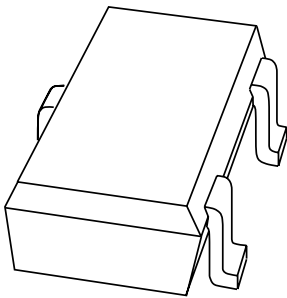


DATA SHEET



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 μs
- Continuous reverse voltage: max. 75 V
- Repetitive peak reverse voltage: max. 85 V
- Repetitive peak forward current: max. 500 mA.

APPLICATIONS

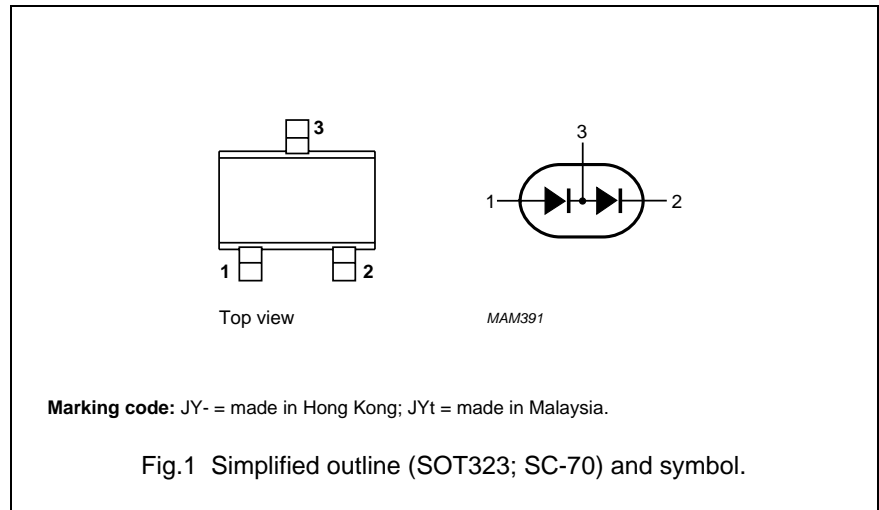
- Low-leakage current applications in surface mounted circuits.

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 |



LIMITING VALUES

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|---|-------------------------------------|---|------|------|------|
| Per diode unless otherwise specified | | | | | |
| V _R | continuous reverse voltage | | – | 75 | V |
| V _{RRM} | repetitive peak reverse voltage | | – | 85 | V |
| I _F | continuous forward current | single diode loaded; T _s = 90 °C; see Fig.2 | – | 135 | mA |
| | | double diode loaded; T _s = 90 °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 °C prior to surge; see Fig.4 | | | |
| | | t _p = 1 μs | – | 4 | A |
| | | t _p = 1 ms | – | 1 | A |
| | | t _p = 1 s | – | 0.5 | A |
| P _{tot} | total power dissipation | single diode loaded; T _s = 90 °C | – | 150 | mW |
| | | double diode loaded; T _s = 90 °C | – | 240 | mW |
| T _{stg} | storage temperature | | –65 | +150 | °C |
| T _j | junction temperature | | – | 150 | °C |

Low-leakage double diode

BAV199W

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

| SYMBOL | PARAMETER | CONDITIONS | TYP. | MAX. | UNIT |
|------------------|-----------------------|---|-------|------|---------------|
| Per diode | | | | | |
| 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 | μs |

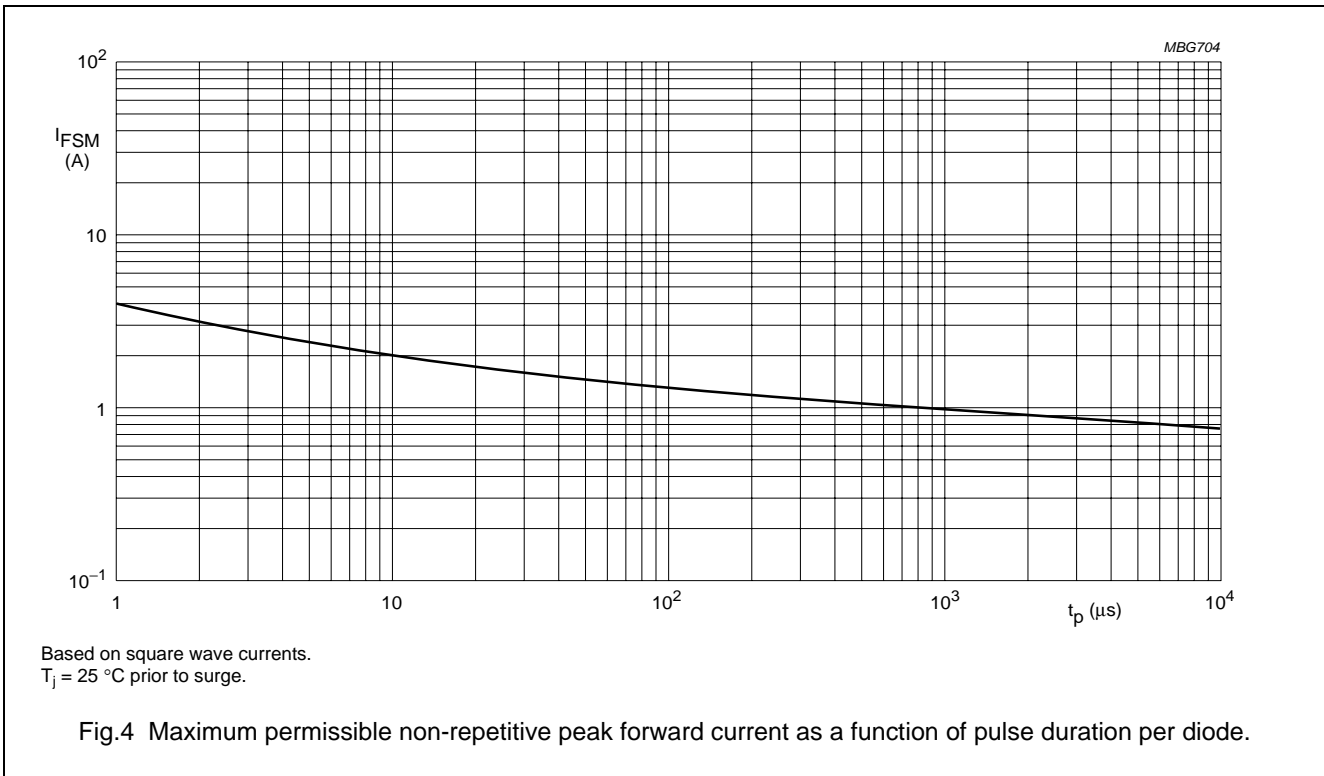
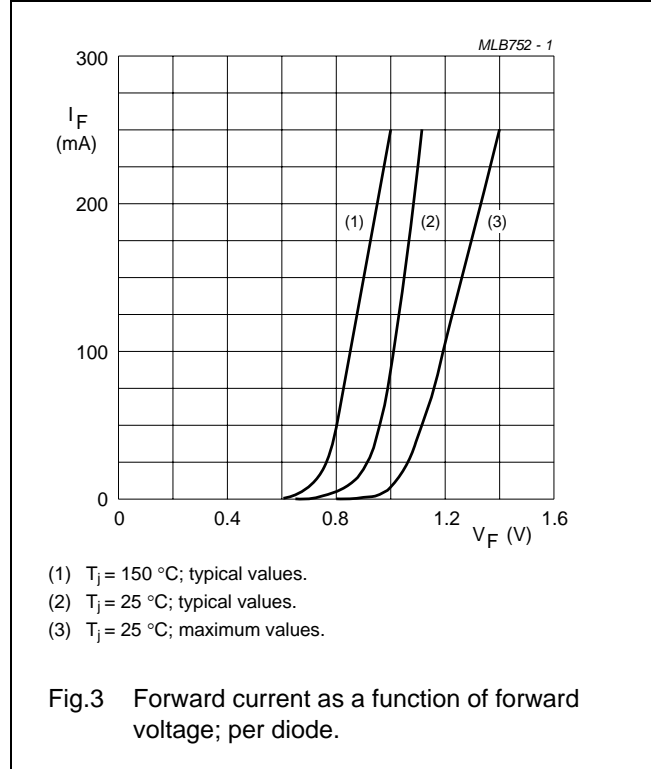
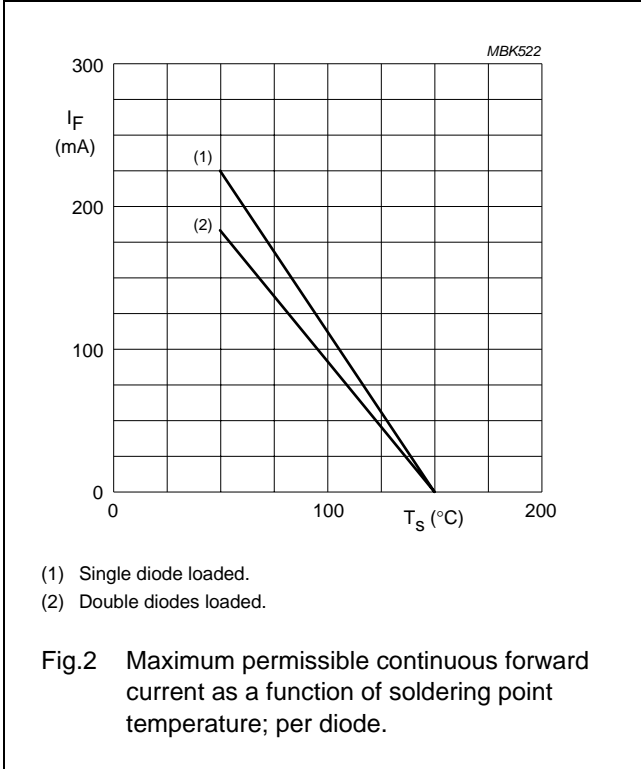
THERMAL CHARACTERISTICS

| 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

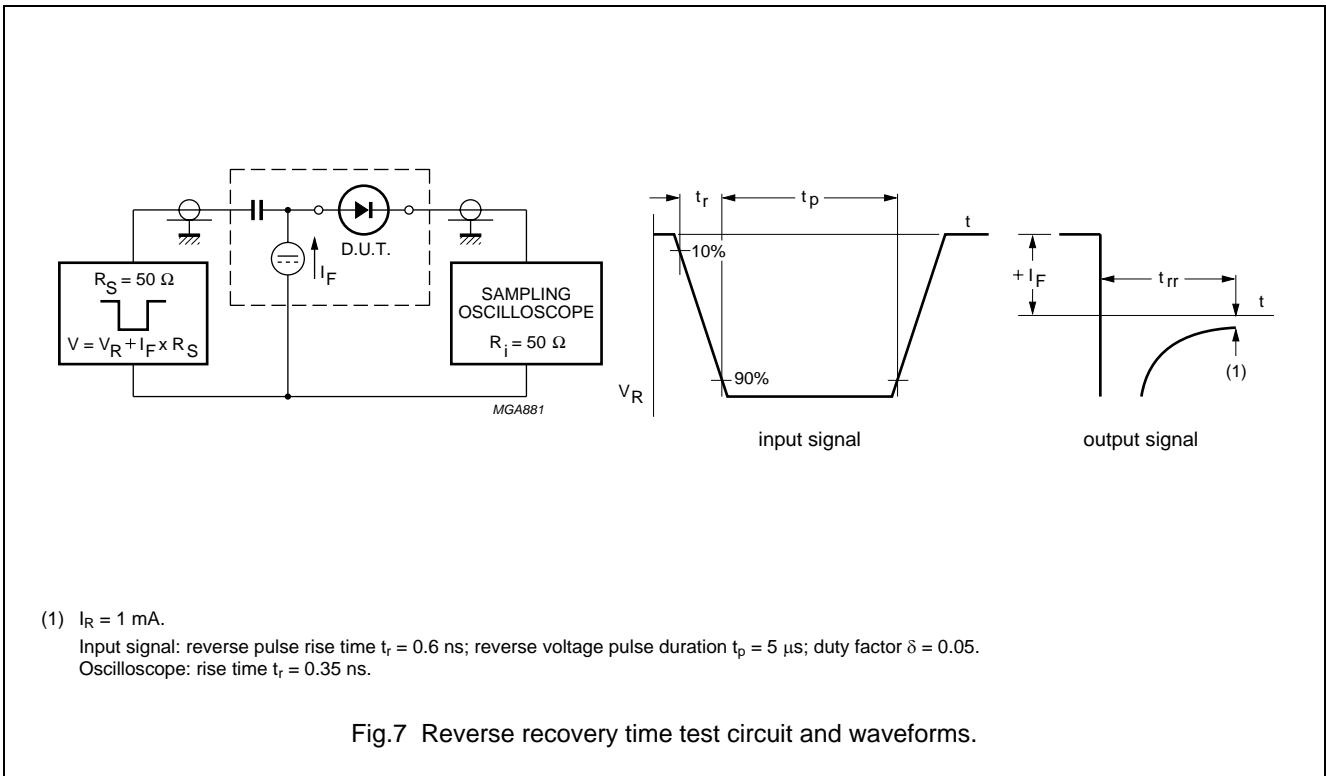
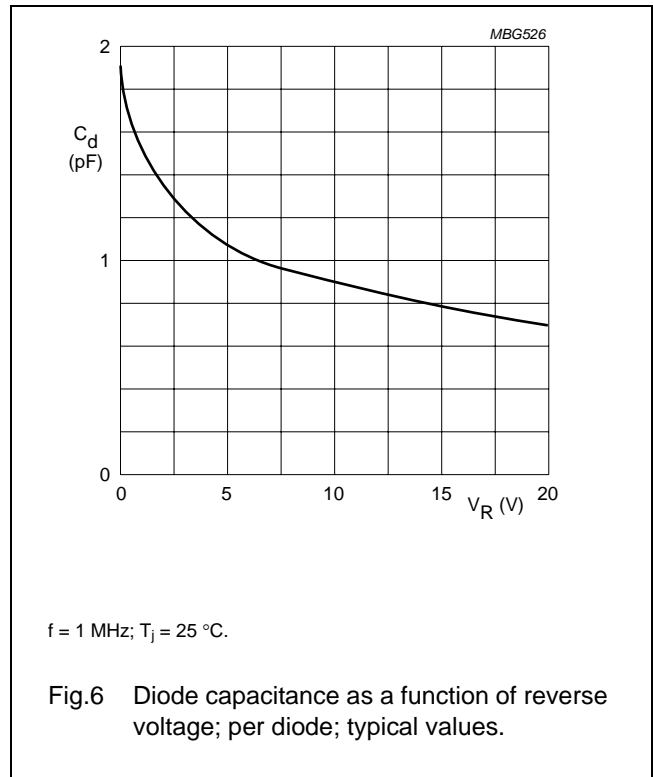
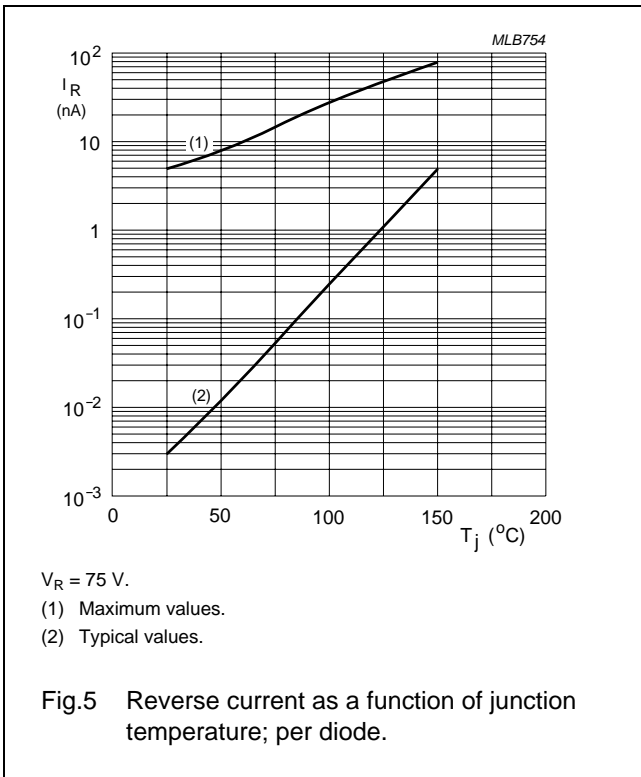
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GRAPHICAL DATA



Low-leakage double diode

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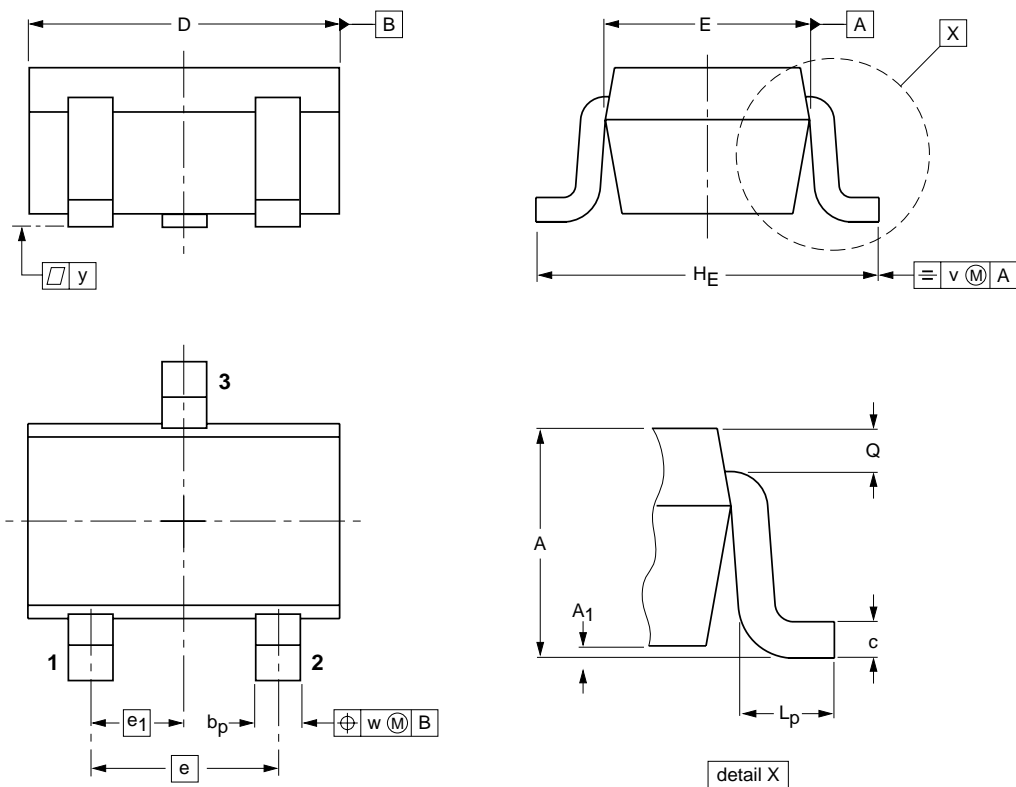
Low-leakage double diode

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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



DIMENSIONS (mm are the original dimensions)

| UNIT | A | A ₁ max | b _p | c | D | E | e | e ₁ | H _E | L _p | Q | v | w |
|------|------------|-----------------------|----------------|--------------|------------|--------------|-----|----------------|----------------|----------------|--------------|-----|-----|
| mm | 1.1 0.8 | 0.1 | 0.4 0.3 | 0.25 0.10 | 2.2 1.8 | 1.35 1.15 | 1.3 | 0.65 | 2.2 2.0 | 0.45 0.15 | 0.23 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 ⁽¹⁾ | PRODUCT STATUS ⁽²⁾ | 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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