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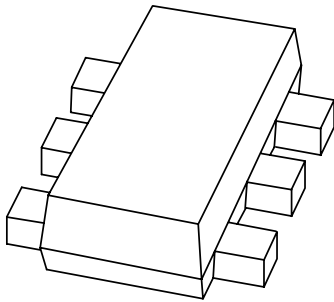
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If you have any questions related to the data sheet, please contact our nearest sales office via e-mail or telephone (details via **[salesaddresses@nexperia.com](mailto:salesaddresses@nexperia.com)**). Thank you for your cooperation and understanding,

Kind regards,

Team Nexperia

# DATA SHEET



**BAT74V**

Schottky barrier double diode

Product data sheet

2002 Sep 02

## Schottky barrier double diode

BAT74V

## FEATURES

- Low forward voltage
- Low capacitance
- Ultra small SMD plastic package
- Flat leads: excellent coplanarity and improved thermal behaviour.

## APPLICATIONS

- Ultra high-speed switching
- Voltage clamping
- Line termination
- Inverse polarity protection.

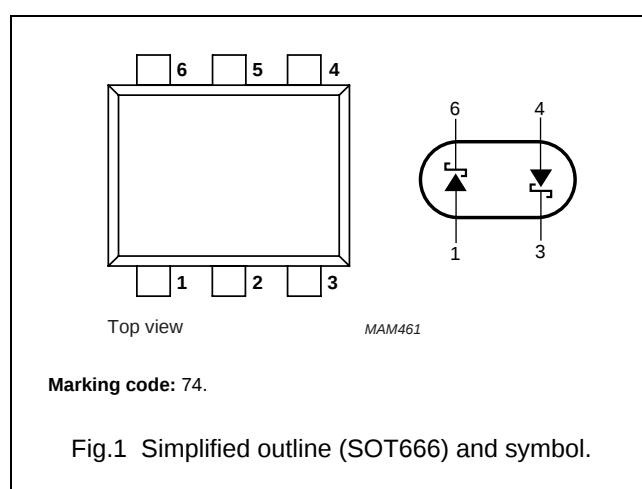
## DESCRIPTION

Planar Schottky barrier double diode with an integrated guard ring for stress protection.

Two separate dies encapsulated in a SOT666 ultra small SMD plastic package.

## PINNING

| PIN | DESCRIPTION   |
|-----|---------------|
| 1   | anode 1       |
| 2   | not connected |
| 3   | cathode 2     |
| 4   | anode 2       |
| 5   | not connected |
| 6   | cathode 1     |



## LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

| SYMBOL    | PARAMETER                           | CONDITIONS                                 | MIN. | MAX. | UNIT |
|-----------|-------------------------------------|--------------------------------------------|------|------|------|
| $V_R$     | continuous reverse voltage          |                                            | –    | 30   | V    |
| $I_F$     | continuous forward current          |                                            | –    | 200  | mA   |
| $I_{FRM}$ | repetitive peak forward current     | $t_p \leq 1 \text{ s}$ ; $\delta \leq 0.5$ | –    | 300  | mA   |
| $I_{FSM}$ | non-repetitive peak forward current | $t_p < 10 \text{ ms}$                      |      | 600  | mA   |
| $P_{tot}$ | total power dissipation             | $T_{amb} \leq 25 \text{ °C}$               | –    | 230  | mW   |
| $T_{stg}$ | storage temperature                 |                                            | –65  | +150 | °C   |
| $T_j$     | junction temperature                |                                            | –    | 125  | °C   |
| $T_{amb}$ | operating ambient temperature       |                                            | –65  | +125 | °C   |

## Schottky barrier double diode

BAT74V

**CHARACTERISTICS** $T_{amb} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified.

| SYMBOL | PARAMETER                  | CONDITIONS                                          | MAX. | UNIT          |
|--------|----------------------------|-----------------------------------------------------|------|---------------|
| $V_F$  | continuous forward voltage | $I_F = 0.1\text{ mA}$                               | 240  | mV            |
|        |                            | $I_F = 1\text{ mA}$                                 | 320  | mV            |
|        |                            | $I_F = 10\text{ mA}$                                | 400  | mV            |
|        |                            | $I_F = 30\text{ mA}$                                | 500  | mV            |
|        |                            | $I_F = 100\text{ mA}$ ; note 1; see Fig.2           | 800  | mV            |
| $I_R$  | reverse current            | $V_R = 25\text{ V}$ ; note 1; see Fig.3             | 2    | $\mu\text{A}$ |
| $C_d$  | diode capacitance          | $V_R = 1\text{ V}$ ; $f = 1\text{ MHz}$ ; see Fig.4 | 10   | pF            |

**Note**

1. Pulse test:  $t_p = 300\text{ }\mu\text{s}$ ;  $\delta = 0.02$ .

**THERMAL CHARACTERISTICS**

| SYMBOL              | PARAMETER                                   | CONDITIONS | VALUE | UNIT |
|---------------------|---------------------------------------------|------------|-------|------|
| $R_{th\text{ j-a}}$ | thermal resistance from junction to ambient | note 1     | 416   | K/W  |

**Note**

1. Refer to SOT666 standard mounting conditions.

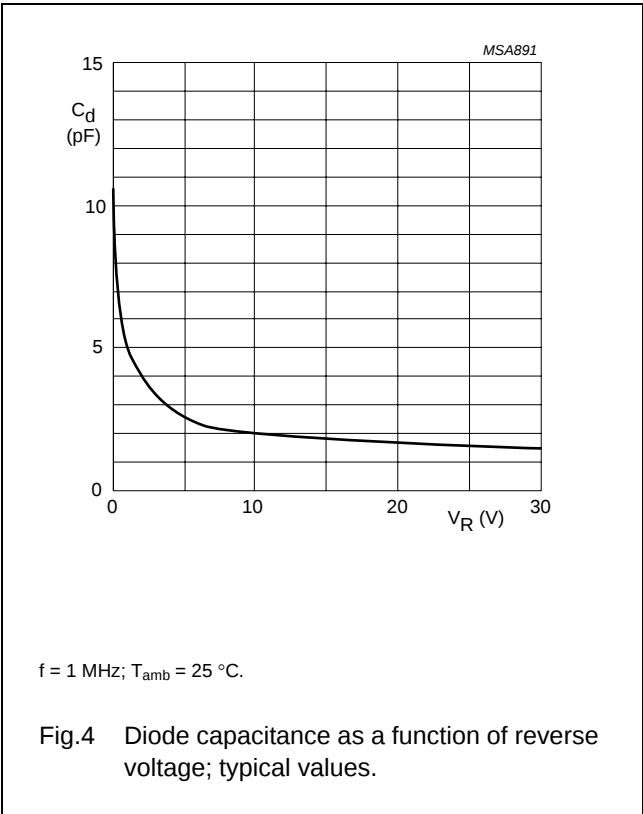
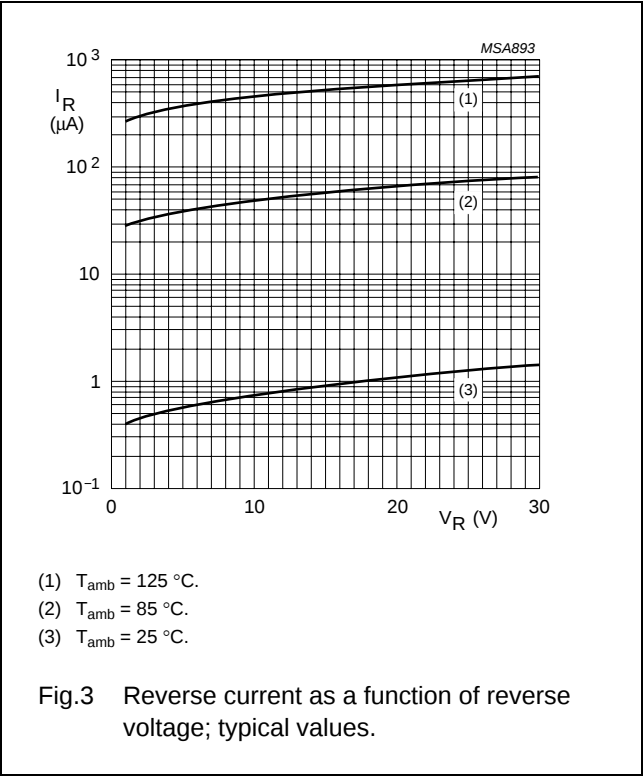
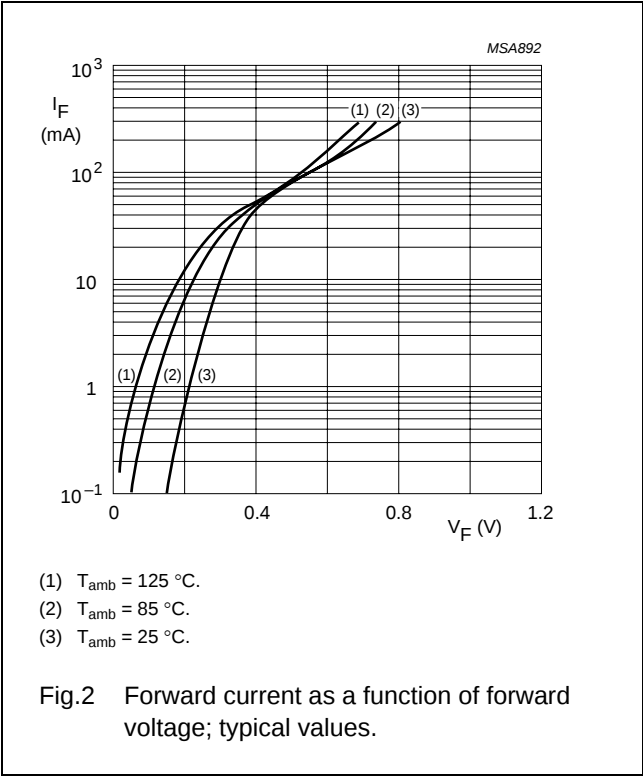
**Soldering**

The only recommended soldering method is reflow soldering.

Schottky barrier double diode

BAT74V

GRAPHICAL DATA



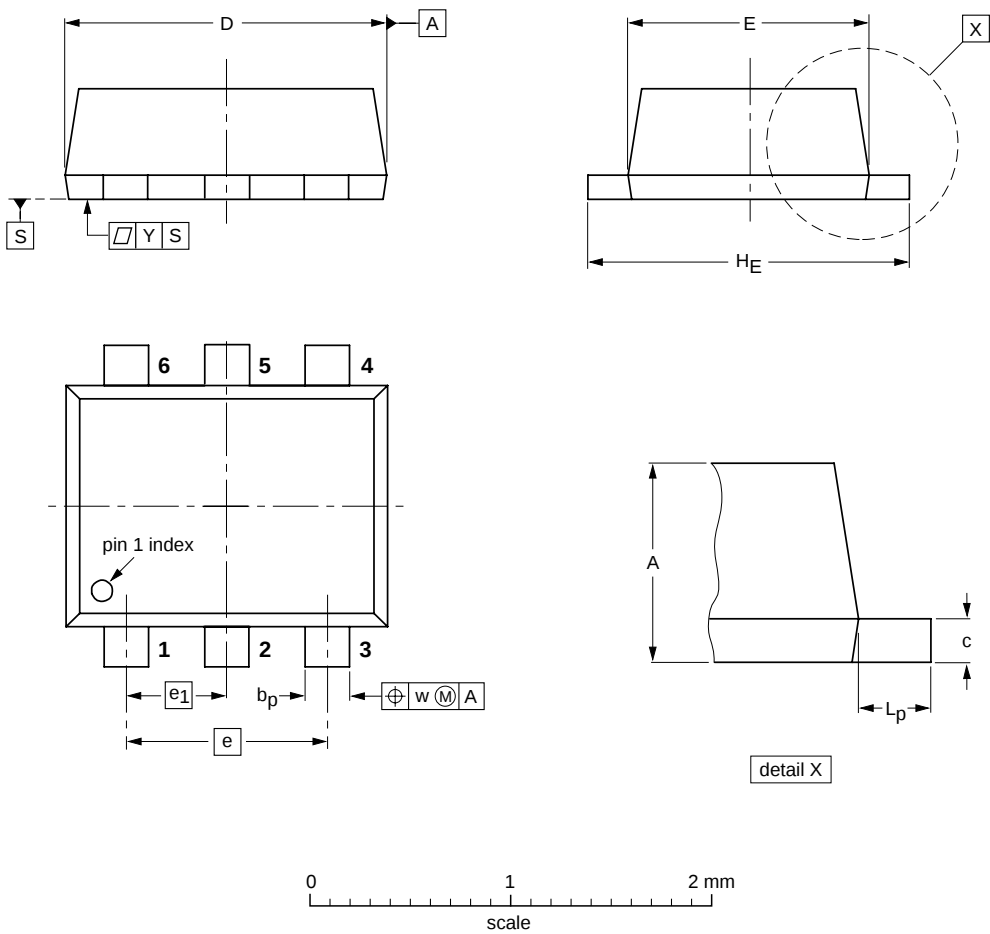
Schottky barrier double diode

BAT74V

PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT666



DIMENSIONS (mm are the original dimensions)

| UNIT | A          | b <sub>p</sub> | c            | D          | E          | e   | e <sub>1</sub> | H <sub>E</sub> | L <sub>p</sub> | w   | y   |
|------|------------|----------------|--------------|------------|------------|-----|----------------|----------------|----------------|-----|-----|
| mm   | 0.6<br>0.5 | 0.27<br>0.17   | 0.18<br>0.08 | 1.7<br>1.5 | 1.3<br>1.1 | 1.0 | 0.5            | 1.7<br>1.5     | 0.3<br>0.1     | 0.1 | 0.1 |

| OUTLINE<br>VERSION | REFERENCES |       |      |  | EUROPEAN<br>PROJECTION                                                                | ISSUE DATE           |
|--------------------|------------|-------|------|--|---------------------------------------------------------------------------------------|----------------------|
|                    | IEC        | JEDEC | EIAJ |  |                                                                                       |                      |
| SOT666             |            |       |      |  |  | 01-01-04<br>01-08-27 |

## Schottky barrier double diode

BAT74V

## DATA SHEET STATUS

| DOCUMENT STATUS <sup>(1)</sup> | PRODUCT STATUS <sup>(2)</sup> | DEFINITION                                                                            |
|--------------------------------|-------------------------------|---------------------------------------------------------------------------------------|
| Objective data sheet           | Development                   | This document contains data from the objective specification for product development. |
| Preliminary data sheet         | Qualification                 | This document contains data from the preliminary specification.                       |
| Product data sheet             | Production                    | This document contains the product specification.                                     |

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# ***NXP Semiconductors***

## **Customer notification**

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## **Contact information**

For additional information please visit: **<http://www.nxp.com>**

For sales offices addresses send e-mail to: **[salesaddresses@nxp.com](mailto:salesaddresses@nxp.com)**

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