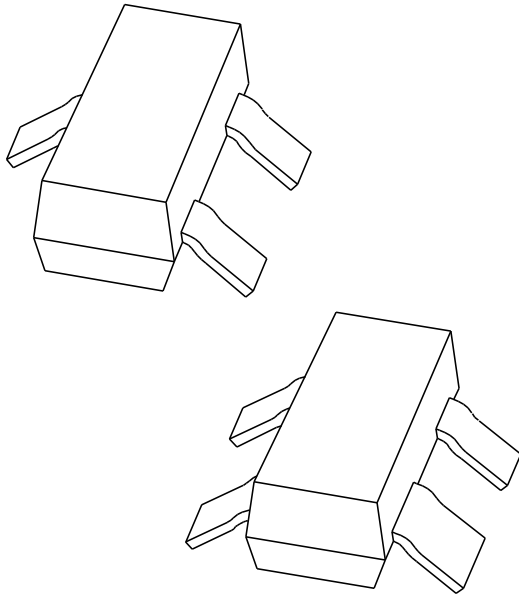


# DATA SHEET



## **BAS70 series** Schottky barrier (double) diodes

Product specification  
Supersedes data of 1996 Mar 19  
File under Discrete Semiconductors, SC01

1996 Oct 01

# Schottky barrier (double) diodes

# BAS70 series

## FEATURES

- Low forward current
- High breakdown voltage
- Guard ring protected
- Small SMD package
- Low diode capacitance.

## APPLICATIONS

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

## DESCRIPTION

Planar Schottky barrier diodes with an integrated guard ring for stress protection. Single diodes and double diodes with different pinning are available.

The diodes BAS70, BAS70-04, BAS70-05 and BAS70-06 are encapsulated in a SOT23 small plastic SMD package. The BAS70-07 is encapsulated in a SOT143 small plastic SMD package.

## MARKING

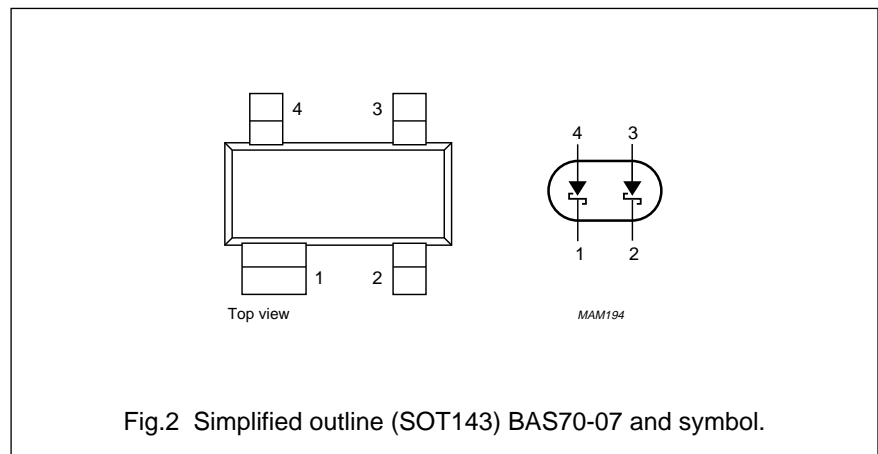
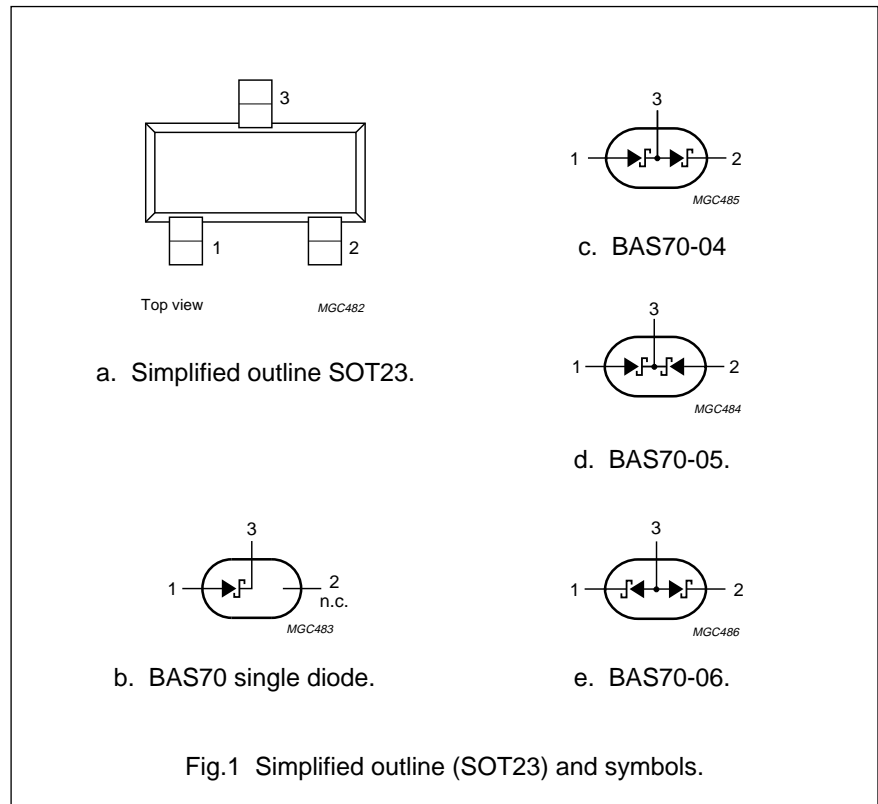
TYPE NUMBER	MARKING CODE
BAS70	73p
BAS70-04	74p
BAS70-05	75p
BAS70-06	76p
BAS70-07	77p

## PINNING SOT143 (see Fig.2)

PIN	DESCRIPTION
<b>BAS70-07</b>	
1	k <sub>1</sub>
2	k <sub>2</sub>
3	a <sub>2</sub>
4	a <sub>1</sub>

## PINNING SOT23 (see Fig.1a)

PIN	DESCRIPTION			
	BAS70 (see Fig.1b)	BAS70-04 (see Fig.1c)	BAS70-05 (see Fig.1d)	BAS70-06 (see Fig.1e)
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

## BAS70 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	$t_p \leq 1$ s; $\delta \leq 0.5$	–	70	mA
$I_{FSM}$	non-repetitive peak forward current	$t_p < 10$ 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** $T_{amb} = 25$  °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
<b>Per diode</b>				
$V_F$	forward voltage	see Fig.3 $I_F = 1$ mA $I_F = 10$ mA $I_F = 15$ mA	410 750 1	mV mV V
$I_R$	reverse current	$V_R = 50$ V; note 1; see Fig.4	100	nA
		$V_R = 70$ V; note 1; see Fig.4	10	μA
$\tau$	charge carrier life time (Krakauer method)	$I_F = 5$ mA	100	ps
$C_d$	diode capacitance	$f = 1$ MHz; $V_R = 0$ V; see Fig.6	2	pF

**Note**

1. Pulsed test:  $t_p = 300$  μs;  $\delta = 0.02$ .

**THERMAL CHARACTERISTICS**

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

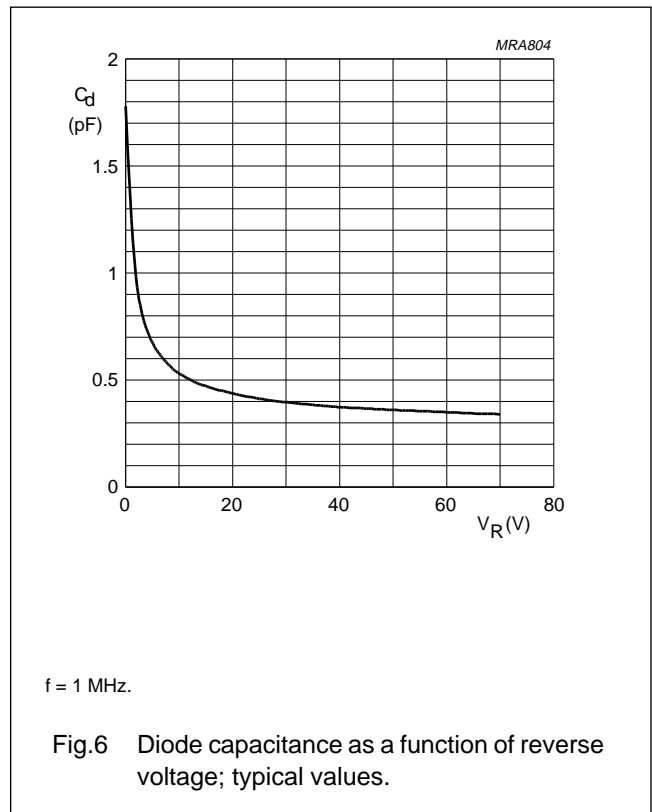
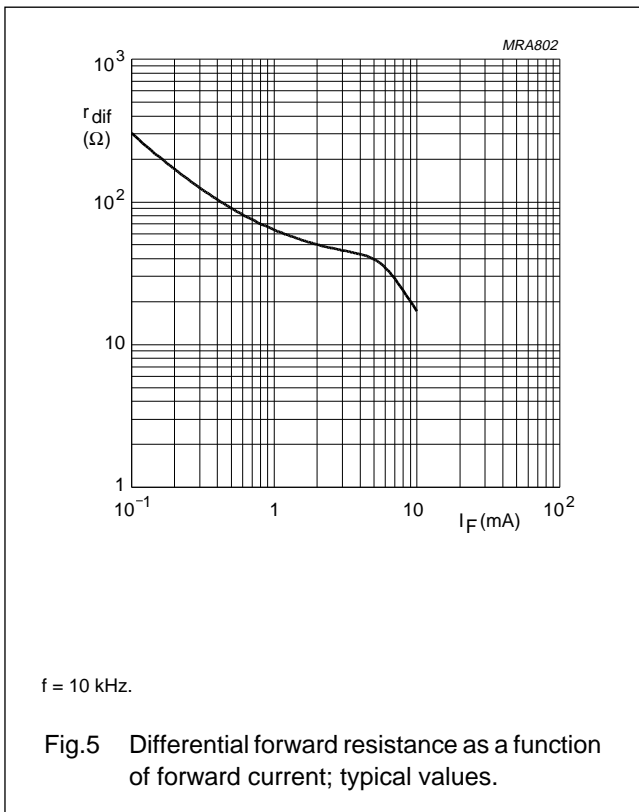
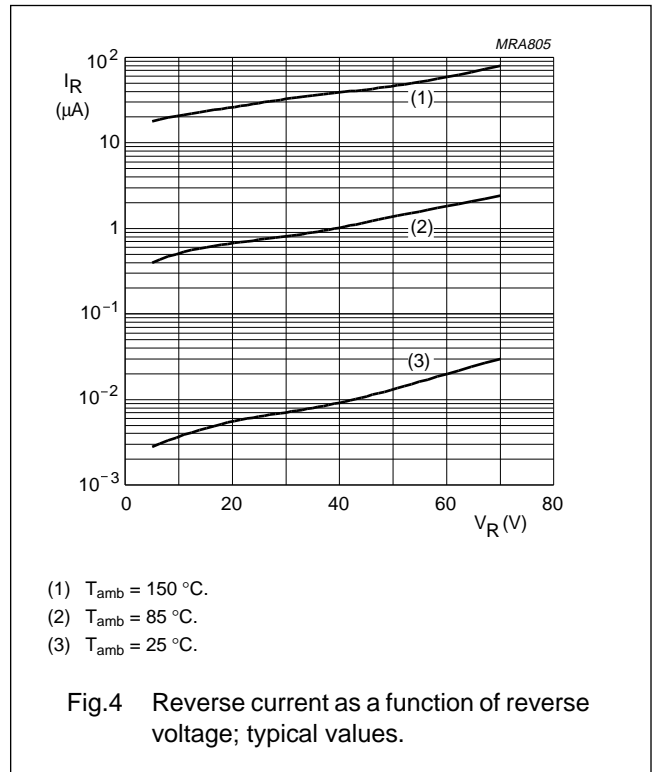
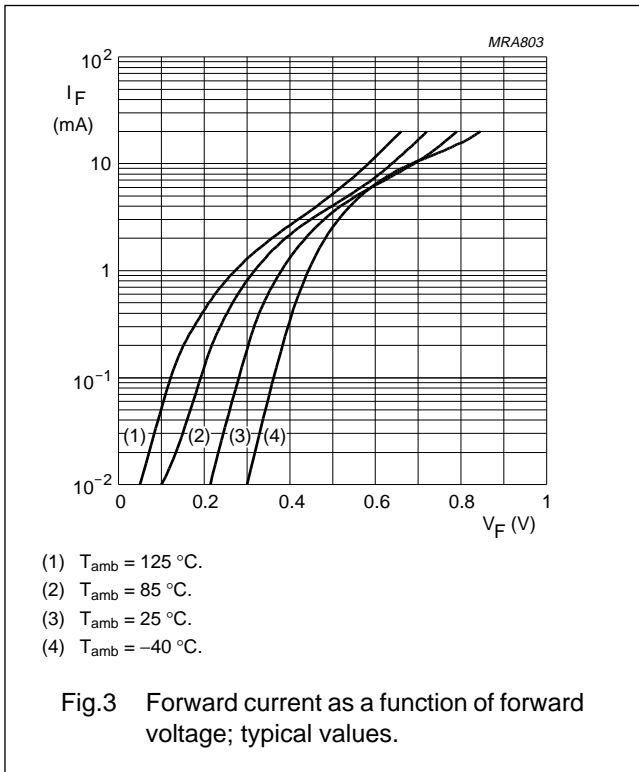
**Note**

1. Refer to SOT23 or SOT143 standard mounting conditions.

Schottky barrier (double) diodes

BAS70 series

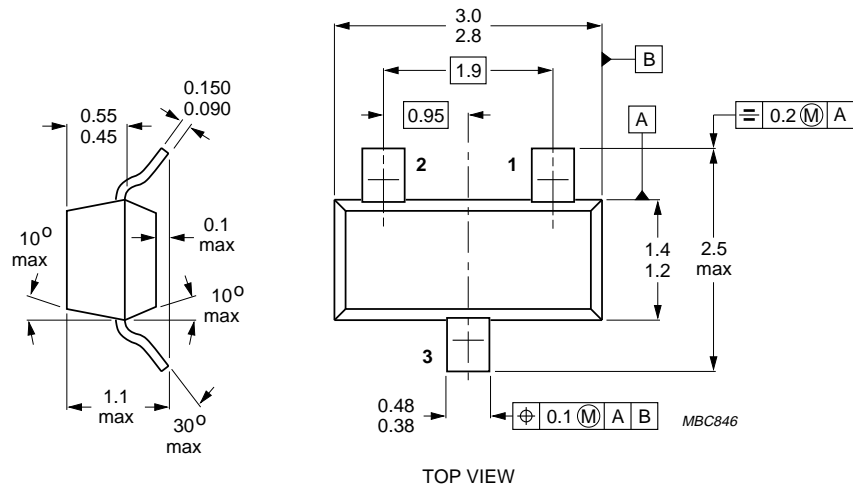
GRAPHICAL DATA



Schottky barrier (double) diodes

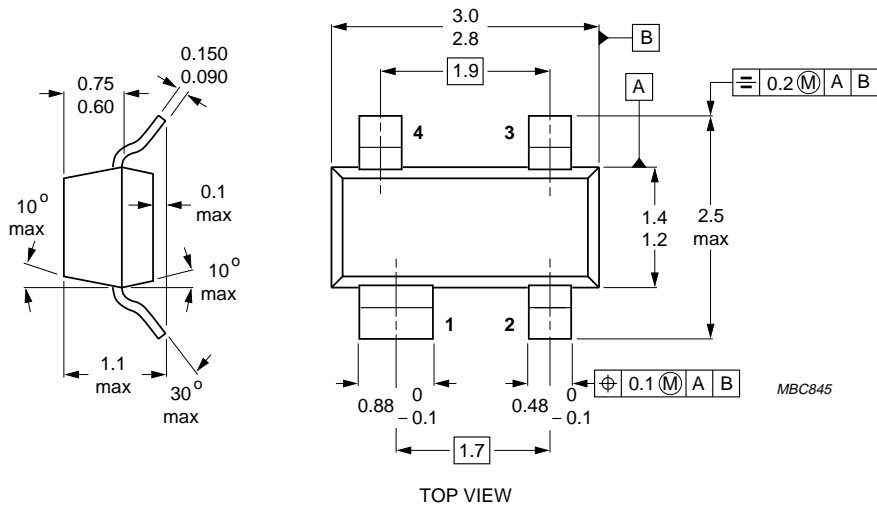
BAS70 series

PACKAGE OUTLINES



Dimensions in mm.

Fig.7 SOT23.



Dimensions in mm.

Fig.8 SOT143.

## Schottky barrier (double) diodes

## BAS70 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.