



**THE DATASHEET OF  
BAV199W,115**



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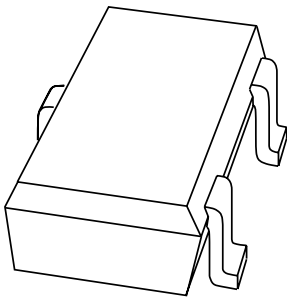
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Kind regards,

Team Nexperia

# DATA SHEET



**BAV199W**

Low-leakage double diode

Product data sheet  
Supersedes data of 1998 Jan 09

1999 May 11

# Low-leakage double diode

# BAV199W

## FEATURES

- Small plastic SMD package
- Low leakage current: typ. 3 pA
- Switching time: typ. 0.8  $\mu$ s
- Continuous reverse voltage: max. 75 V
- Repetitive peak reverse voltage: max. 85 V
- Repetitive peak forward current: max. 500 mA.

## APPLICATIONS

- Low-leakage current applications in surface mounted circuits.

## DESCRIPTION

Epitaxial, medium-speed switching, double diode in a small plastic SOT323 (SC-70) SMD package. The diodes are connected in series.

## PINNING

| PIN | DESCRIPTION    |
|-----|----------------|
| 1   | anode          |
| 2   | cathode        |
| 3   | cathode; anode |

Top view MAM391

**Marking code:** JY- = made in Hong Kong; JYt = made in Malaysia.

Fig.1 Simplified outline (SOT323; SC-70) and symbol.

## LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

| SYMBOL                                      | PARAMETER                           | CONDITIONS  | MIN. | MAX. | UNIT             |
|---|-------------------------------------|---|------|------|------------------|
| <b>Per diode unless otherwise specified</b> |                                     |   |      |      |                  |
| $V_{RRM}$                                   | repetitive peak reverse voltage     |   | –    | 85   | V                |
| $V_R$                                       | continuous reverse voltage          |   | –    | 75   | V                |
| $I_F$                                       | continuous forward current          | single diode loaded; $T_s = 90\text{ }^\circ\text{C}$ ; see Fig.2       | –    | 135  | mA               |
|   |                                     | double diode loaded; $T_s = 90\text{ }^\circ\text{C}$ ; see Fig.2       | –    | 110  | mA               |
| $I_{FRM}$                                   | repetitive peak forward current     |   | –    | 500  | mA               |
| $I_{FSM}$                                   | non-repetitive peak forward current | square wave; $T_j = 25\text{ }^\circ\text{C}$ prior to surge; see Fig.4 |      |      |                  |
|   |                                     | $t_p = 1\text{ }\mu\text{s}$  | –    | 4    | A                |
|   |                                     | $t_p = 1\text{ ms}$   | –    | 1    | A                |
|   |                                     | $t_p = 1\text{ s}$  | –    | 0.5  | A                |
| $P_{tot}$                                   | total power dissipation             | single diode loaded; $T_s = 90\text{ }^\circ\text{C}$                   | –    | 150  | mW               |
|   |                                     | double diode loaded; $T_s = 90\text{ }^\circ\text{C}$                   | –    | 240  | mW               |
| $T_{stg}$                                   | storage temperature                 |   | –65  | +150 | $^\circ\text{C}$ |
| $T_j$                                       | junction temperature                |   | –    | 150  | $^\circ\text{C}$ |

## Low-leakage double diode

BAV199W

**ELECTRICAL CHARACTERISTICS** $T_j = 25\text{ °C}$  unless otherwise specified.

| SYMBOL           | PARAMETER             | CONDITIONS   | TYP.  | MAX. | UNIT          |
|------------------|-----------------------|--|-------|------|---------------|
| <b>Per diode</b> |                       |  |       |      |               |
| $V_F$            | forward voltage       | see Fig.3  |       |      |               |
|                  |                       | $I_F = 1\text{ mA}$  | –     | 900  | mV            |
|                  |                       | $I_F = 10\text{ mA}$   | –     | 1000 | mV            |
|                  |                       | $I_F = 50\text{ mA}$   | –     | 1100 | mV            |
|                  |                       | $I_F = 150\text{ mA}$  | –     | 1250 | mV            |
| $I_R$            | reverse current       | see Fig.5  |       |      |               |
|                  |                       | $V_R = 75\text{ V}$  | 0.003 | 5    | nA            |
|                  |                       | $V_R = 75\text{ V}; T_j = 150\text{ °C}$   | 3     | 80   | nA            |
| $C_d$            | diode capacitance     | $f = 1\text{ MHz}; V_R = 0$ ; see Fig.6  | 2     | –    | pF            |
| $t_{rr}$         | reverse recovery time | when switched from $I_F = 10\text{ mA}$ to $I_R = 10\text{ mA}; R_L = 100\ \Omega$ ; measured at $I_R = 1\text{ mA}$ ; see Fig.7 | 0.8   | 3    | $\mu\text{s}$ |

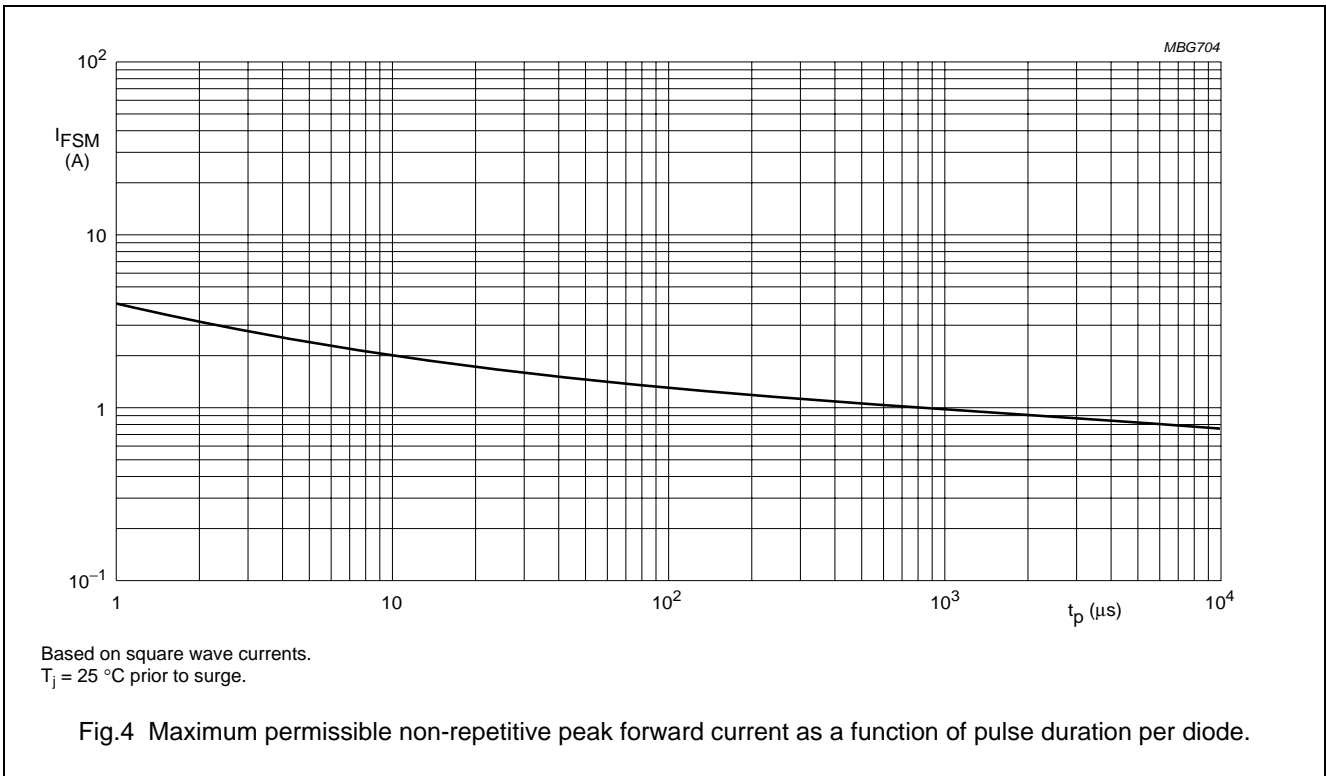
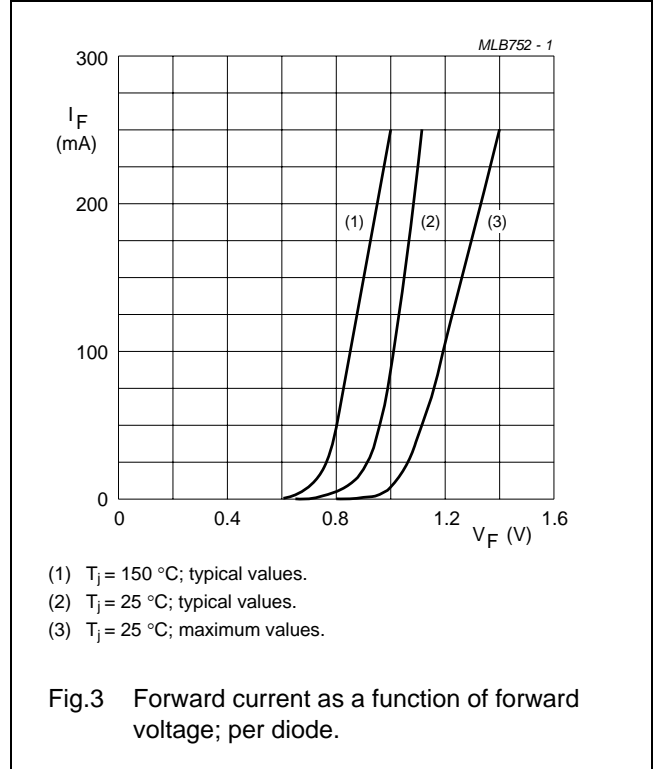
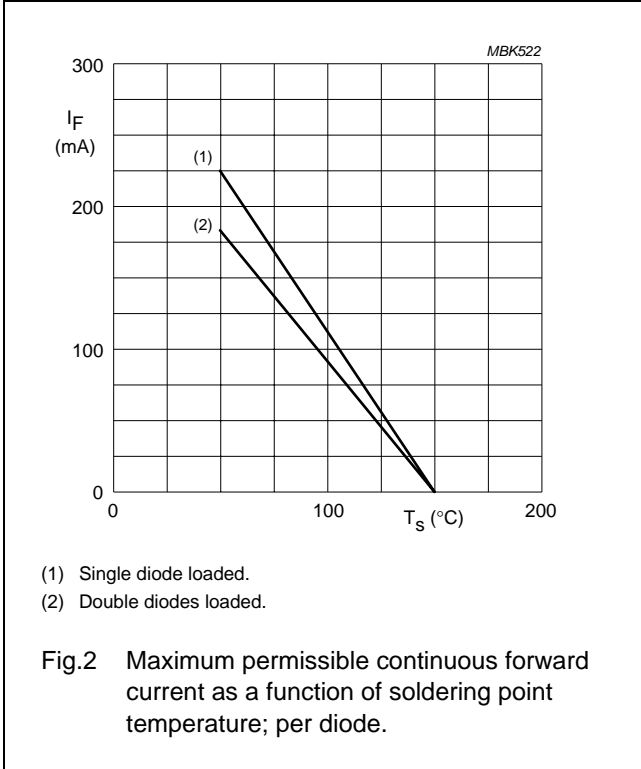
**THERMAL CHARACTERISTICS**

| SYMBOL        | PARAMETER   | CONDITIONS           | VALUE | UNIT |
|---------------|---|----------------------|-------|------|
| $R_{th\ j-s}$ | thermal resistance from junction to soldering point | $T_s = 90\text{ °C}$ | 400   | K/W  |

Low-leakage double diode

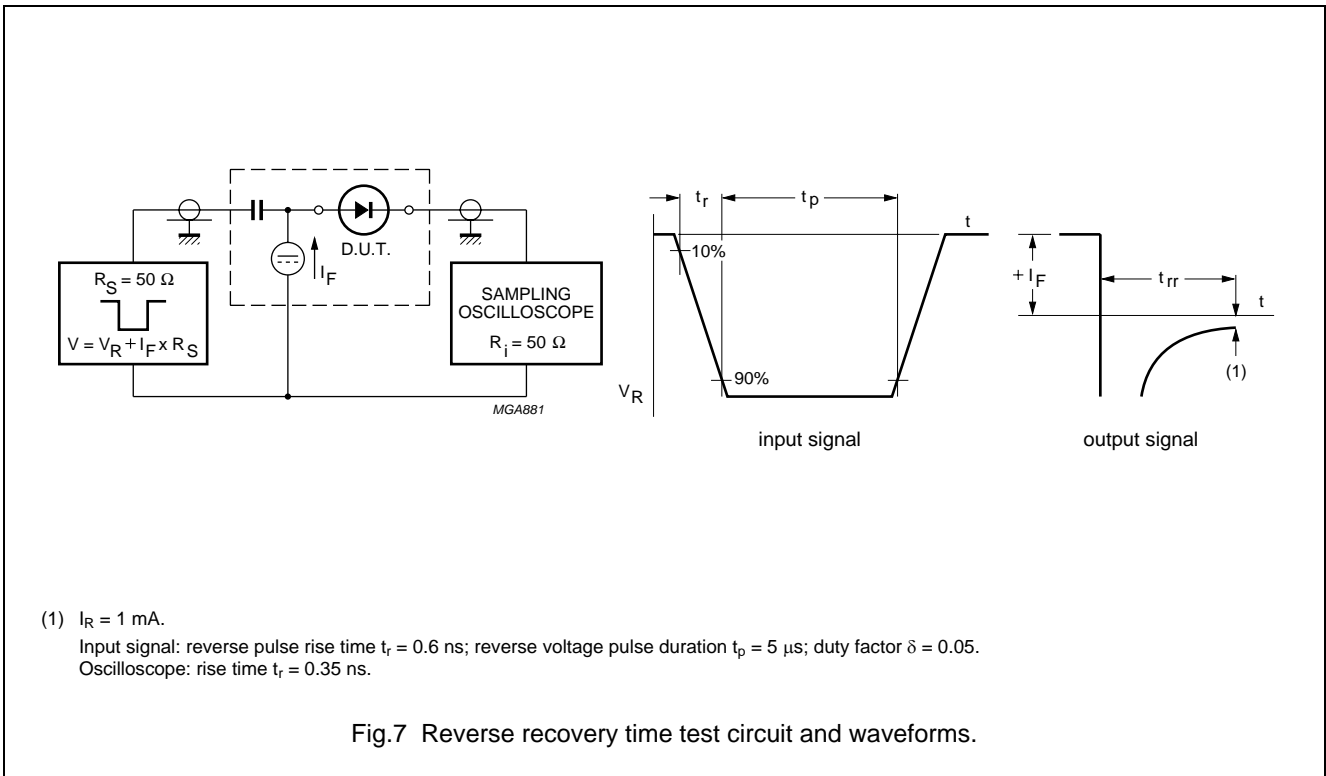
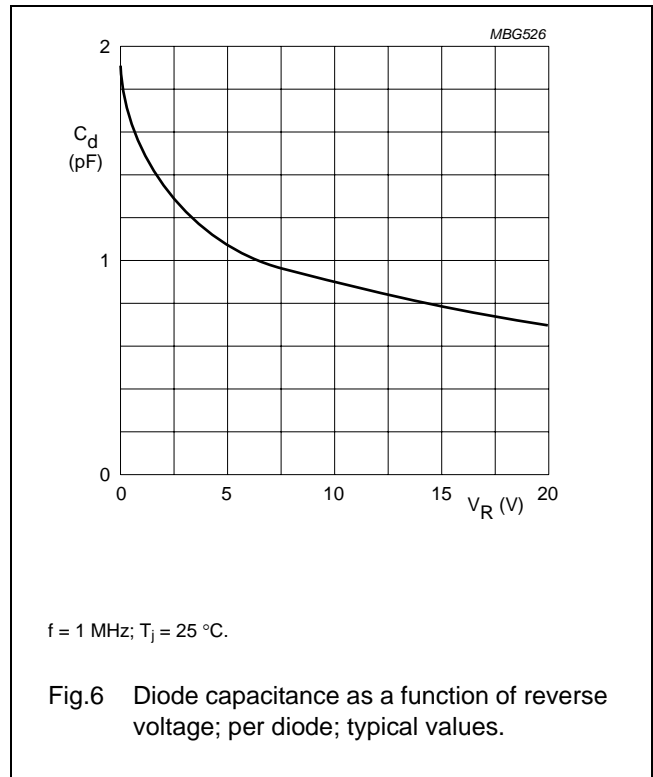
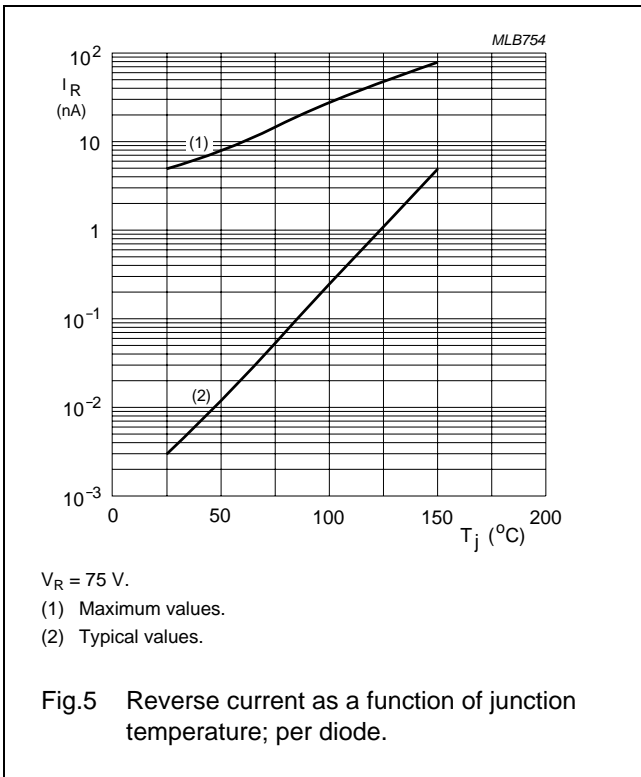
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GRAPHICAL DATA



Low-leakage double diode

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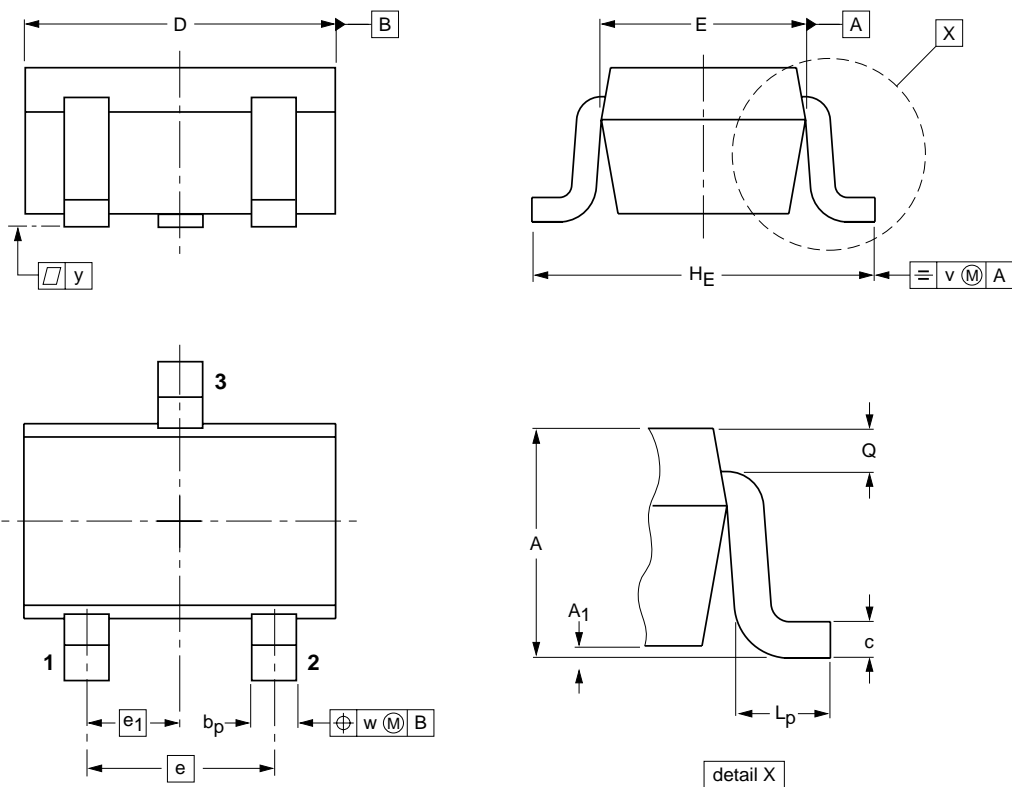
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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



DIMENSIONS (mm are the original dimensions)

| UNIT | A          | A <sub>1</sub><br>max | b <sub>p</sub> | c            | D          | E            | e   | e <sub>1</sub> | H <sub>E</sub> | L <sub>p</sub> | Q            | v   | w   |
|------|------------|-----------------------|----------------|--------------|------------|--------------|-----|----------------|----------------|----------------|--------------|-----|-----|
| mm   | 1.1<br>0.8 | 0.1                   | 0.4<br>0.3     | 0.25<br>0.10 | 2.2<br>1.8 | 1.35<br>1.15 | 1.3 | 0.65           | 2.2<br>2.0     | 0.45<br>0.15   | 0.23<br>0.13 | 0.2 | 0.2 |

| OUTLINE VERSION | REFERENCES |       |       | EUROPEAN PROJECTION | ISSUE DATE |
|-----------------|------------|-------|-------|---------------------|------------|
|                 | IEC        | JEDEC | EIAJ  |                     |            |
| SOT323          |            |       | SC-70 |                     | 97-02-28   |

# Low-leakage double diode

# BAV199W

## 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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## **Contact information**

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

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