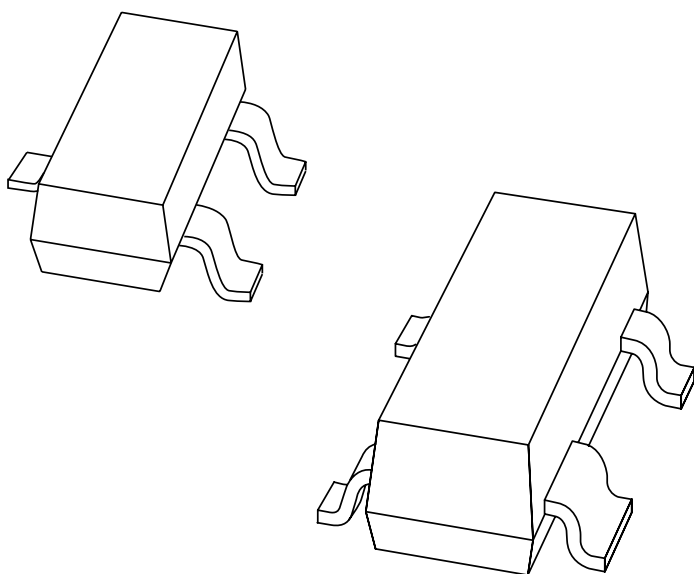


DATA SHEET



BAS70 series Schottky barrier (double) diodes

Product specification
Supersedes data of 1999 Jun 01

2001 Oct 11

Schottky barrier (double) diodes

BAS70 series

FEATURES

- Low forward current
- High breakdown voltage
- Guard ring protected
- Small plastic 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 SOT143B small plastic SMD package.

MARKING

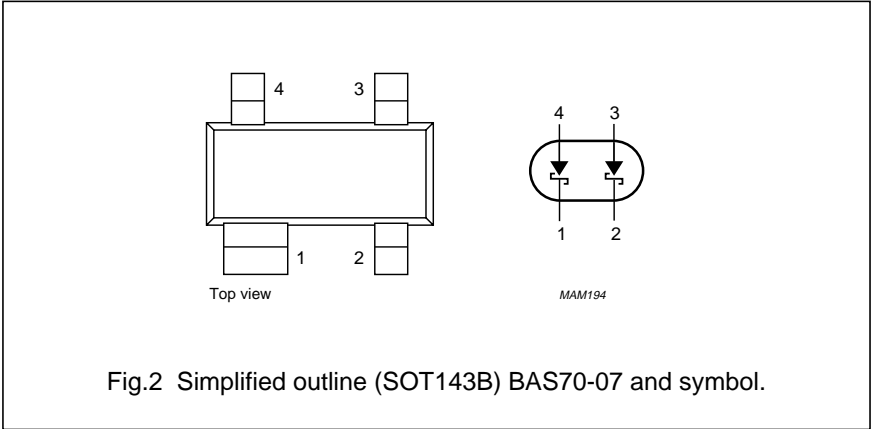
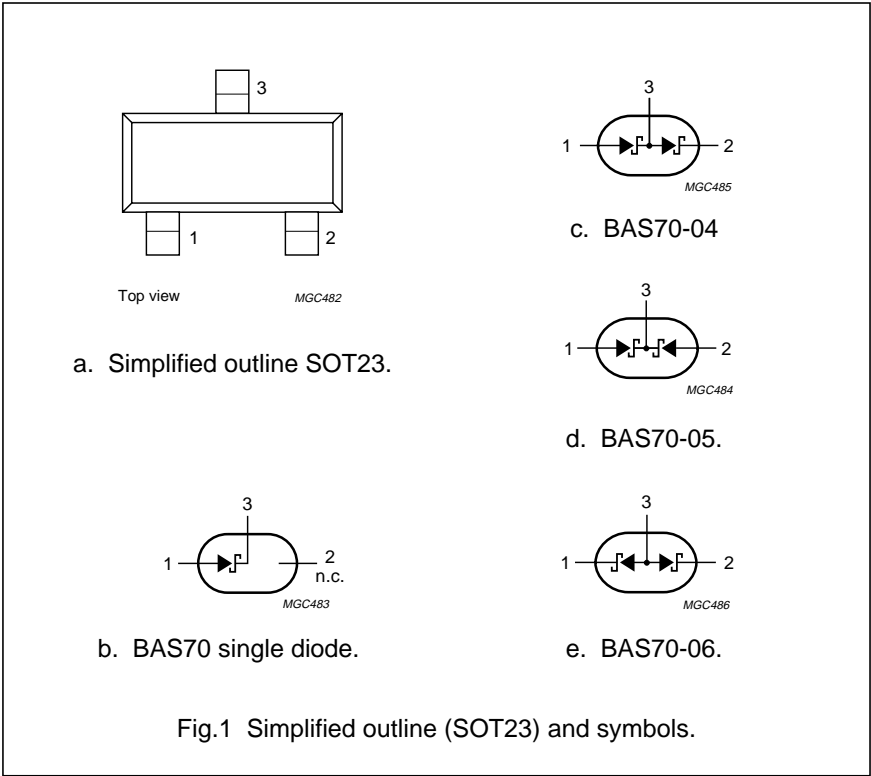
TYPE NUMBER	MARKING CODE ⁽¹⁾
BAS70	73*
BAS70-04	74*
BAS70-05	75*
BAS70-06	76*
BAS70-07	77*

Note

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

PINNING

PIN	DESCRIPTION				
	SOT23				SOT143B
	BAS70 (see Fig.1b)	BAS70-04 (see Fig.1c)	BAS70-05 (see Fig.1d)	BAS70-06 (see Fig.1e)	BAS70-07 (see Fig.2)
1	a ₁	a ₁	a ₁	k ₁	k ₁
2	n.c.	k ₂	a ₂	k ₂	k ₂
3	k ₁	k ₁ , a ₂	k ₁ , k ₂	a ₁ , a ₂	a ₂
4	–	–	–	–	a ₁



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LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
Per diode					
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
Per diode				
V_F	forward voltage	see Fig.3 $I_F = 1 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 15 \text{ mA}$	410 750 1	mV mV V
I_R	reverse current	$V_R = 50 \text{ V}$; note 1; see Fig.4	100	nA
		$V_R = 70 \text{ V}$; note 1; see Fig.4	10	μA
τ	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.6	2	pF

Note

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

THERMAL CHARACTERISTICS

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

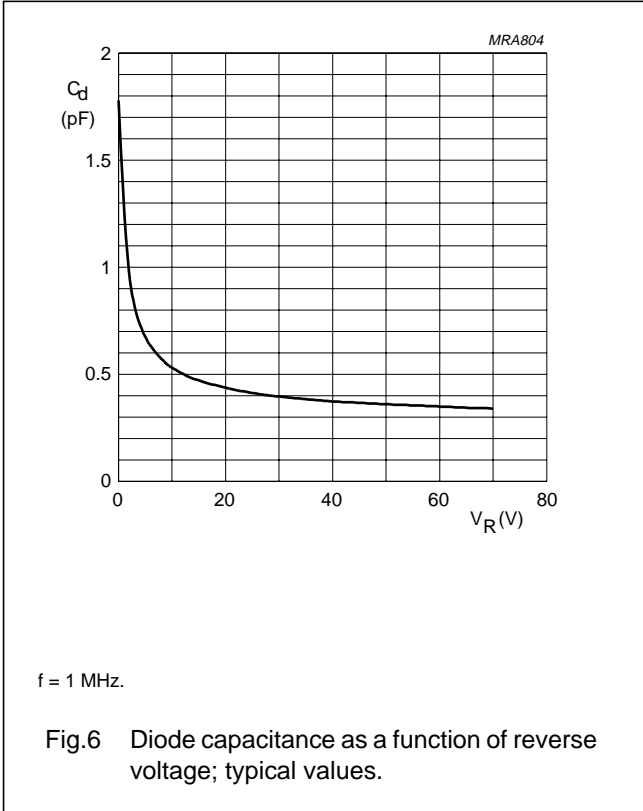
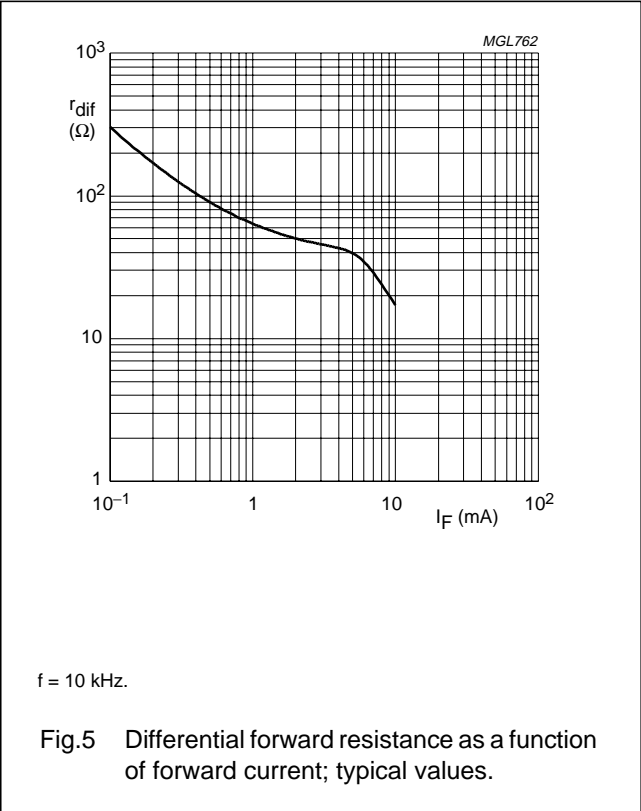
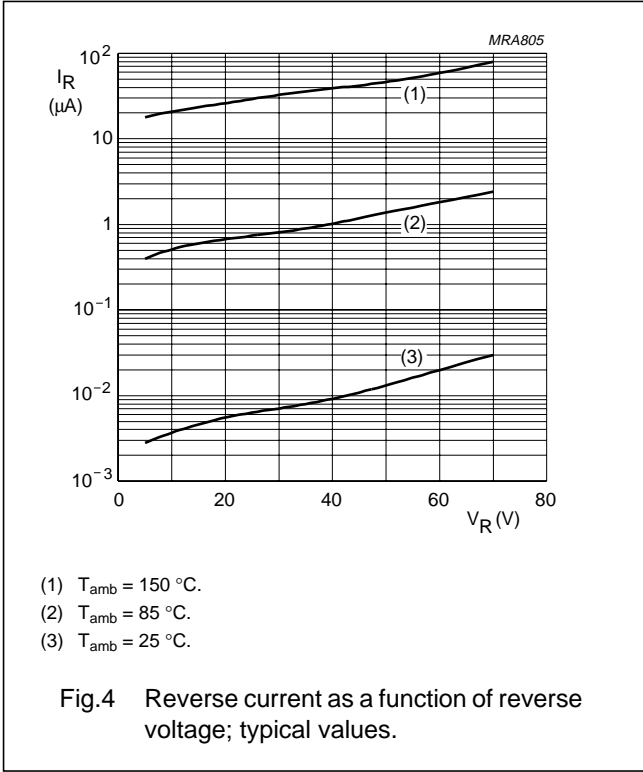
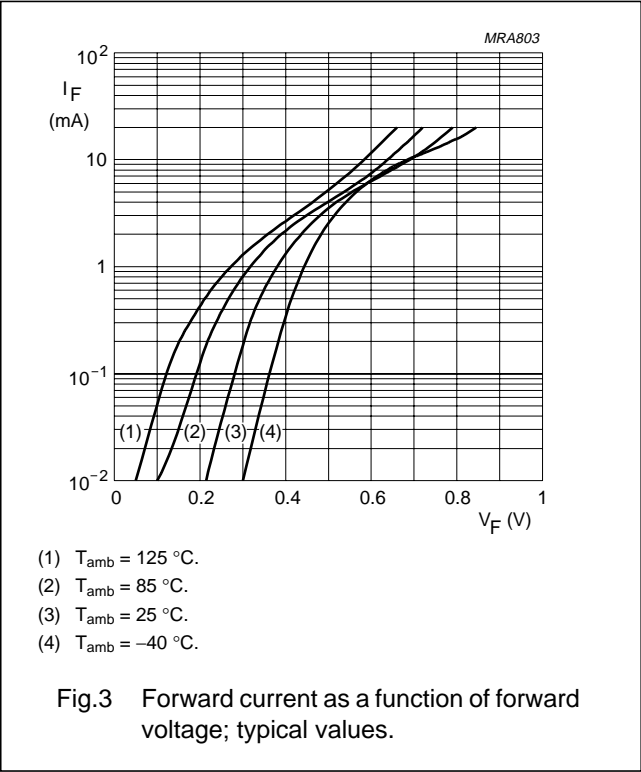
Note

1. Refer to SOT23 or SOT143B standard mounting conditions.

Schottky barrier (double) diodes

BAS70 series

GRAPHICAL DATA



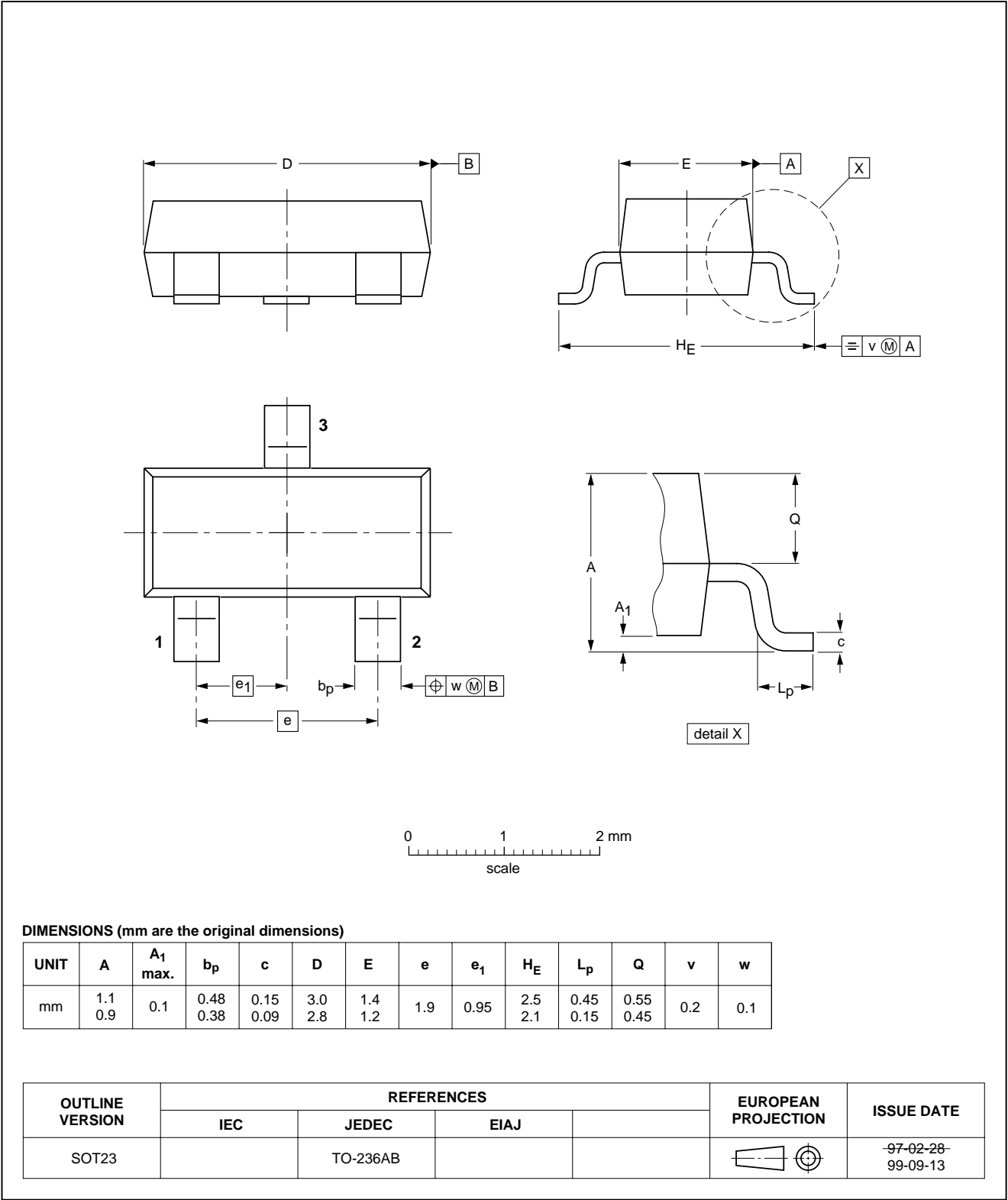
Schottky barrier (double) diodes

BAS70 series

PACKAGE OUTLINES

Plastic surface mounted package; 3 leads

SOT23

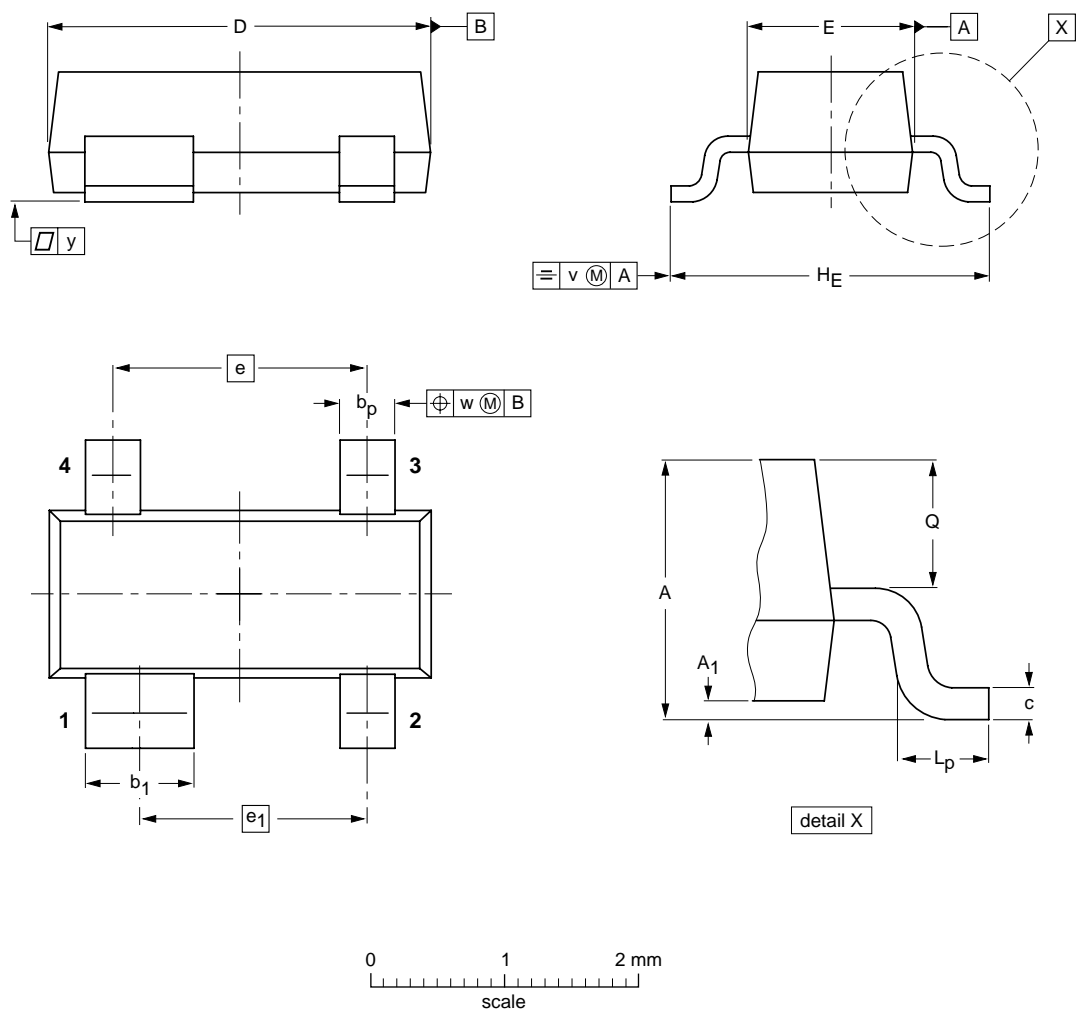


Schottky barrier (double) diodes

BAS70 series

Plastic surface mounted package; 4 leads

SOT143B



DIMENSIONS (mm are the original dimensions)

UNIT	A	A1max	bp	b1	c	D	E	e	e1	HE	Lp	Q	v	w	y
mm	1.1 0.9	0.1	0.48 0.38	0.88 0.78	0.15 0.09	3.0 2.8	1.4 1.2	1.9	1.7	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT143B						97-02-28

Schottky barrier (double) diodes

BAS70 series

DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
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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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