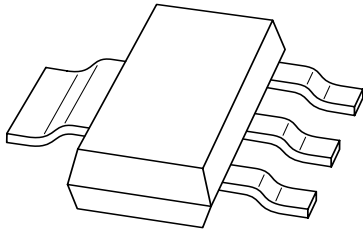


# DATA SHEET



**BAT120**

Schottky barrier double diodes

Product specification  
Supersedes data of 1998 Oct 30

2001 Aug 27

# Schottky barrier double diodes

# BAT120

### FEATURES

- Low switching losses
- Capability of absorbing very high surge current
- Fast recovery time
- Guard ring protected
- Plastic SMD package.

### APPLICATIONS

- Low power switched-mode power supplies
- Rectification
- Polarity protection.

### DESCRIPTION

Planar Schottky barrier double diodes encapsulated in a SOT223 plastic SMD package

### MARKING

TYPE NUMBER	MARKING CODE
BAT120A	AT120A
BAT120C	AT120C
BAT120S	AT120S

### PINNING

PIN	BAT120		
	A	C	S
1	k <sub>1</sub>	a <sub>1</sub>	a <sub>1</sub>
2	n.c.	n.c.	n.c.
3	k <sub>2</sub>	a <sub>2</sub>	k <sub>2</sub>
4	a <sub>1</sub> , a <sub>2</sub>	k <sub>1</sub> , k <sub>2</sub>	k <sub>1</sub> , a <sub>2</sub>

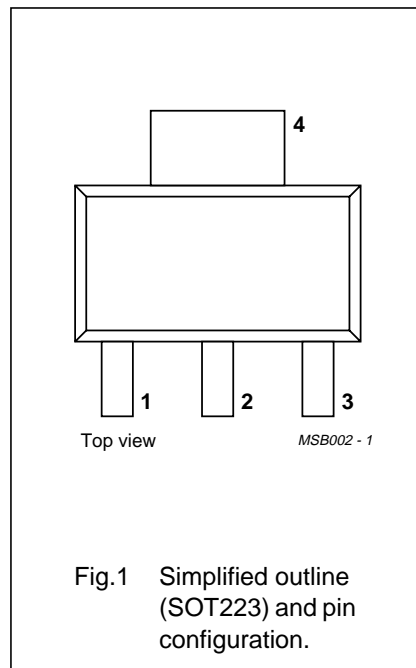


Fig.1 Simplified outline (SOT223) and pin configuration.

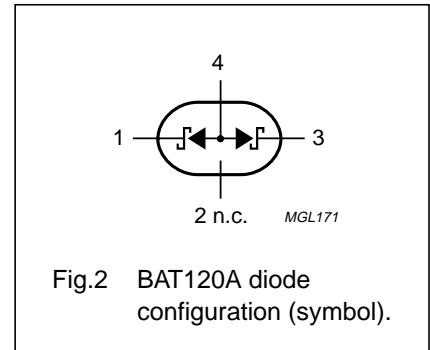


Fig.2 BAT120A diode configuration (symbol).

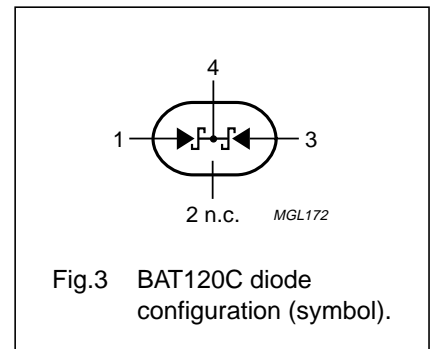


Fig.3 BAT120C diode configuration (symbol).

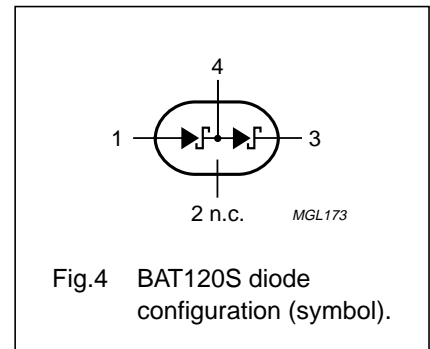


Fig.4 BAT120S diode configuration (symbol).

## Schottky barrier double diodes

BAT120

**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per diode</b>					
$V_R$	continuous reverse voltage		–	25	V
$I_F$	continuous forward current		–	1	A
$I_{FSM}$	non-repetitive peak forward current	$t_p < 10$ ms; half sinewave; JEDEC method	–	10	A
$I_{RSM}$	non-repetitive peak reverse current	$t_p = 100$ $\mu$ s	–	0.5	A
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	125	°C
$T_{amb}$	operating ambient temperature		–65	+125	°C

**ELECTRICAL CHARACTERISTICS** $T_{amb} = 25$  °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
<b>Per diode</b>					
$V_F$	forward voltage	see Fig.5 $I_F = 100$ mA $I_F = 1$ A	260 400	300 450	mV mV
$I_R$	reverse current	$V_R = 20$ V; note 1; see Fig.6	80	500	$\mu$ A
		$V_R = 25$ V; note 1; see Fig.6	–	1	mA
		$V_R = 20$ V; $T_j = 100$ °C; note 1	–	10	mA
$C_d$	diode capacitance	$f = 1$ MHz; $V_R = 4$ V; see Fig.7	100	–	pF

**Note**1. Pulse test:  $t_p = 300$   $\mu$ s;  $\delta = 0.02$ .**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	100	K/W

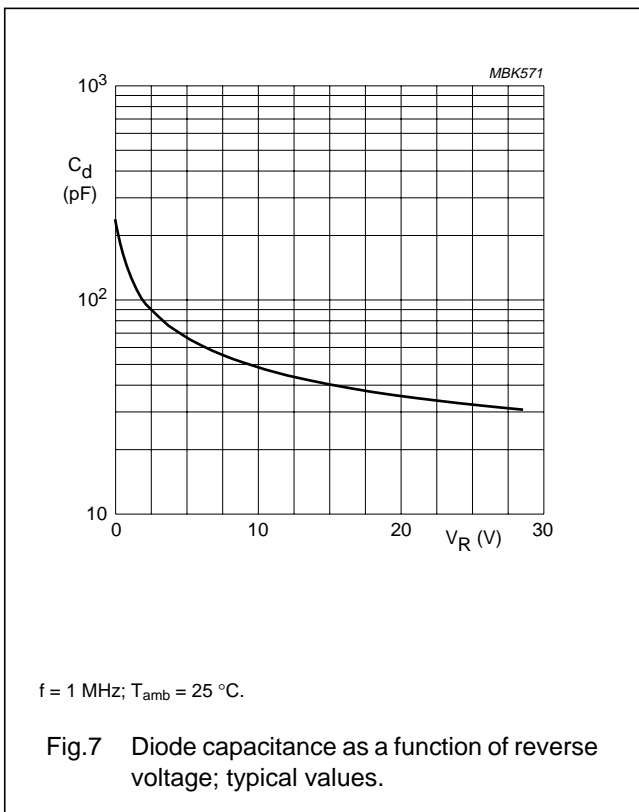
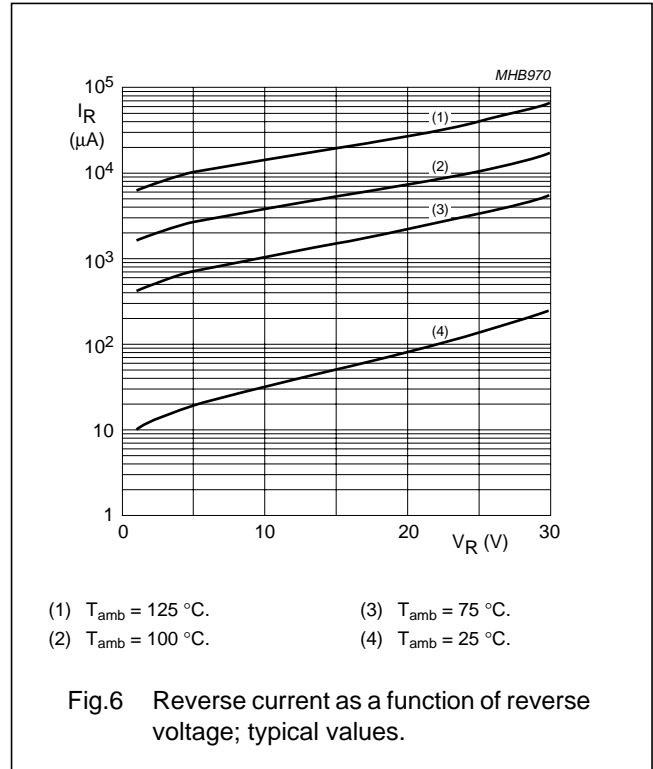
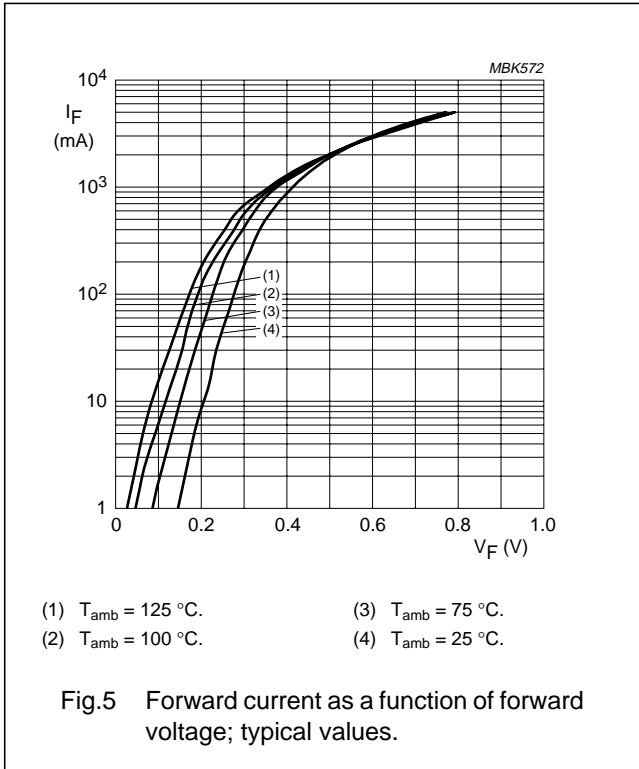
**Note**

1. Refer to SOT223 standard mounting conditions.

Schottky barrier double diodes

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GRAPHICAL DATA



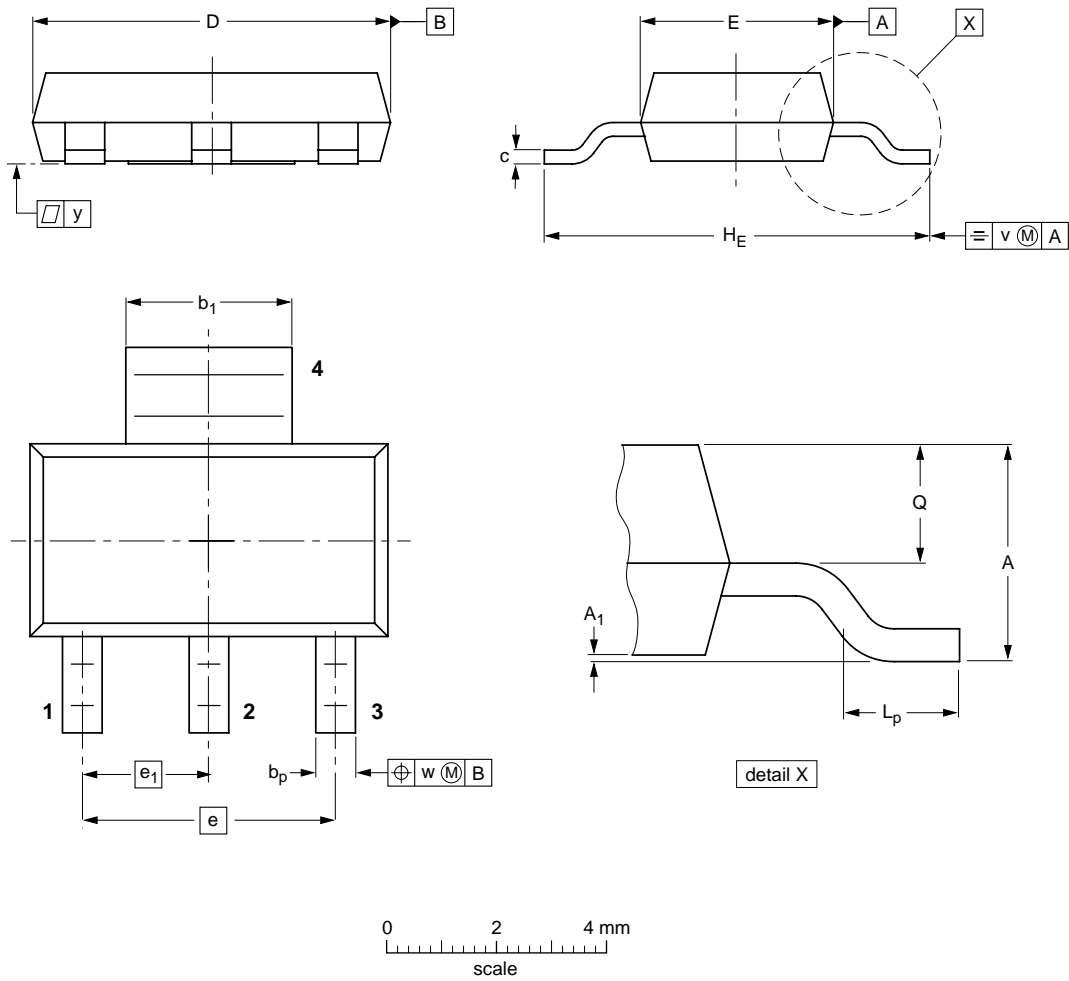
# Schottky barrier double diodes

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## PACKAGE OUTLINE

Plastic surface mounted package; collector pad for good heat transfer; 4 leads

SOT223



**DIMENSIONS (mm are the original dimensions)**

UNIT	A	A <sub>1</sub>	b <sub>p</sub>	b <sub>1</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	Q	v	w	y
mm	1.8	0.10	0.80	3.1	0.32	6.7	3.7	4.6	2.3	7.3	1.1	0.95	0.2	0.1	0.1
	1.5	0.01	0.60	2.9	0.22	6.3	3.3			6.7	0.7	0.85			

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT223			SC-73			97-02-28 99-09-13

## Schottky barrier double diodes

BAT120

## DATA SHEET STATUS

DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	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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Schottky barrier double diodes

BAT120

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**NOTES**

# ***Philips Semiconductors – a worldwide company***

## **Contact information**

For additional information please visit <http://www.semiconductors.philips.com>. Fax: +31 40 27 24825

For sales offices addresses send e-mail to: [sales.addresses@www.semiconductors.philips.com](mailto:sales.addresses@www.semiconductors.philips.com).

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