



BAT54L-Q

Schottky barrier diode

12 February 2025

Product data sheet

1. General description

Planar Schottky barrier diode encapsulated in a SOD882 leadless ultra small plastic package.

2. Features and benefits

- Low forward voltage
- Leadless ultra small plastic package (1 mm x 0.6 mm x 0.5 mm)
- Boardspace 1.17 mm² (approx. 10pct of SOT23)
- Power dissipation comparable to SOT23
- Qualified according to AEC-Q101 and recommended for use in automotive applications

3. Applications

- Ultra high-speed switching
- Voltage clamping
- Protection circuits
- Mobile communication, digital (still) cameras, PDAs and PCMCIA cards

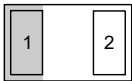

4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V _R	reverse voltage		-	-	30	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)	 <i>aaa-003679</i>
2	A	anode		

[1] The marking bar indicates the cathode

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BAT54L-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
BAT54L-Q	S3

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 ≤ 1 s; δ ≤ 0.5		-	300	mA
I _{FSM}	non-repetitive peak forward current	t _p < 10 ms; T _{j(init)} = 25 °C		-	600	mA
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C	[1]	-	250	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), single-sided copper, tin-plated and standard footprint.

9. Thermal characteristics

Table 6. Thermal characteristics

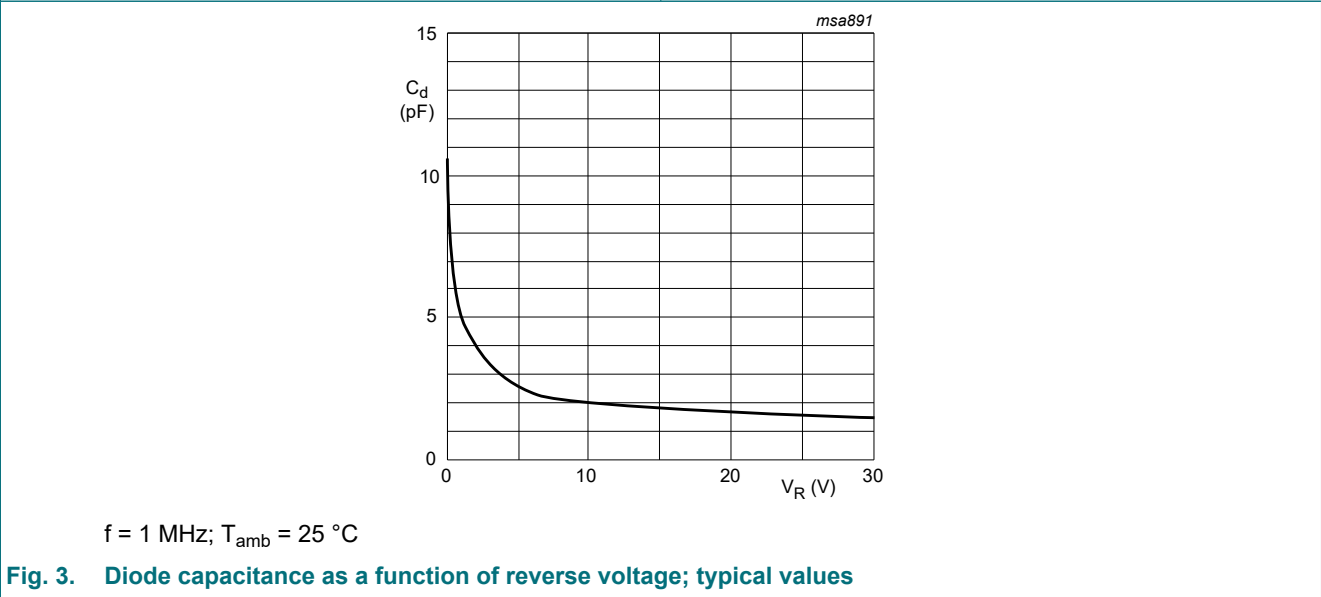
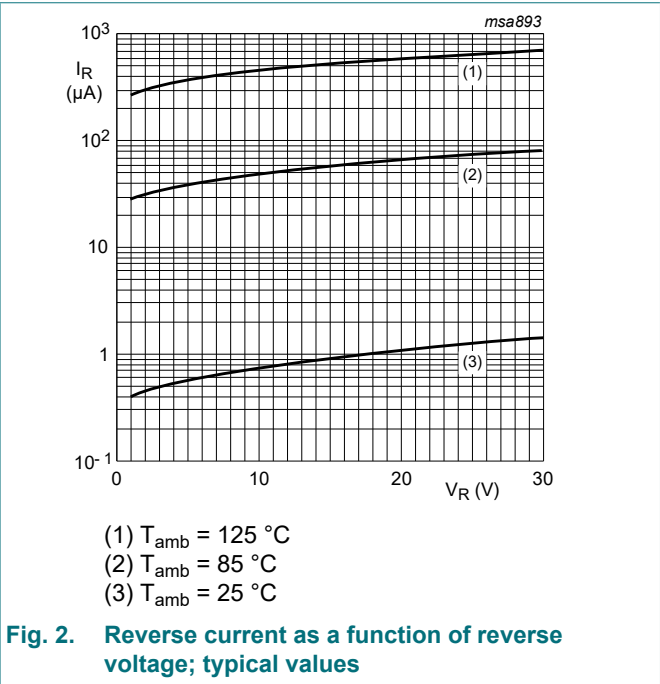
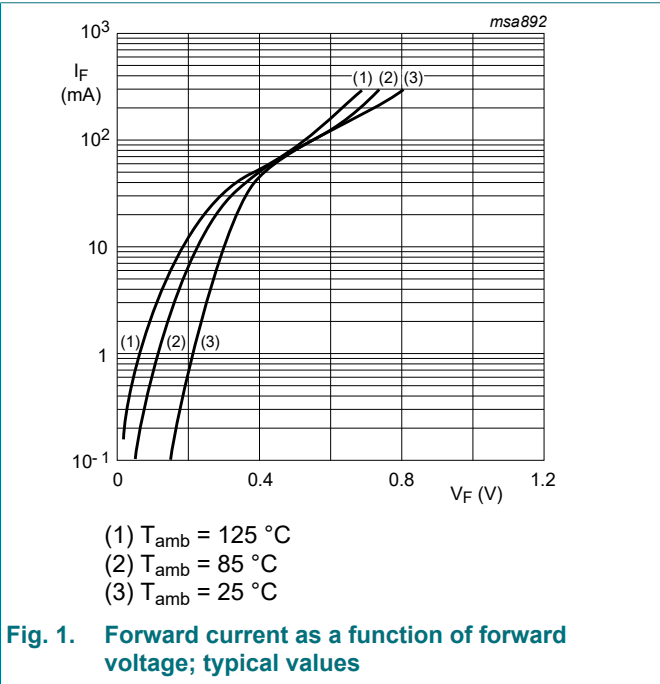
Symbol	Parameter	Conditions		Min	Typ	Max	Unit
R _{th(j-a)}	thermal resistance from junction to ambient	in free air	[1]	-	-	500	K/W

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

10. Characteristics

Table 7. Characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V _F	forward voltage	I _F = 0.1 mA; T _{amb} = 25 °C		-	-	240	mV
		I _F = 1 mA; T _{amb} = 25 °C		-	-	320	mV
		I _F = 10 mA; T _{amb} = 25 °C		-	-	400	mV
		I _F = 30 mA; T _{amb} = 25 °C		-	-	500	mV
		I _F = 100 mA; T _{amb} = 25 °C		-	-	800	mV
I _R	reverse current	V _R = 25 V; pulsed; t _p = 300 μs; δ = 0.02; T _{amb} = 25 °C		-	-	2	μA
C _d	diode capacitance	V _R = 1 V; f = 1 MHz; T _{amb} = 25 °C		-	-	10	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

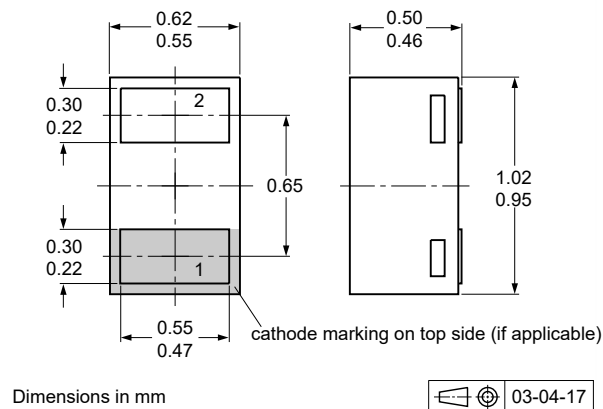


Fig. 4. Package outline DFN1006-2 (SOD882)

13. Soldering

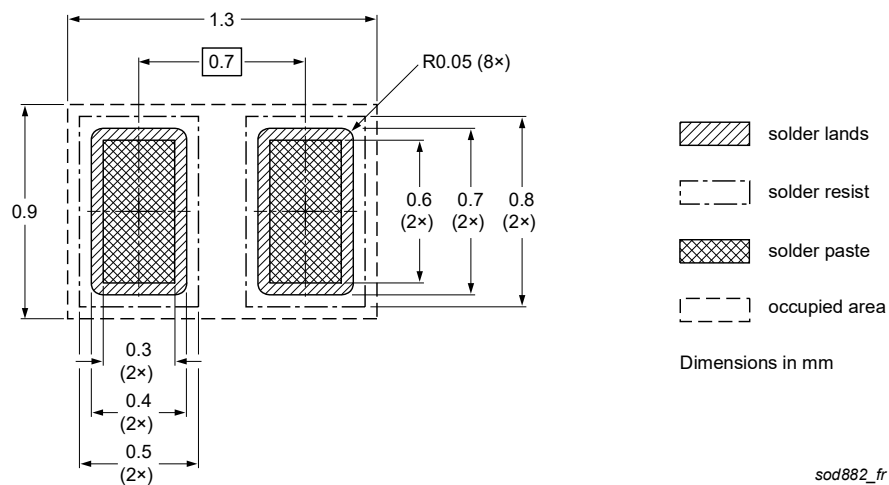


Fig. 5. Reflow soldering footprint for DFN1006-2 (SOD882)

14. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
BAT54L-Q v.1	20250212	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".
- [3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the internet at <https://www.nexperia.com>.

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