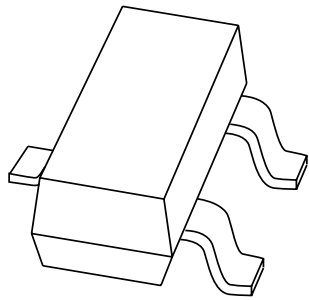


# DATA SHEET



**BAV74**

High-speed double diode

Product specification  
Supersedes data of 1999 May 11

2004 Jan 14

# High-speed double diode

# BAV74

## FEATURES

- Small plastic SMD package
- High switching speed: max. 4 ns
- Continuous reverse voltage: max. 50 V
- Repetitive peak reverse voltage: max. 60 V
- Repetitive peak forward current: max. 450 mA.

## APPLICATIONS

- High-speed switching in thick and thin-film circuits.

## DESCRIPTION

The BAV74 consists of two high-speed switching diodes with common cathodes, fabricated in planar technology, and encapsulated in a small SOT23 plastic SMD package.

## MARKING

TYPE NUMBER	MARKING CODE <sup>(1)</sup>
BAV74	JA*

## Note

1. \* = p : Made in Hong Kong.  
 \* = t : Made in Malaysia.  
 \* = W: Made in China.

## LIMITING VALUES

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

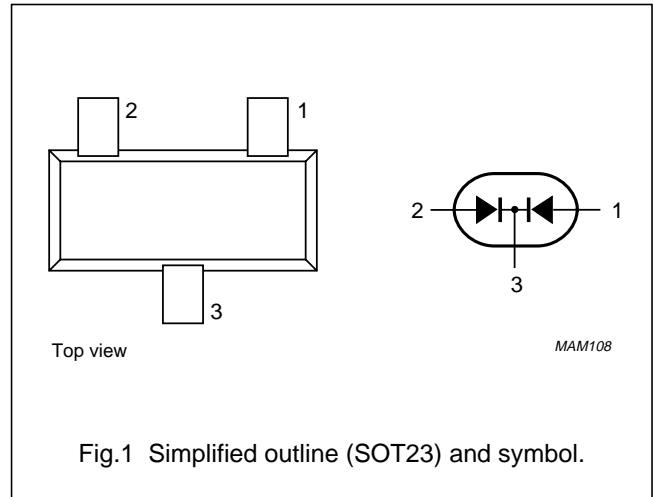
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per diode</b>					
$V_{RRM}$	repetitive peak reverse voltage		–	60	V
$V_R$	continuous reverse voltage		–	50	V
$I_F$	continuous forward current	single diode loaded; note 1; see Fig.2	–	215	mA
		double diode loaded; note 1; see Fig.2	–	125	mA
$I_{FRM}$	repetitive peak forward current		–	450	mA
$I_{FSM}$	non-repetitive peak forward current	square wave; $T_j = 25\text{ °C}$ prior to surge; see Fig.4			
		$t = 1\ \mu\text{s}$	–	4	A
		$t = 1\ \text{ms}$	–	1	A
		$t = 1\ \text{s}$	–	0.5	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.

## PINNING

PIN	DESCRIPTION
1	anode (a1)
2	anode (a2)
3	cathode



## High-speed double diode

BAV74

## ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BAV74	–	plastic surface mounted package; 3 leads	SOT23

## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
<b>Per diode</b>				
$V_F$	forward voltage	see Fig.3 $I_F = 1\text{ mA}$ $I_F = 10\text{ mA}$ $I_F = 100\text{ mA}$	715 855 1.0	mV mV V
$I_R$	reverse current	see Fig.5 $V_R = 25\text{ V}$ $V_R = 50\text{ V}$ $V_R = 25\text{ V}; T_j = 150\text{ °C}$ $V_R = 50\text{ V}; T_j = 150\text{ °C}$	30 0.1 30 100	nA $\mu\text{A}$ $\mu\text{A}$ $\mu\text{A}$
$C_d$	diode capacitance	$f = 1\text{ MHz}; V_R = 0$ ; see Fig.6	1.5	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	4	ns
$V_{fr}$	forward recovery voltage	when switched from $I_F = 10\text{ mA}$ ; $t_r = 20\text{ ns}$ ; see Fig.8	1.75	V

## 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

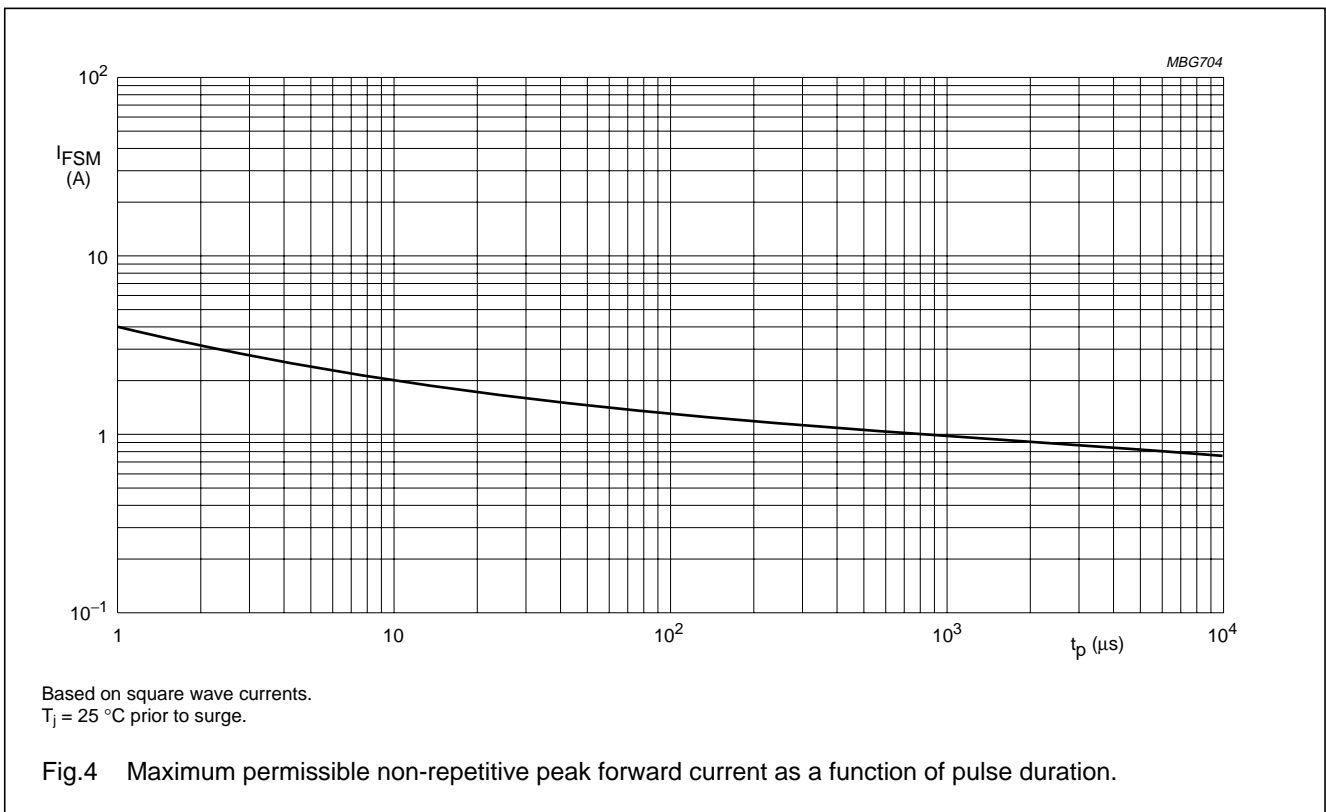
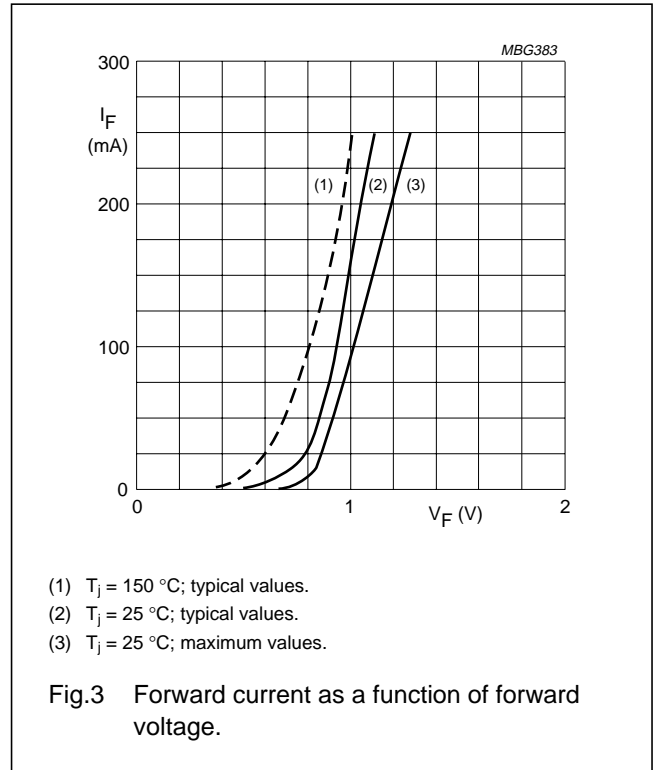
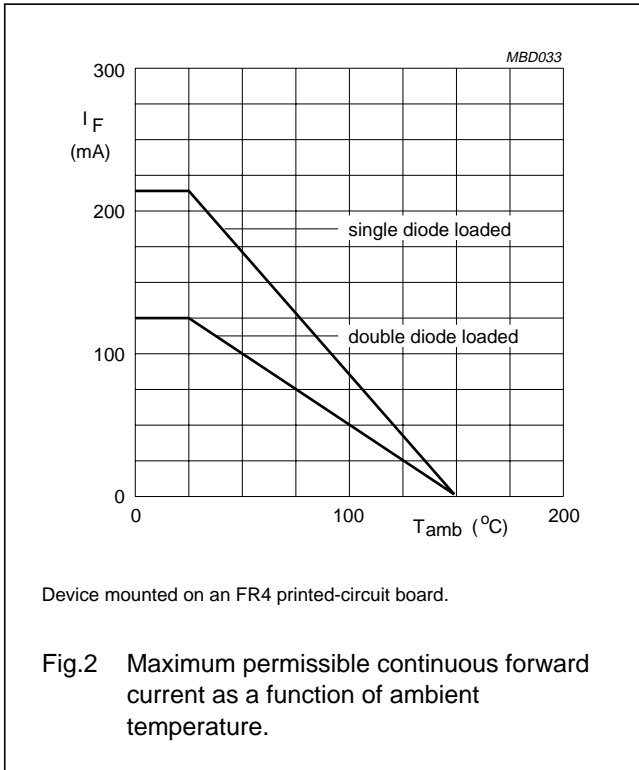
## Note

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

High-speed double diode

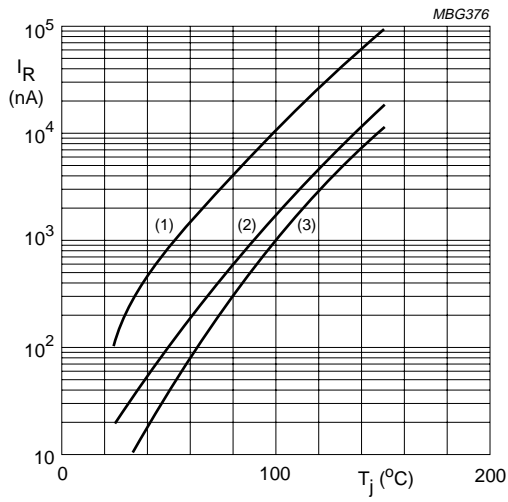
BAV74

GRAPHICAL DATA



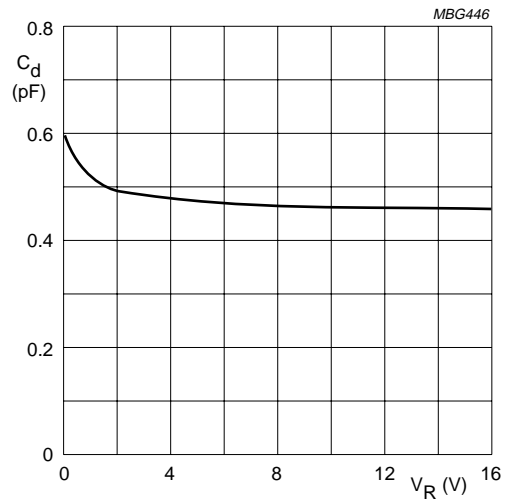
High-speed double diode

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- (1)  $V_R = 50$  V; maximum values.
- (2)  $V_R = 50$  V; typical values.
- (3)  $V_R = 25$  V; typical values.

Fig.5 Reverse current as a function of junction temperature.

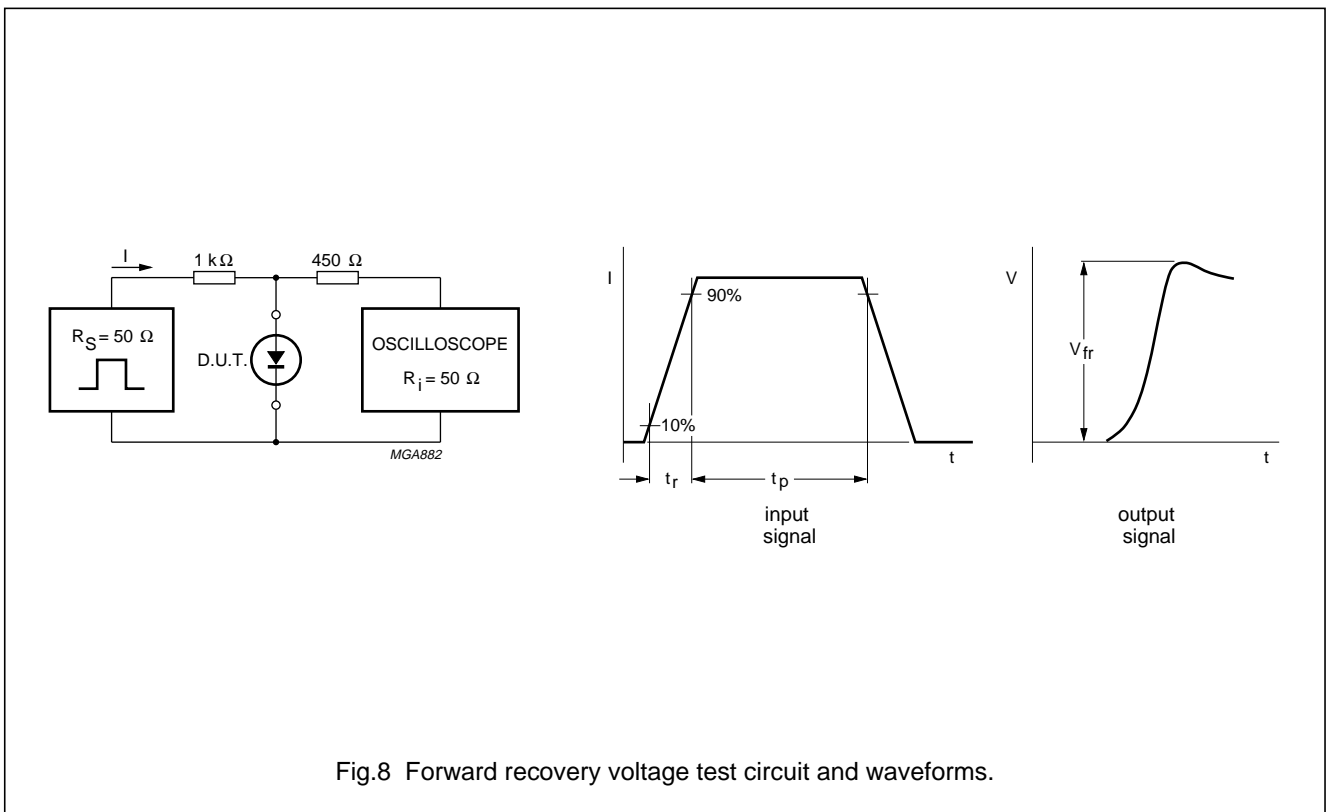
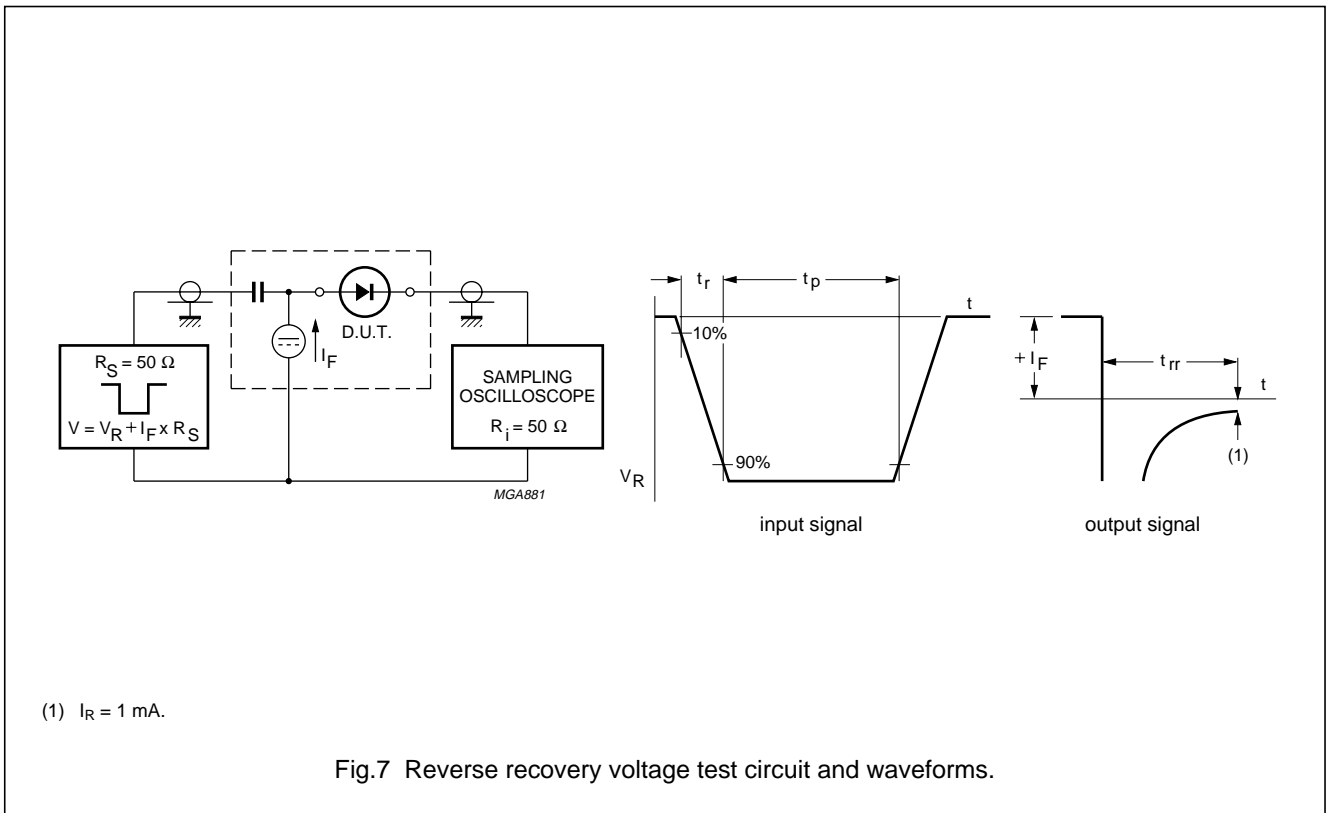


$f = 1$  MHz;  $T_j = 25$  °C.

Fig.6 Diode capacitance as a function of reverse voltage; typical values.

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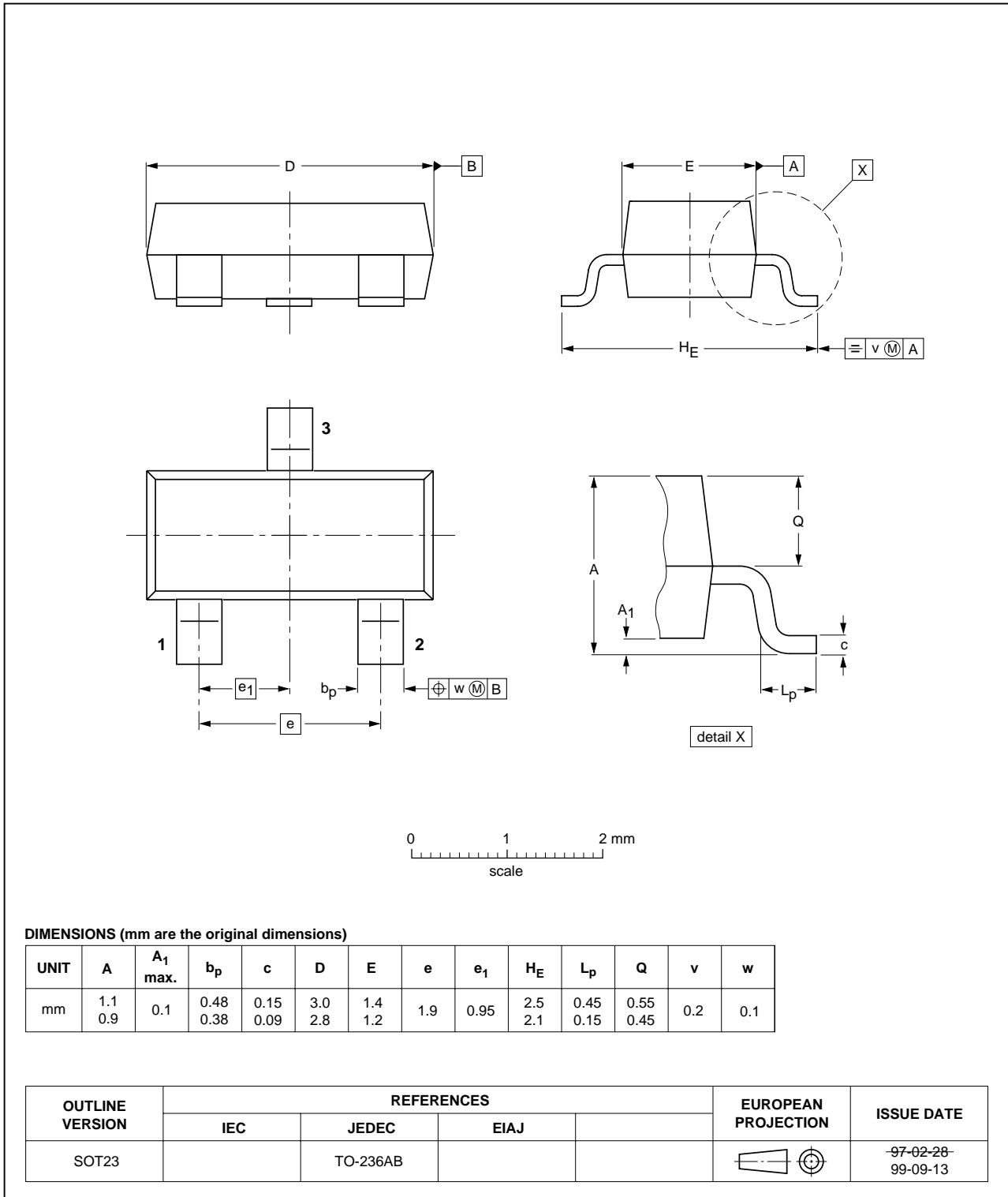
# High-speed double diode

BAV74

## PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



## High-speed double diode

BAV74

## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
II	Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
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