BAS70L

General-purpose Schottky diode

1 January 2023 **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

3. Applications

- Ultra high-speed switching
- Voltage clamping

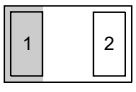
4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
I_F	forward current			-	-	70	mA
V_F	forward voltage	I_F = 1 mA; $t_p \leq$ 300 µs; $\delta \leq$ 0.02; pulsed; T_{amb} = 25 °C		-	-	410	mV
V_R	reverse voltage	T_j = 25 °C		-	-	70	V

5. Pinning information

Table 2. Pinning information

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

[1] The marking bar indicates the cathode.

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BAS70L	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	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 °C		-	70	V
I_F	forward current			-	70	mA
I_{FRM}	repetitive peak forward current	$t_p \leq$ 1 s; $\delta \leq$ 0.5		-	70	mA
I_{FSM}	non-repetitive peak forward current	$t_p \leq$ 10 ms; $T_{j(init)}$ = 25 °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
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air	[1] [2]	-	-	500	K/W

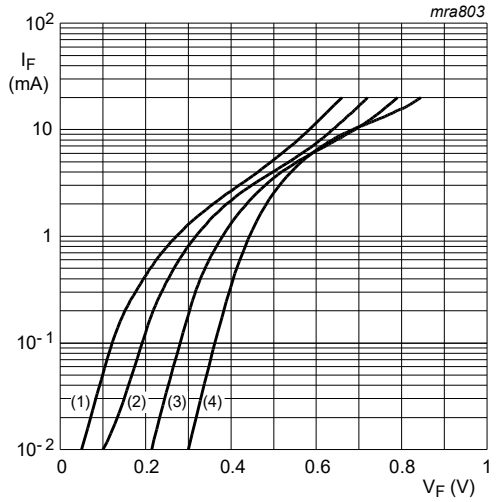
[1] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.
[2] Reflow soldering is the only recommended soldering method.

10. Characteristics

Table 7. Characteristics

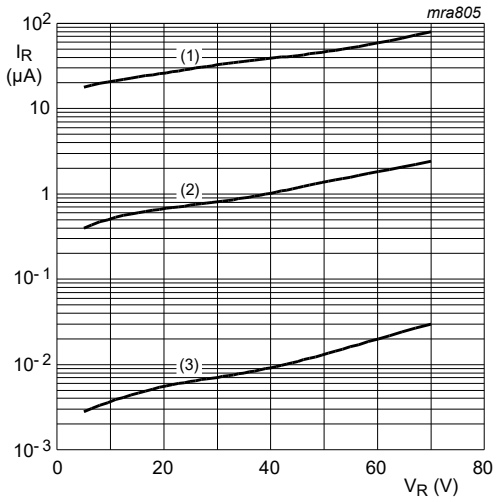
T_{amb} = 25 °C unless otherwise specified

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_F	forward voltage	I_F = 1 mA; $t_p \leq$ 300 µs; $\delta \leq$ 0.02; pulsed; T_{amb} = 25 °C		-	-	410	mV
		I_F = 10 mA; $t_p \leq$ 300 µs; $\delta \leq$ 0.02; pulsed; T_{amb} = 25 °C		-	-	750	mV
		I_F = 15 mA; $t_p \leq$ 300 µs; $\delta \leq$ 0.02; pulsed; T_{amb} = 25 °C		-	-	1	V
I_R	reverse current	V_R = 50 V; T_{amb} = 25 °C		-	-	100	nA
		V_R = 70 V; T_{amb} = 25 °C		-	-	10	µA
C_d	diode capacitance	V_R = 0 V; f = 1 MHz; T_{amb} = 25 °C		-	-	2	pF



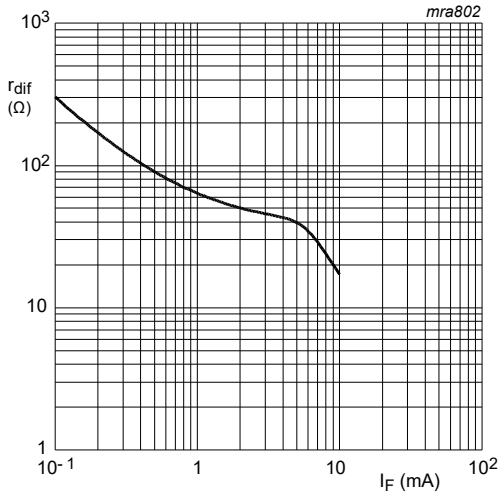
(1) T_{amb} = 125 °C
(2) T_{amb} = 85 °C
(3) T_{amb} = 25 °C
(4) T_{amb} = −40 °C

Fig. 1. Forward current as a function of forward voltage; typical values



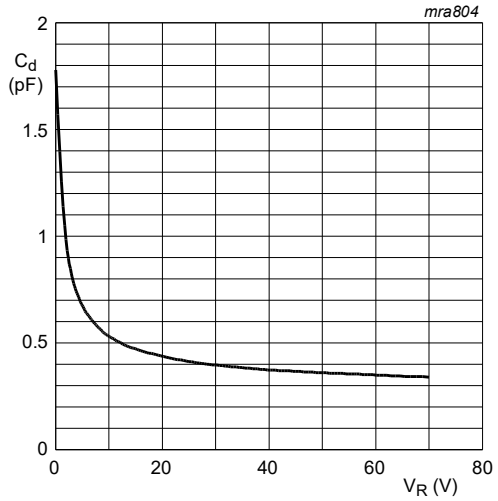
(1) T_{amb} = 125 °C
(2) T_{amb} = 85 °C
(3) T_{amb} = 25 °C

Fig. 2. Reverse current as a function of reverse voltage; typical values



f = 10 kHz

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



T_{amb} = 25 °C; f = 1 MHz

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

11. Package outline

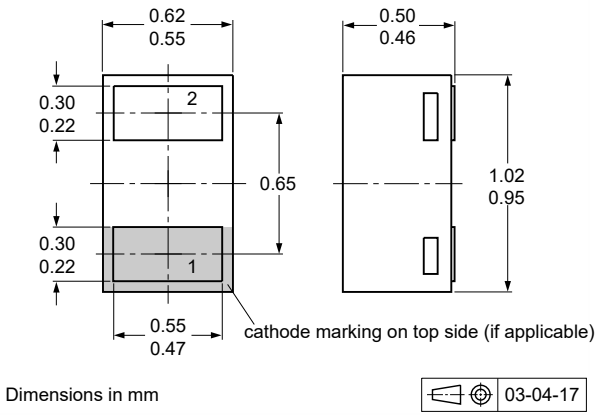


Fig. 5. Package outline DFN1006-2 (SOD882)

12. Soldering

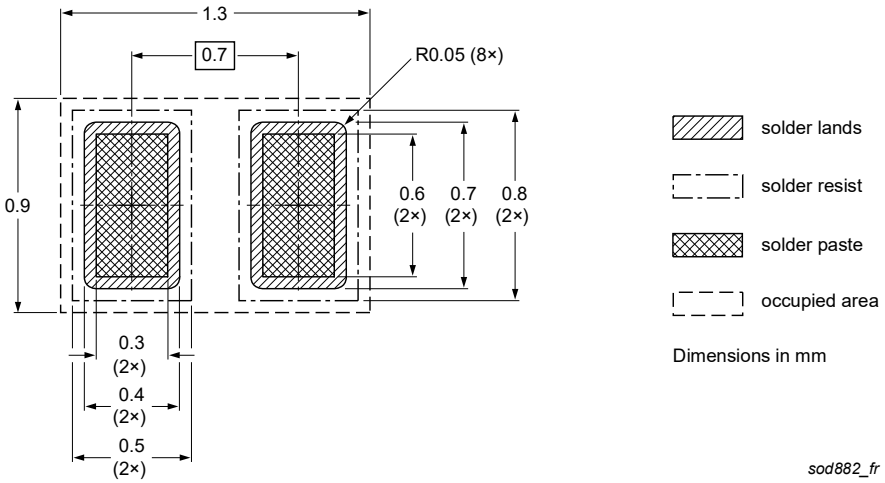


Fig. 6. Reflow soldering footprint for DFN1006-2 (SOD882)

13. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
BAS70L v.11	20230101	Product data sheet	-	BAS70_1PS7XSB70_SER_10
Modifications:	• Family data sheet reduced to single type data sheets. • Product changed to non-automotive qualification. Please refer to nexperia.com for automotive (-Q) product alternative(s).			
BAS70_1PS7XSB70_SER_10	20210407	Product data sheet	-	BAS70_1PS7XSB70_SER_9
BAS70_1PS7XSB70_SER_9	20060504	Product data sheet		BAS70_1PS7XSB70_SER_8
BAS70_1PS7XSB70_SER_8	20060504	Product data sheet	-	BAS70_1PS7XSB70_SER_7
BAS70_1PS7XSB70_SER_7	20050718	Product data sheet	-	1PS76SB70_2 1PS79SB70_1 BAS70H_1 BAS70L_1 BAS70-07V_1 BAS70VVBAS70W_3 BAS70-07S_4 BAS70_SERIES_6
1PS76SB70_2	20040126	Product specification	-	1PS76SB70_SER_1
1PS76SB70_1	19980716	Product specification	-	-
BAS70H_1	20050425	Product specification	-	-
BAS70L_1	20030520	Product specification	-	-
BAS70-07V_1	20020117	Product specification	-	-
BAS70VV_1	20040910	Product specification	-	-
BAS70W_3	19990326	Product specification	-	BAS70W_2
BAS70-07S_4	20030411	Product specification	-	BAS70_07S_3
BAS70_SERIES_6	20011011	Product specification	-	BAS70_5

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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