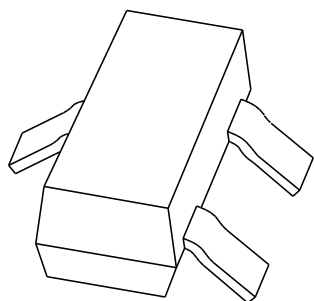


# DATA SHEET



**BAV23S**

General purpose double diode

Product specification  
Supersedes data of November 1993  
File under Discrete Semiconductors, SC01

1996 Apr 17

# General purpose double diode

# BAV23S

## 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
- Forward voltage: max. 1 V.

## APPLICATIONS

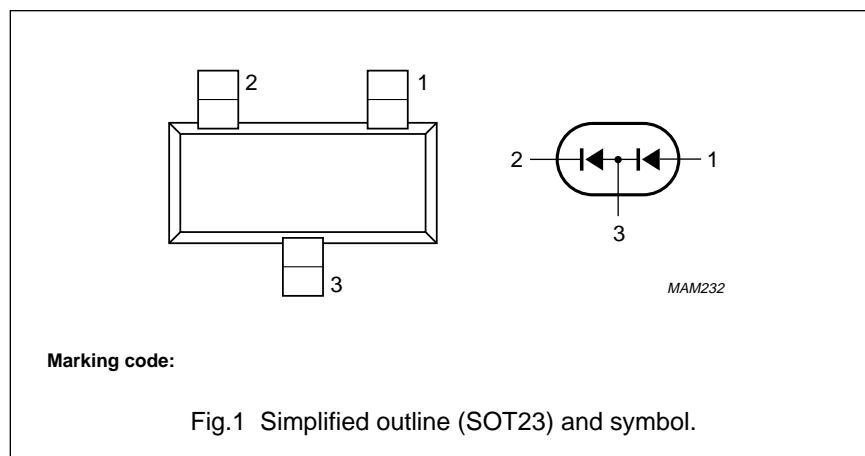
- General purpose where high breakdown voltages are required.

## DESCRIPTION

The BAV23S consists of two general purpose diodes connected in series fabricated in planar technology, and encapsulated in the small plastic SMD SOT23 package.

## PINNING

PIN	DESCRIPTION
1	anode
2	cathode
3	common connection



## LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per diode</b>					
$V_{RRM}$	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
<b>Per diode</b>					
$V_F$	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	$\mu\text{A}$
$I_R$	reverse current	series connection $V_R = 400\text{ V}$	–	100	nA
		$V_R = 400\text{ V}; T_j = 150\text{ °C}$	–	100	$\mu\text{A}$
$C_d$	diode capacitance	$f = 1\text{ MHz}; V_R = 0$ ; see Fig.6	–	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

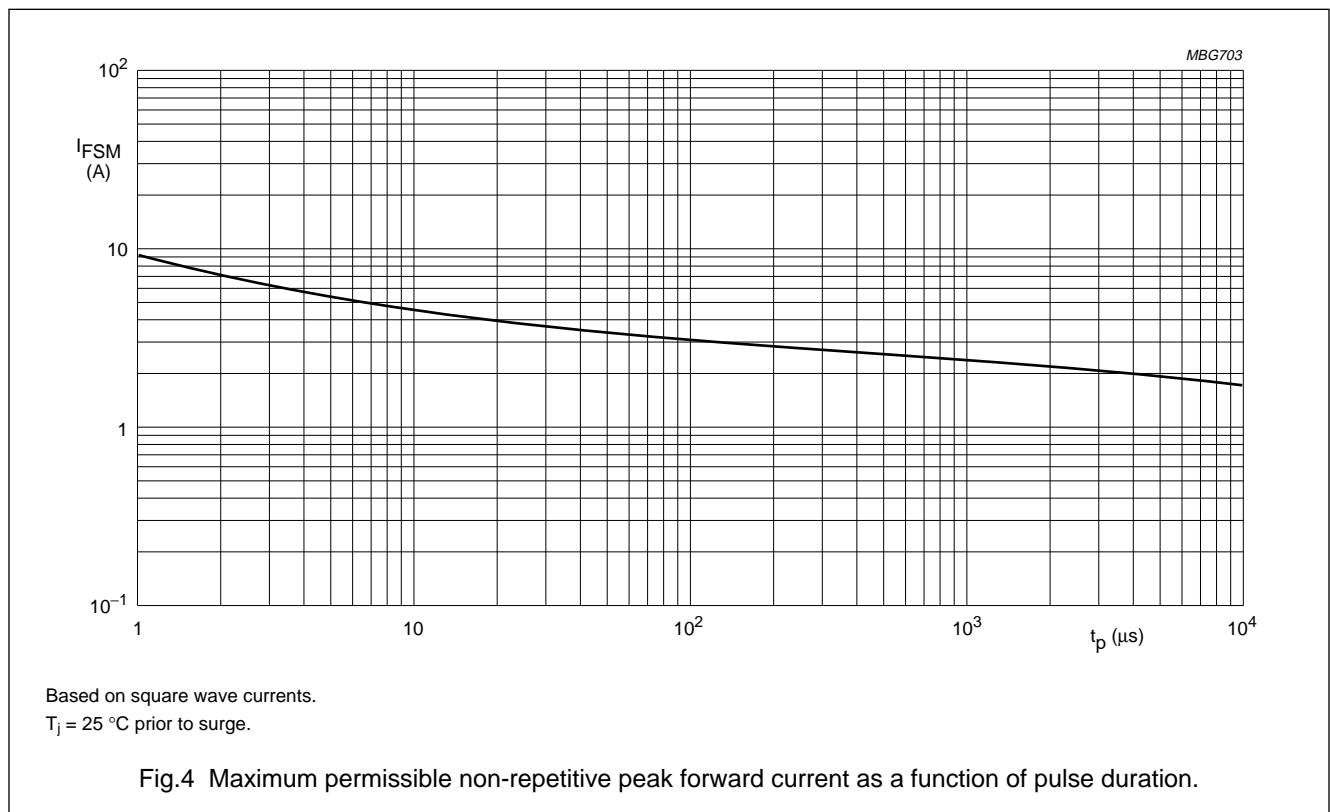
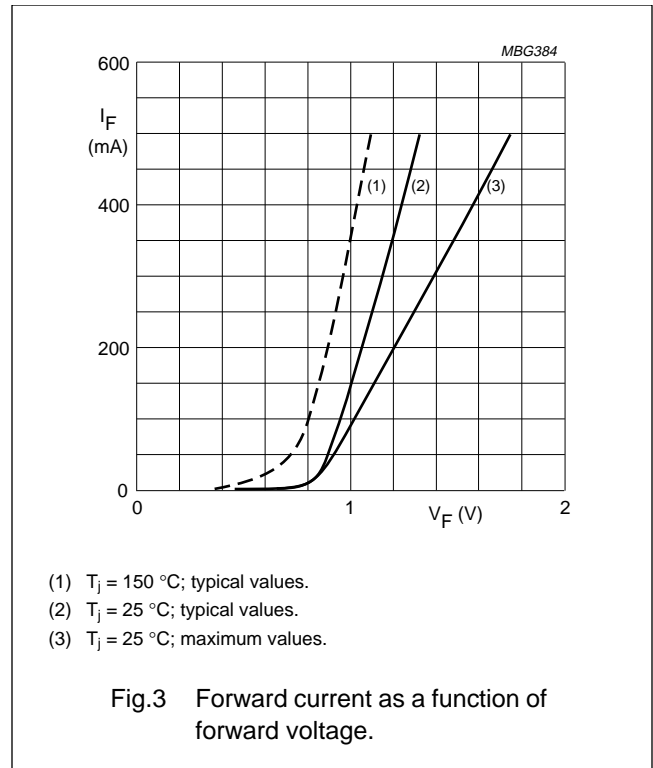
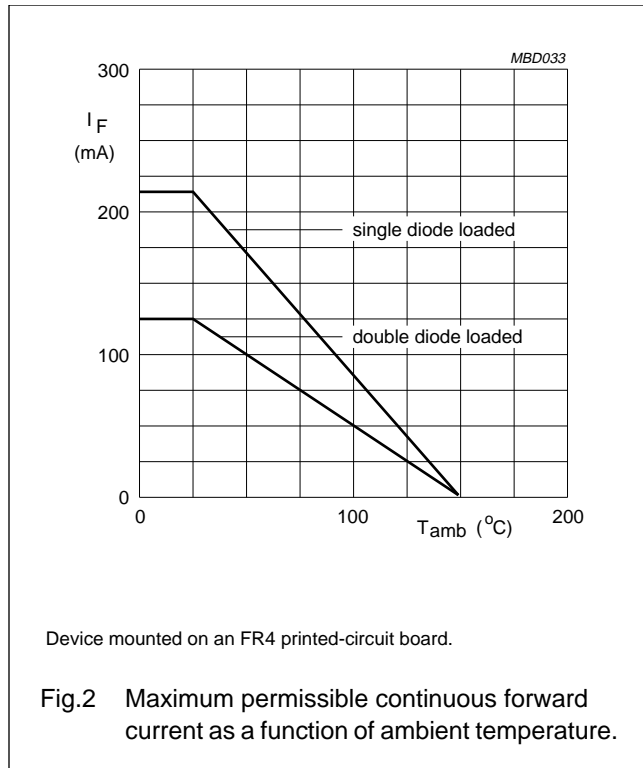
**Note**

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

General purpose double diode

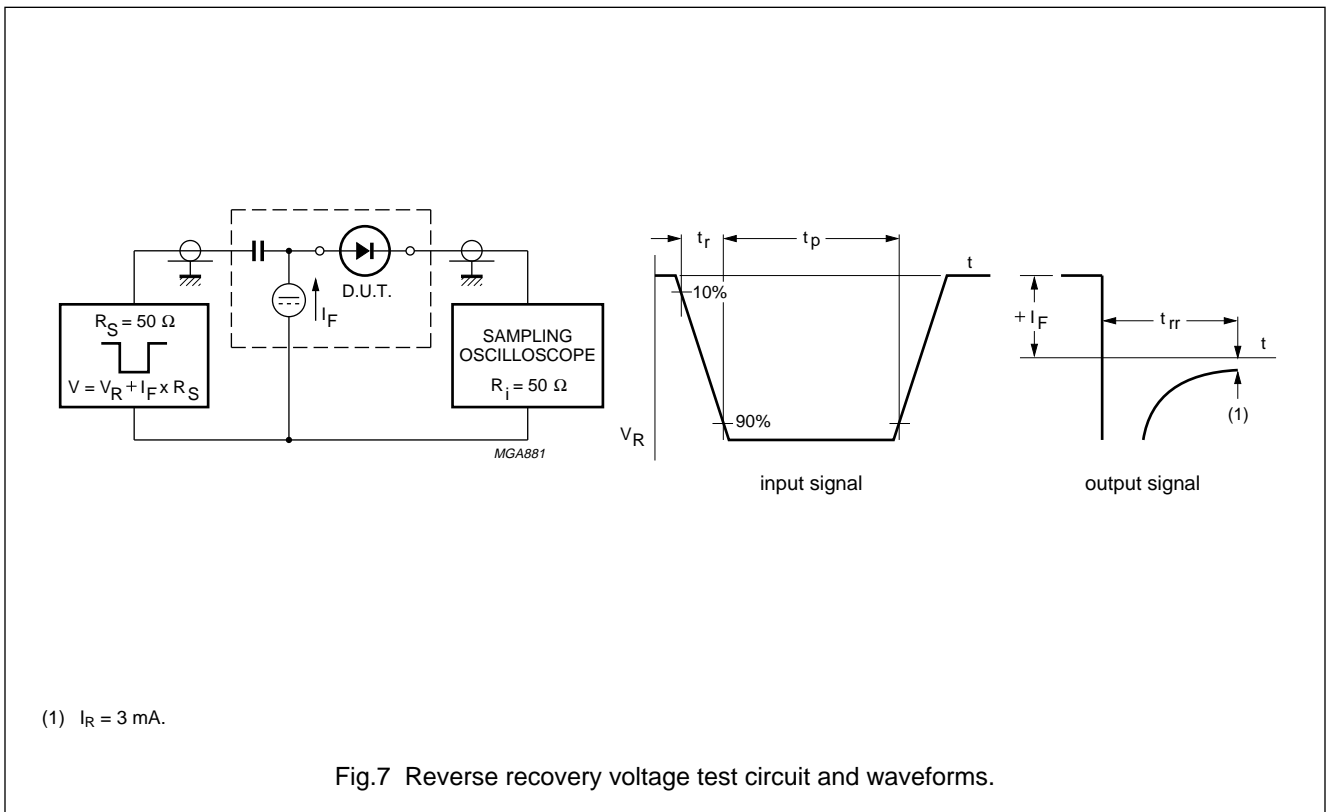
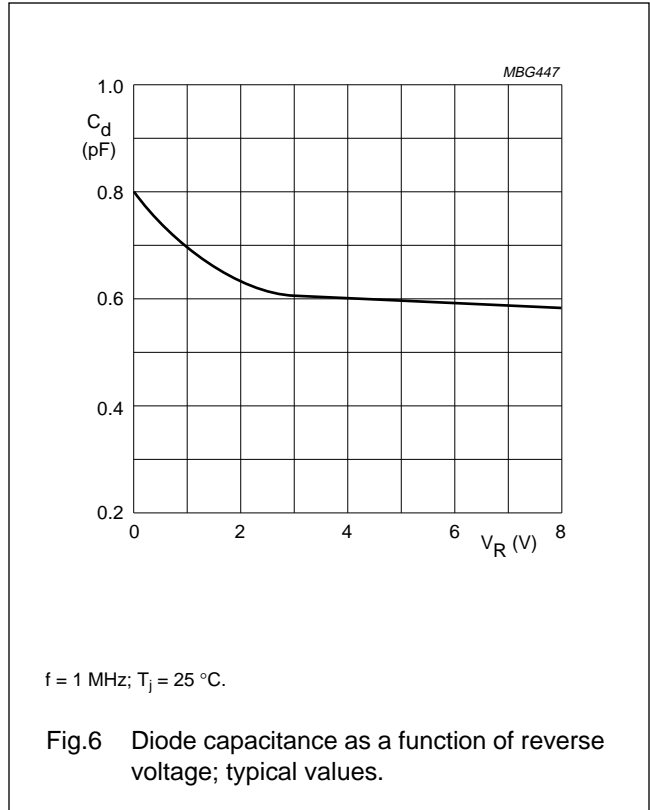
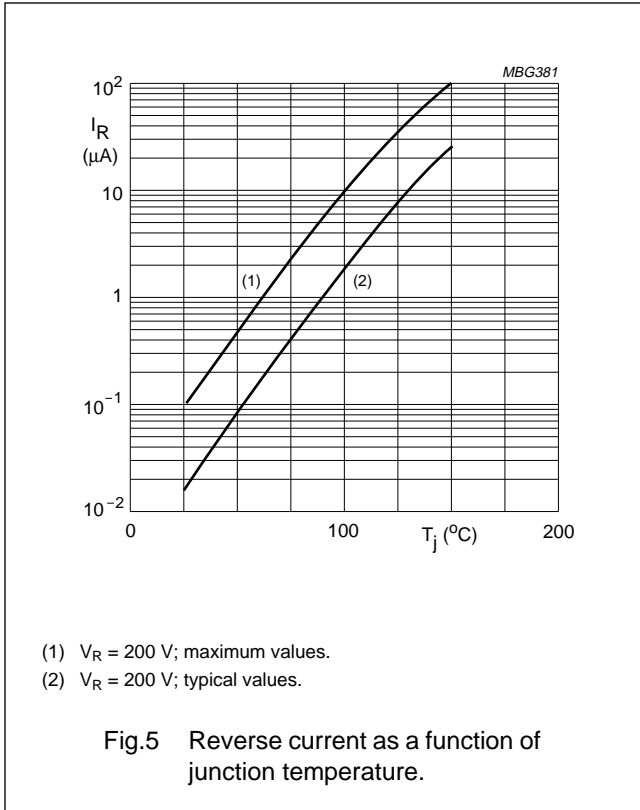
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GRAPHICAL DATA



General purpose double diode

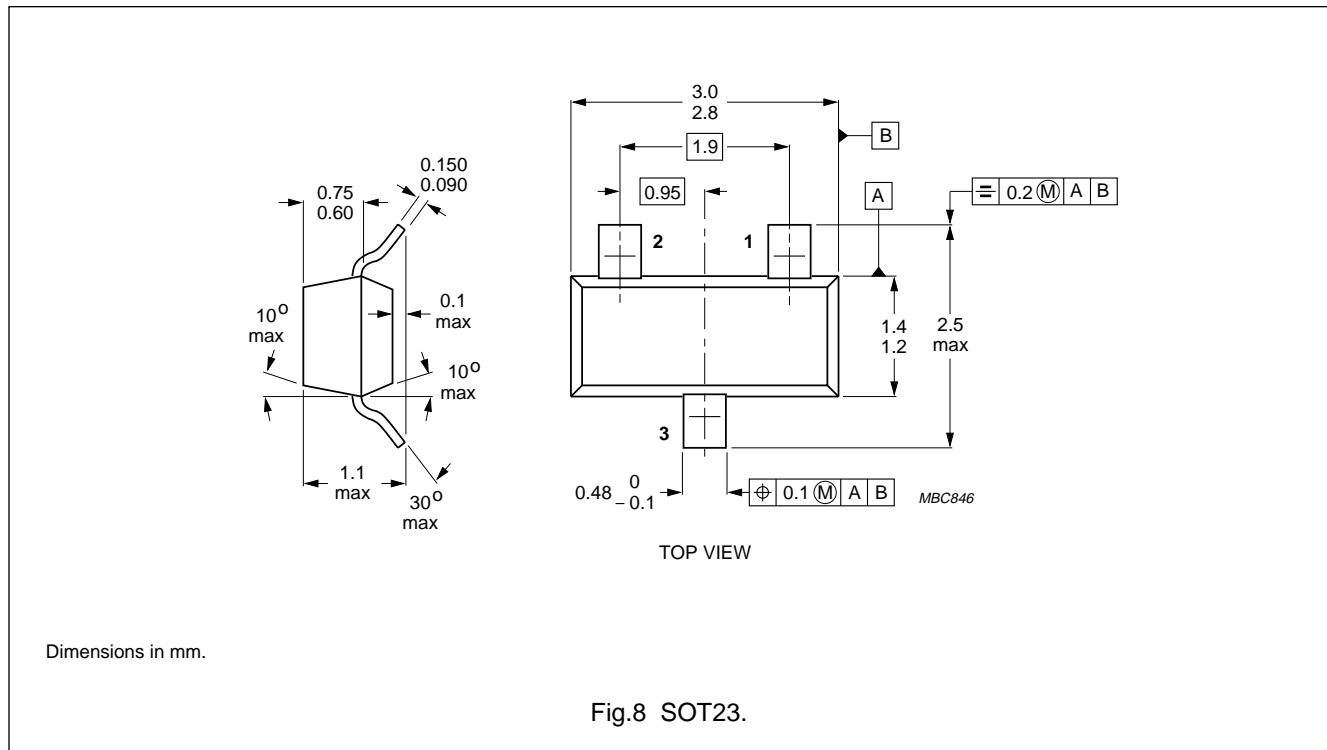
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General purpose double diode

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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.