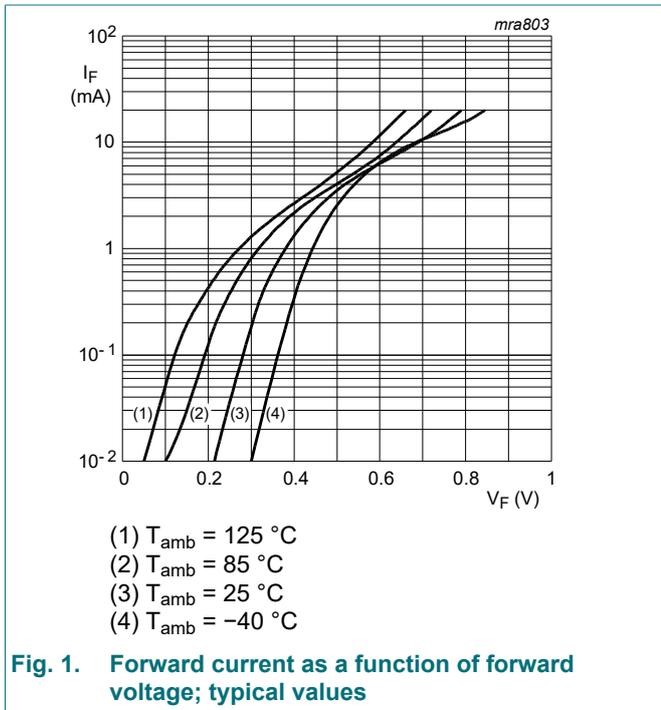
[2] Reflow soldering is the only recommended soldering method.

10. Characteristics

Table 7. Characteristics

$T_{amb} = 25\text{ °C}$ unless otherwise specified

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; $T_{amb} = 25\text{ °C}$	-	-	410	mV
		$I_F = 10\text{ mA}$; $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$; pulsed; $T_{amb} = 25\text{ °C}$	-	-	750	mV
		$I_F = 15\text{ mA}$; $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$; pulsed; $T_{amb} = 25\text{ °C}$	-	-	1	V
I_R	reverse current	$V_R = 50\text{ V}$; $T_{amb} = 25\text{ °C}$	-	-	100	nA
		$V_R = 70\text{ V}$; $T_{amb} = 25\text{ °C}$	-	-	10	μA
C_d	diode capacitance	$V_R = 0\text{ V}$; $f = 1\text{ MHz}$; $T_{amb} = 25\text{ °C}$	-	-	2	pF



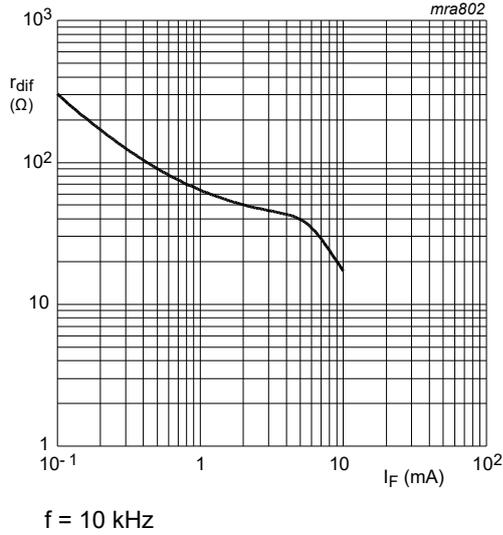


Fig. 3. Differential forward resistance as a function of forward current; typical values

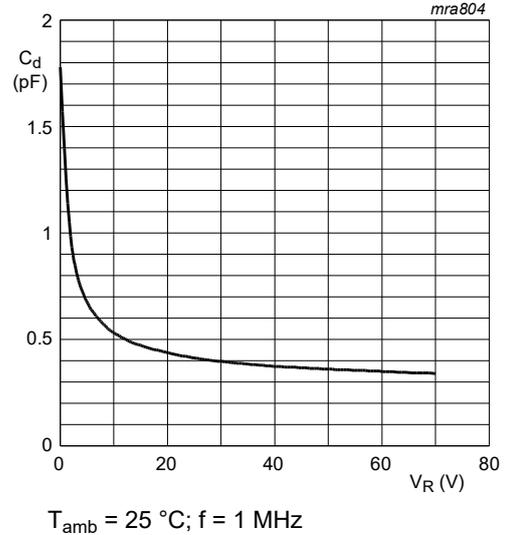


Fig. 4. Diode capacitance as a function of reverse voltage; typical values

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

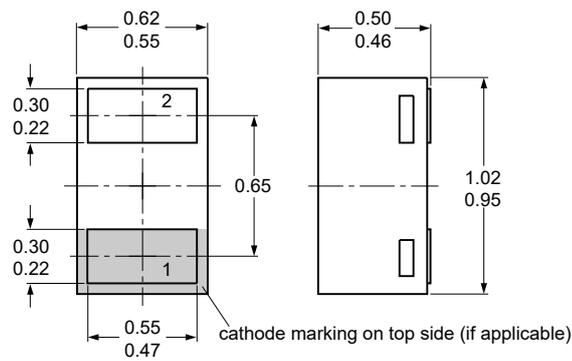


Fig. 5. Package outline DFN1006-2 (SOD882)

13. Soldering

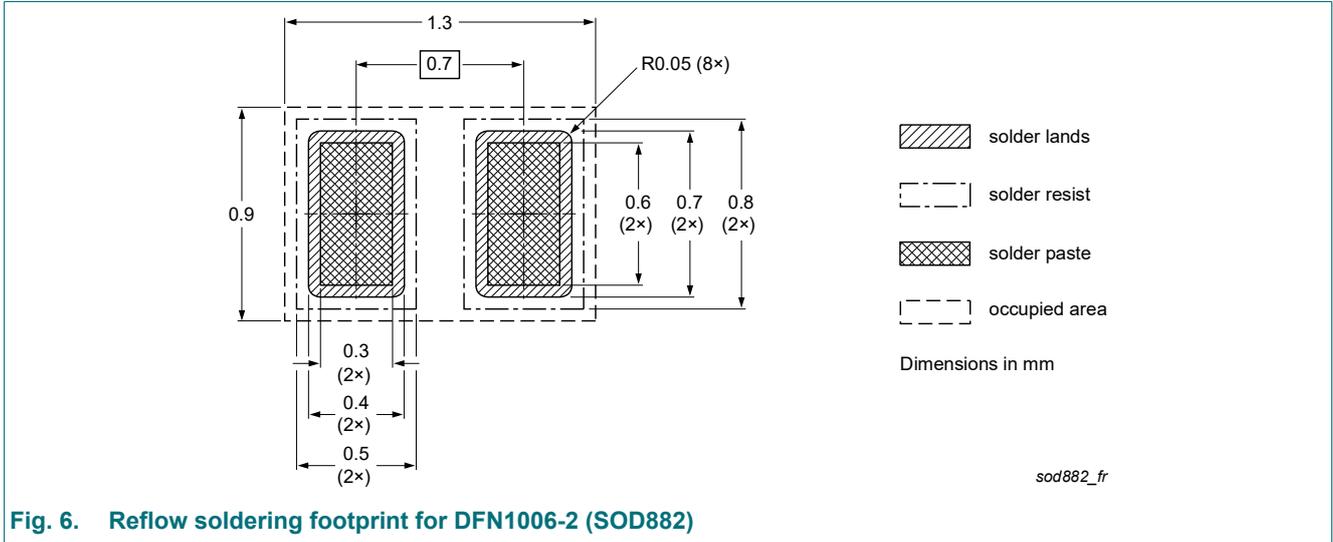


Fig. 6. Reflow soldering footprint for DFN1006-2 (SOD882)

14. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
BAS70L-Q v.1	20220107	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

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

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