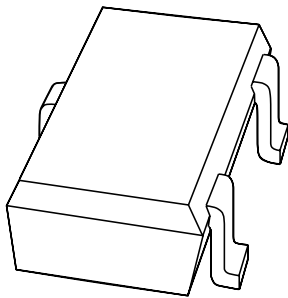


# DATA SHEET



## **BAS70W series** Schottky barrier (double) diodes

Product specification  
Supersedes data of 1996 Mar 19

1999 Mar 26

# Schottky barrier (double) diodes

# BAS70W series

### FEATURES

- Low forward voltage
- High breakdown voltage
- Guard ring protected
- Very small SMD package
- Low capacitance.

### APPLICATIONS

- Ultra high-speed switching
- Voltage clamping
- Protection circuits
- Blocking diodes.

### DESCRIPTION

Planar Schottky barrier diodes. Single diodes (BAS70W) and double diodes with different pinning (BAS70-04W; -05W; -06W) are available.

The diodes are encapsulated in a SOT323 very small plastic SMD package.

### MARKING

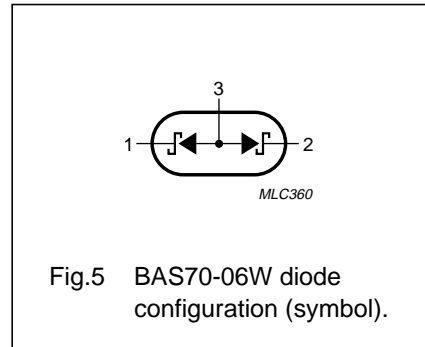
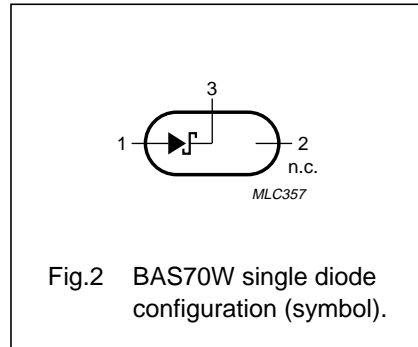
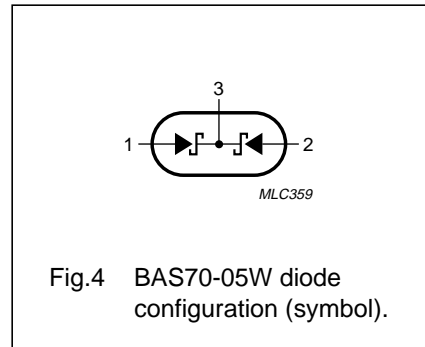
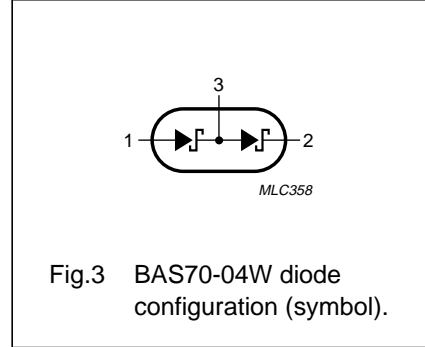
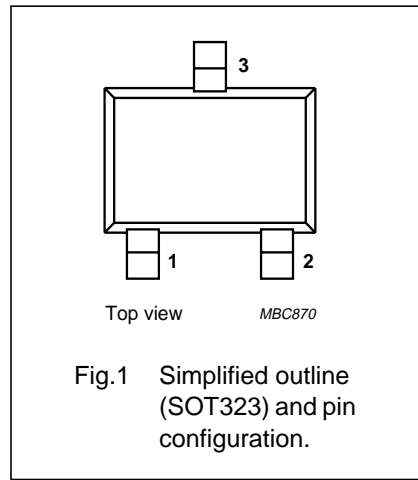
TYPE NUMBER	MARKING CODE <sup>(1)</sup>
BAS70W	73*
BAS70-04W	74*
BAS70-05W	75*
BAS70-06W	76*

### Note

1. \* = -: Made in Hong Kong.  
\* = t: Made in Malaysia.

### PINNING

PIN	BAS70			
	W	-04W	-05W	-06W
1	a <sub>1</sub>	a <sub>1</sub>	a <sub>1</sub>	k <sub>1</sub>
2	n.c.	k <sub>2</sub>	a <sub>2</sub>	k <sub>2</sub>
3	k <sub>1</sub>	k <sub>1</sub> , a <sub>2</sub>	k <sub>1</sub> , k <sub>2</sub>	a <sub>1</sub> , a <sub>2</sub>



## Schottky barrier (double) diodes

## BAS70W series

**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per diode</b>					
$V_R$	continuous reverse voltage		–	70	V
$I_F$	continuous forward current		–	70	mA
$I_{FRM}$	repetitive peak forward current	$t_p \leq 1 \text{ s}$ ; $\delta \leq 0.5$	–	70	mA
$I_{FSM}$	non-repetitive peak forward current	$t_p < 10 \text{ ms}$	–	100	mA
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C
$T_{amb}$	operating ambient temperature		–65	+150	°C

**ELECTRICAL CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
<b>Per diode</b>				
$V_F$	forward voltage	see Fig.6 $I_F = 1 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 15 \text{ mA}$	410 750 1	mV mV V
$I_R$	reverse current	$V_R = 50 \text{ V}$ ; note 1; see Fig.7	100	nA
		$V_R = 70 \text{ V}$ ; note 1; see Fig.7	10	$\mu\text{A}$
$\tau$	charge carrier life time (Krakauer method)	$I_F = 5 \text{ mA}$	100	ps
$C_d$	diode capacitance	$f = 1 \text{ MHz}$ ; $V_R = 0$ ; see Fig.9	2	pF

**Note**

1. Pulse test:  $t_p = 300 \mu\text{s}$ ;  $\delta = 0.02$ .

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	625	K/W

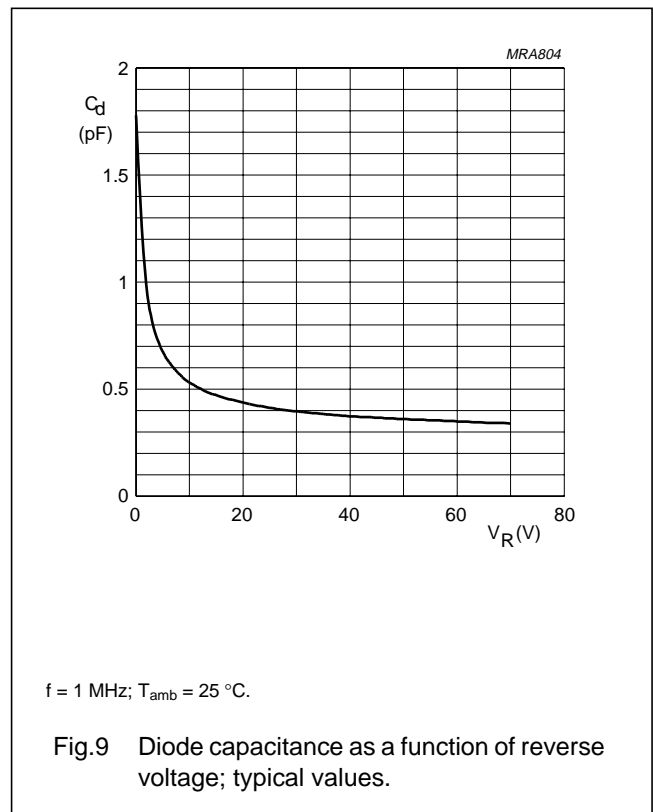
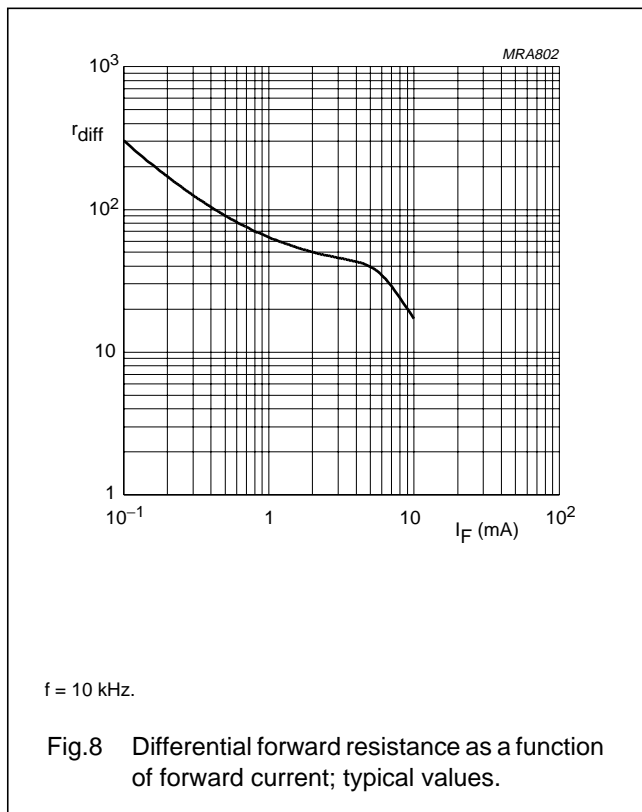
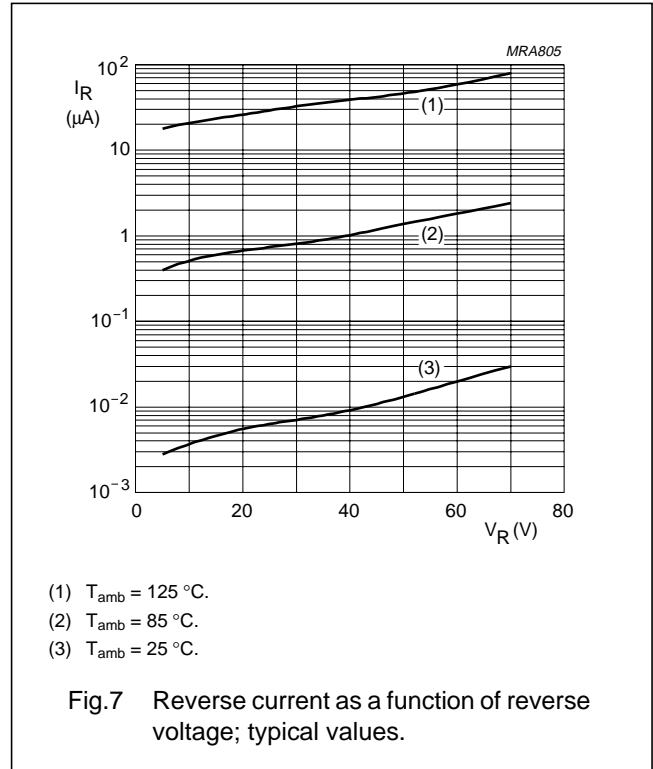
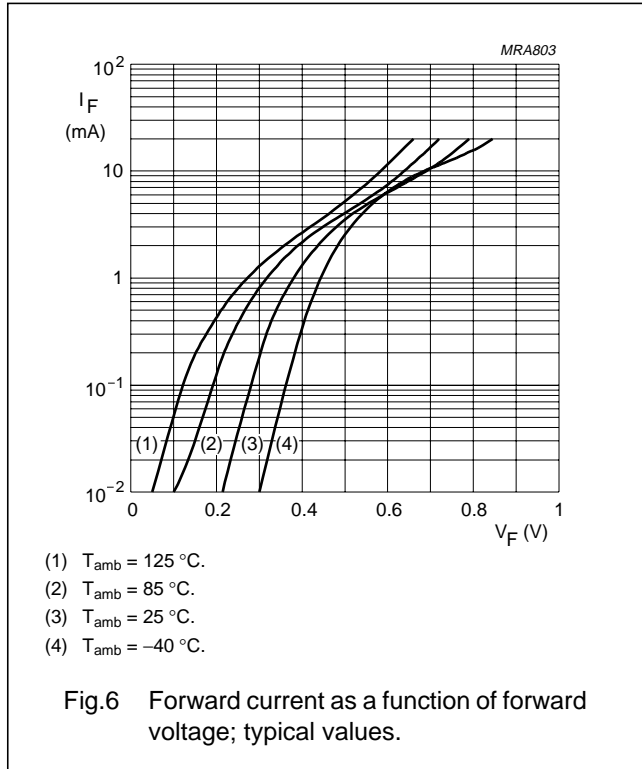
**Note**

1. Refer to SOT323 standard mounting conditions.

Schottky barrier (double) diodes

BAS70W series

GRAPHICAL DATA



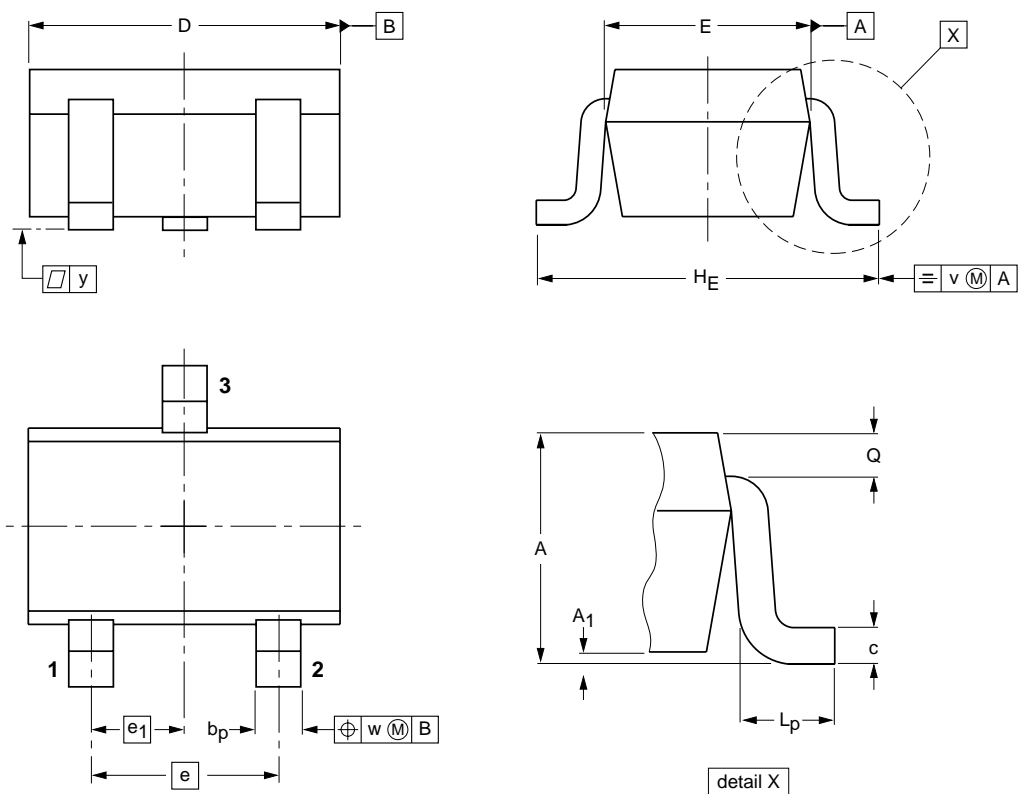
Schottky barrier (double) diodes

BAS70W series

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> 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 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

## Schottky barrier (double) diodes

## BAS70W series

**DEFINITIONS**

<b>Data sheet status</b>	
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.
<b>Limiting values</b>	
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.	
<b>Application information</b>	
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.

Schottky barrier (double) diodes

BAS70W series

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