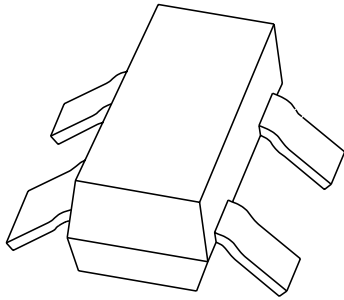


DATA SHEET



BAV23

General purpose double diode

Product specification
Supersedes data of April 1996

1996 Sep 17

General purpose double diode

BAV23

FEATURES

- Small plastic SMD package
- Switching speed: max. 50 ns
- General application
- Continuous reverse voltage: max. 200 V
- Repetitive peak reverse voltage: max. 250 V
- Repetitive peak forward current: max. 625 mA.

APPLICATIONS

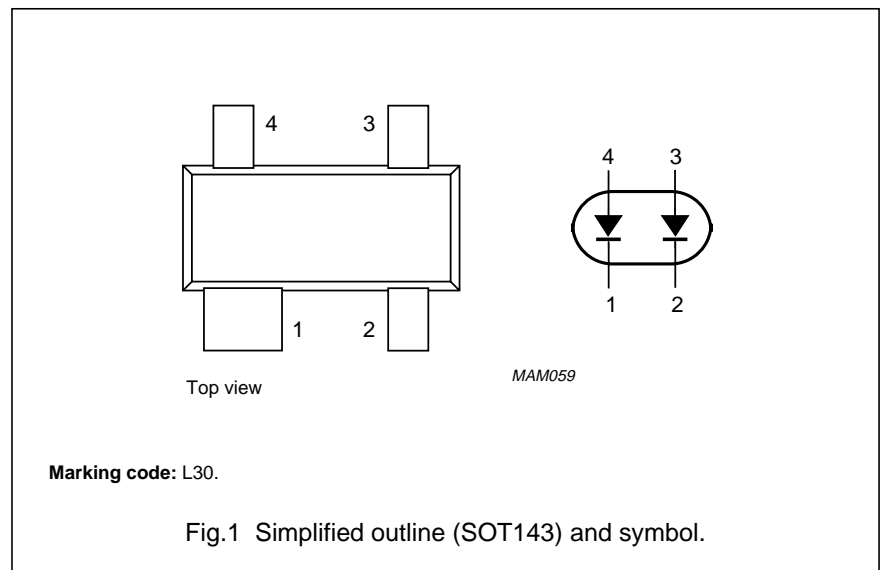
- General purpose where high breakdown voltages are required.

DESCRIPTION

The BAV23 consists of two general purpose diodes fabricated in planar technology, and encapsulated in the small plastic SMD SOT143 package. The diodes are not connected.

PINNING

| PIN | DESCRIPTION |
|-----|--------------|
| 1 | cathode (k1) |
| 2 | cathode (k2) |
| 3 | anode (a2) |
| 4 | anode (a1) |



General purpose double diode

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LIMITING VALUES

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-----------|-------------------------------------|--|------|------|------|
| V_{RRM} | repetitive peak reverse voltage | | – | 250 | V |
| V_{RRM} | repetitive peak reverse voltage | series connection | | 500 | V |
| V_R | continuous reverse voltage | | – | 200 | V |
| V_R | continuous reverse voltage | series connection | – | 400 | V |
| I_F | continuous forward current | single diode loaded; see Fig.2; note 1 | – | 225 | mA |
| | | double diode loaded; see Fig.2; note 1 | – | 125 | mA |
| I_{FRM} | repetitive peak forward current | | – | 625 | mA |
| I_{FSM} | non-repetitive peak forward current | square wave; $T_j = 25\text{ °C}$ prior to surge; see Fig.4 | | | |
| | | $t = 1\ \mu\text{s}$ | – | 9 | A |
| | | $t = 100\ \mu\text{s}$ | – | 3 | A |
| | | $t = 10\ \text{ms}$ | – | 1.7 | A |
| P_{tot} | total power dissipation | $T_{amb} = 25\text{ °C}$; note 1 | – | 250 | mW |
| T_{stg} | storage temperature | | –65 | +150 | °C |
| T_j | junction temperature | | – | 150 | °C |

Note

1. Device mounted on an FR4 printed-circuit board.

General purpose double diode

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ELECTRICAL CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|----------|-----------------------|--|------|------|---------------|
| V_F | forward voltage | see Fig.3 | | | |
| | | $I_F = 100\text{ mA}$ | – | 1.0 | V |
| | | $I_F = 200\text{ mA}$ | – | 1.25 | V |
| V_F | forward voltage | series connection; see Fig.3 | | | |
| | | $I_F = 100\text{ mA}$ | – | 2.0 | V |
| | | $I_F = 200\text{ mA}$ | – | 2.5 | V |
| I_R | reverse current | see Fig.5 | | | |
| | | $V_R = 200\text{ V}$ | – | 100 | nA |
| | | $V_R = 200\text{ V}; T_j = 150\text{ °C}$ | – | 100 | μA |
| I_R | reverse current | series connection | | | |
| | | $V_R = 400\text{ V}$ | – | 100 | nA |
| | | $V_R = 400\text{ V}; T_j = 150\text{ °C}$ | – | 100 | μA |
| C_d | diode capacitance | $f = 1\text{ MHz}; V_R = 0$; see Fig.6 | – | 5 | pF |
| | | series connection; $f = 1\text{ MHz}; V_R = 0$; see Fig.6 | – | 2.5 | pF |
| t_{rr} | reverse recovery time | when switched from $I_F = 30\text{ mA}$ to $I_R = 30\text{ mA}; R_L = 100\ \Omega$; measured at $I_R = 3\text{ mA}$; see Fig.7 | – | 50 | ns |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|----------------|---|------------|-------|------|
| $R_{th\ j-tp}$ | thermal resistance from junction to tie-point | | 360 | K/W |
| $R_{th\ j-a}$ | thermal resistance from junction to ambient | note 1 | 500 | K/W |

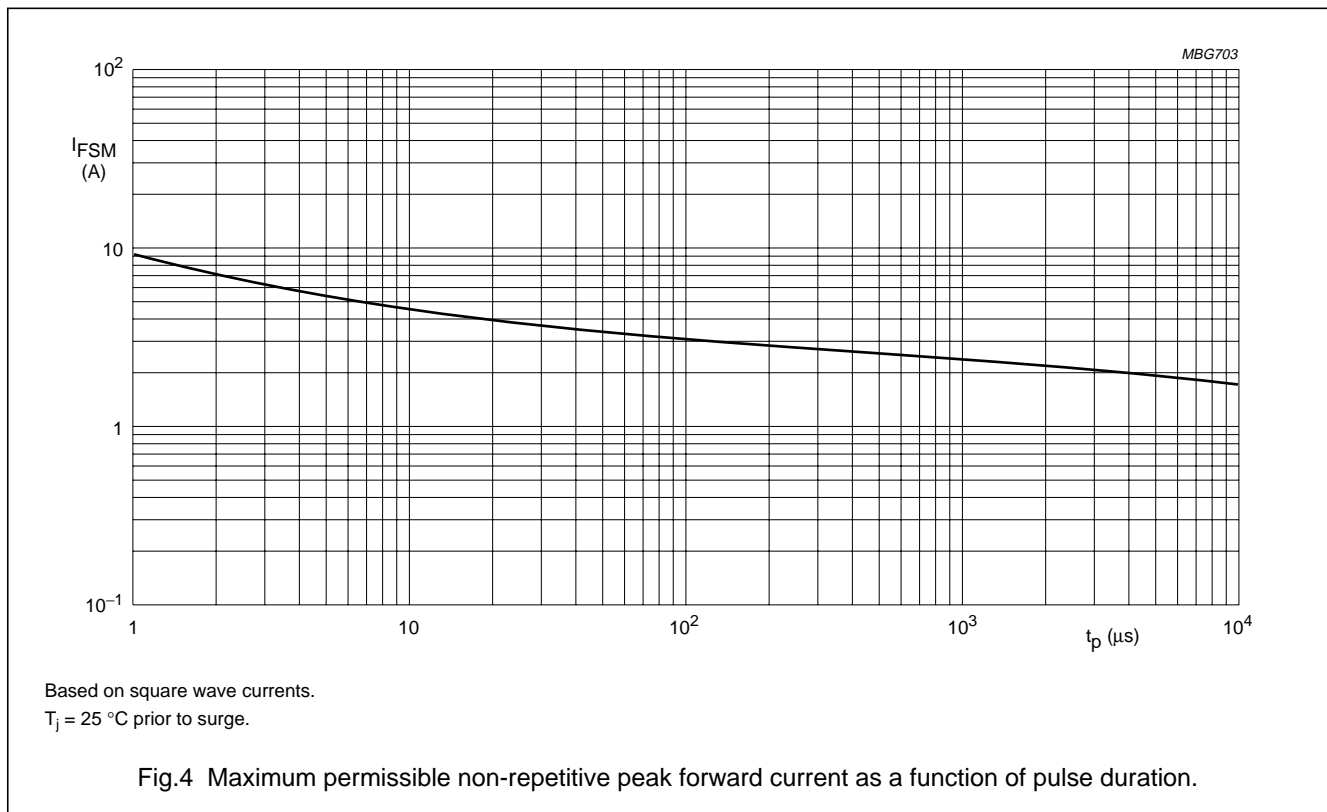
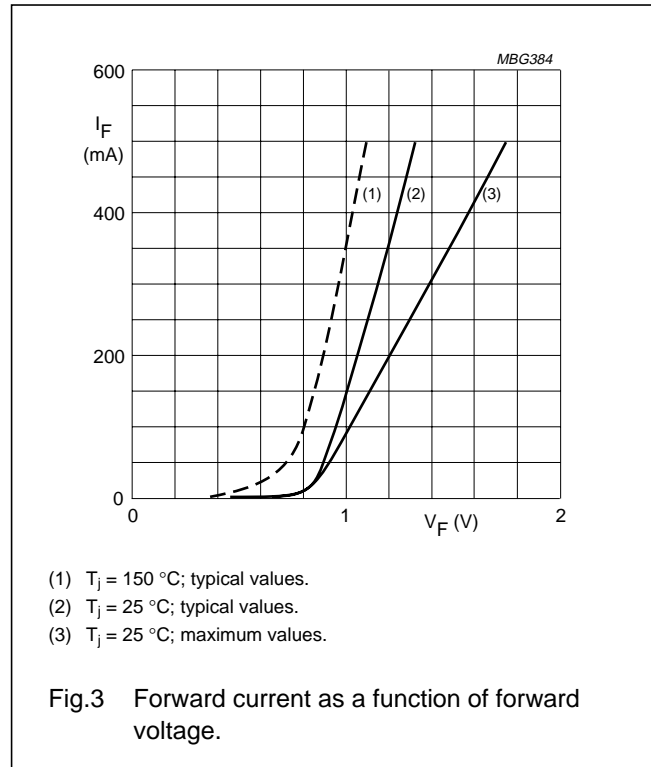
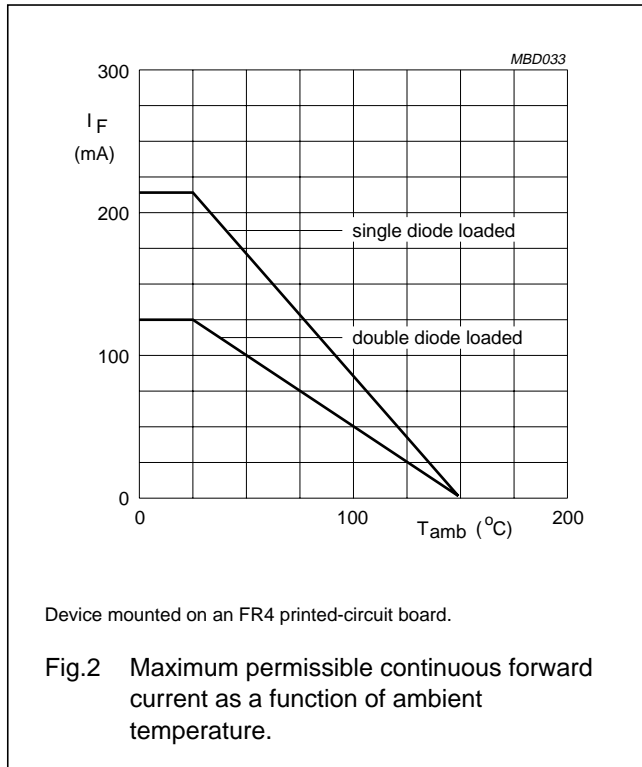
Note

1. Device mounted on an FR4 printed-circuit board.

General purpose double diode

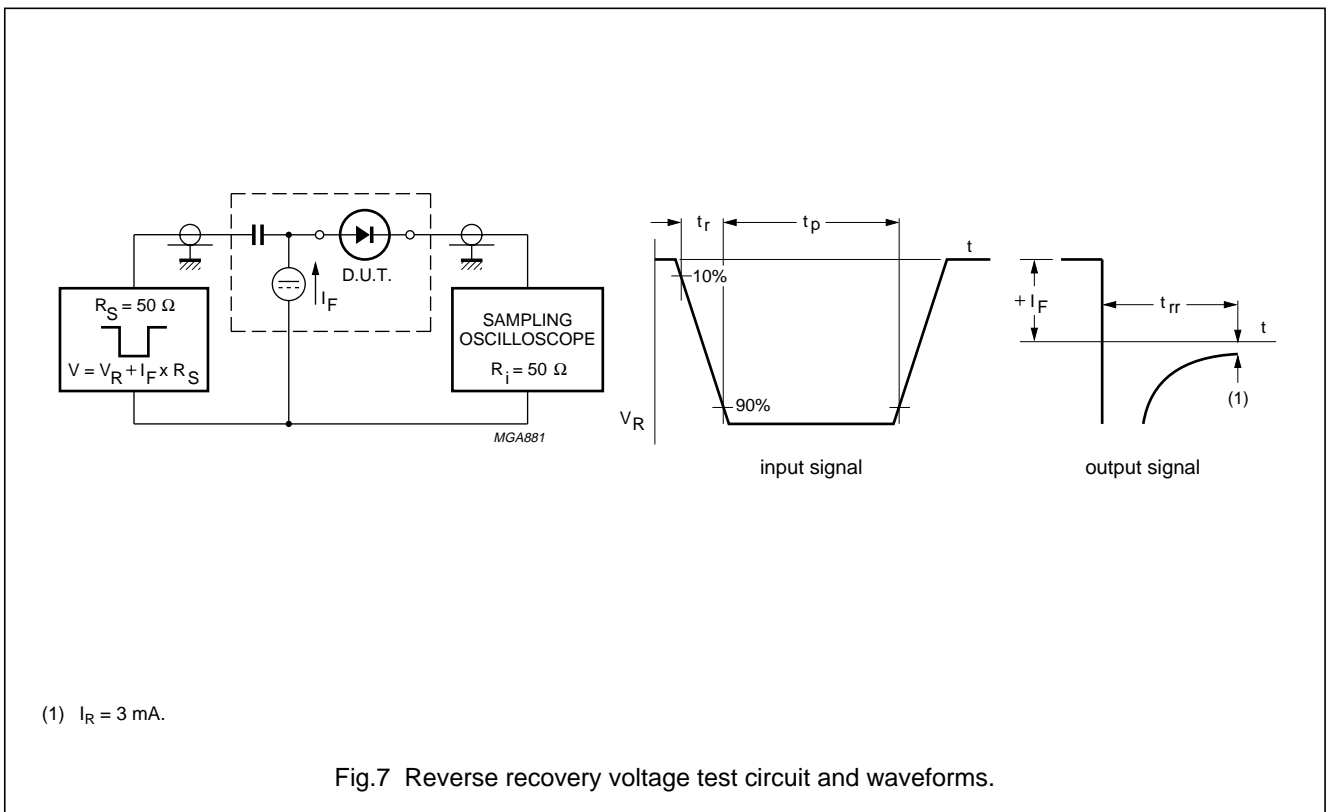
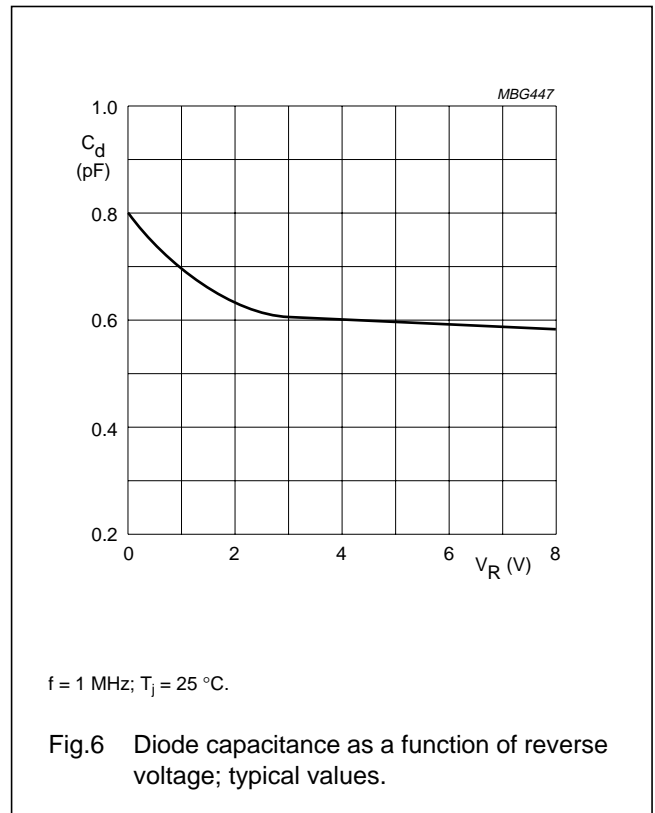
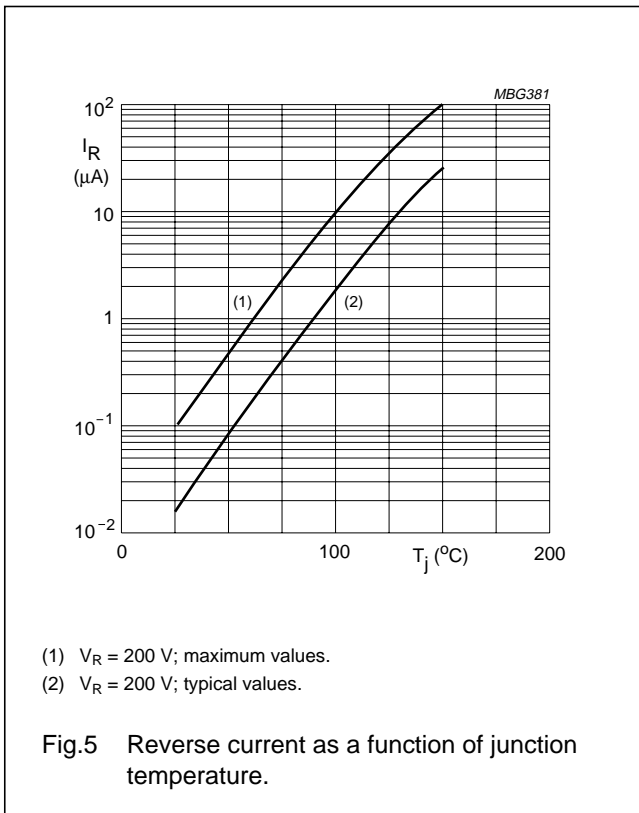
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GRAPHICAL DATA



General purpose double diode

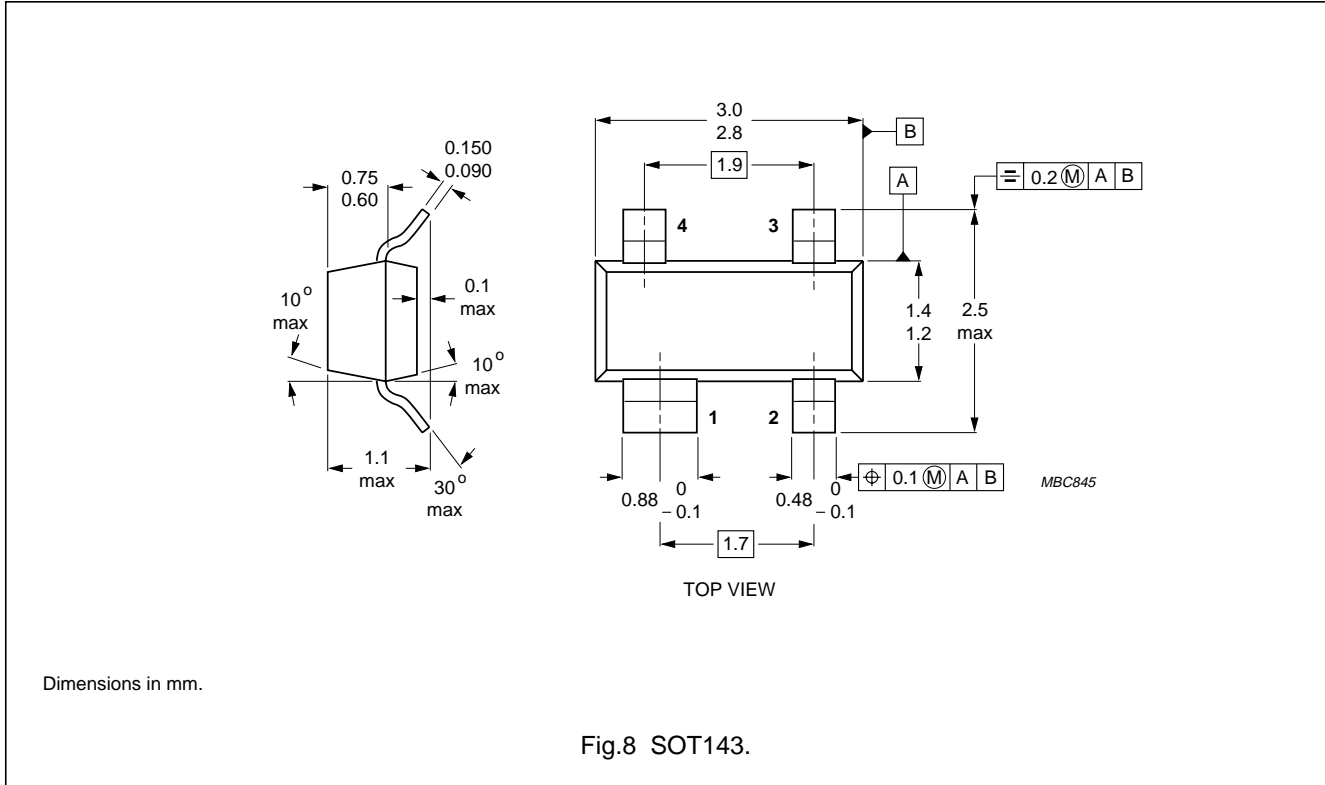
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General purpose double diode

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PACKAGE OUTLINE



DEFINITIONS

| | |
|---|---|
| Data Sheet Status | |
| Objective specification | This data sheet contains target or goal specifications for product development. |
| Preliminary specification | This data sheet contains preliminary data; supplementary data may be published later. |
| Product specification | This data sheet contains final product specifications. |
| Limiting values | |
| Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability. | |
| Application information | |
| Where application information is given, it is advisory and does not form part of the specification. | |

LIFE SUPPORT APPLICATIONS

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.