

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.
- AEC-Q101 qualified

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 | Тур | Max | Unit |
| V _R | reverse voltage | | | - | - | 30 | V |

5. Pinning information

| Table 2. F | Symbol | | Simplified outline | Graphic symbol |
|------------|--------|------------|-------------------------|----------------|
| 1 | К | cathode[1] | | K- K -A |
| 2 | A | anode | | aaa-003679 |
| | | | Transparent top view | |
| | | | DFN1006-2 (SOD882) | |

[1] The marking bar indicates the cathode



6. Ordering information

| Table 3. Ordering information | | | | | | |
|-------------------------------|-----------|--|---------|--|--|--|
| Type number | Package | | | | | |
| | Name | Description | Version | | | |
| BAT54L | DFN1006-2 | DFN1006-2: leadless ultra small plastic package; 2 terminals | SOD882 | | | |

7. Marking

| Table 4. Marking codes | |
|------------------------|--------------|
| Type number | Marking code |
| BAT54L | 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 |
| l _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 |
| Tj | junction temperature | | | - | 150 | °C |
| T _{amb} | ambient temperature | | | -65 | 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

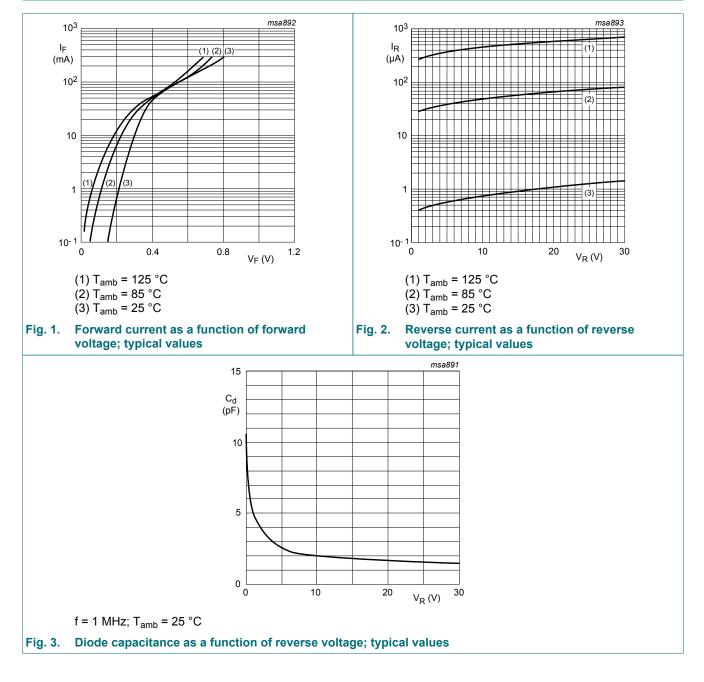
| Symbol | Parameter | Conditions | | Min | Тур | Max | Unit |
|----------------------|---|-------------|-----|-----|-----|-----|------|
| R _{th(j-a)} | thermal resistance from junction to ambient | in free air | [1] | - | - | 500 | K/W |

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

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10. Characteristics

| Symbol | Parameter | Conditions | Min | Тур | 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; t _p = 300 µs; δ = 0.02; pulsed; T _{amb} = 25 °C | - | - | 2 | μA |
| C _d | diode capacitance | V _R = 1 V; f = 1 MHz; T _{amb} = 25 °C | - | - | 10 | pF |

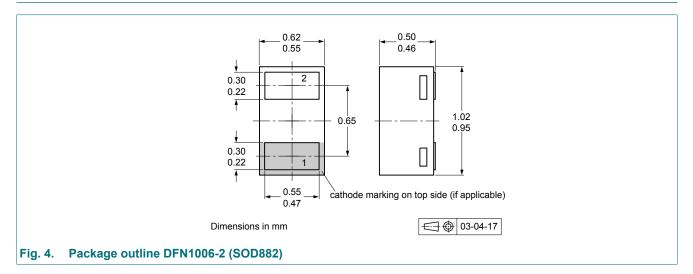


11. Test information

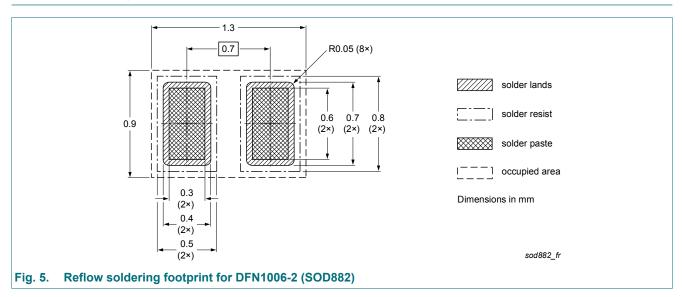
Quality information

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



13. Soldering



14. Revision history

| Table 8. Revision h | nistory | | | | | | | |
|---------------------|--------------|---|---------------|------------|--|--|--|--|
| Data sheet ID | Release date | Data sheet status | Change notice | Supersedes | | | | |
| BAT54L v.2 | 20180903 | Product data sheet | - | 20030623 | | | | |
| Modifications: | Nexperia. | The format of this data sheet has been redesigned to comply with the identity guidelines of Nexperia. Legal texts have been adapted to the new company name where appropriate. | | | | | | |
| BAT54L v.1 | 20030623 | Product data sheet | - | - | | | | |

BAT54L

Schottky barrier diode

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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