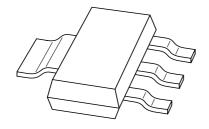
DISCRETE SEMICONDUCTORS

DATA SHEET



BAT120 seriesSchottky barrier double diodes

Product specification Supersedes data of 2001 Aug 27 2003 Aug 04





Schottky barrier double diodes

BAT120 series

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	
PIN	Α	С	S
1	k ₁	a ₁	a ₁
2	n.c.	n.c.	n.c.
3	k ₂	a_2	k ₂
4	a ₁ , a ₂	k ₁ , k ₂	k ₁ , a ₂

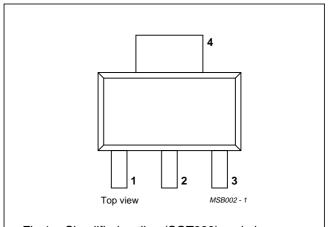
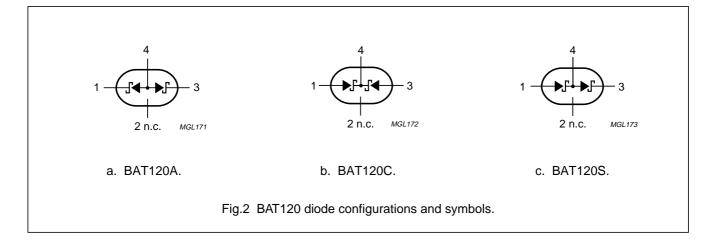


Fig.1 Simplified outline (SOT223) and pin configuration.



Schottky barrier double diodes

BAT120 series

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT						
Per diode	Per diode										
V _R	continuous reverse voltage		_	25	V						
I _F	continuous forward current		_	1	Α						
I _{FSM}	non-repetitive peak forward current	t _p < 10 ms; half sinewave; JEDEC method	_	10	А						
I _{RSM}	non-repetitive peak reverse current	t _p = 100 μs	_	0.5	А						
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
Per diode			•	•	•
V _F	forward voltage	see Fig.3			
		I _F = 100 mA	260	300	mV
		I _F = 1 A	400	450	mV
I _R	reverse current	V _R = 20 V; note 1; see Fig.4	80	500	μΑ
		V _R = 25 V; note 1; see Fig.4	_	1	mA
		V _R = 20 V; T _j = 100 °C; note 1	_	10	mA
C _d	diode capacitance	$f = 1 \text{ MHz}$; $V_R = 4 \text{ V}$; see Fig.5	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

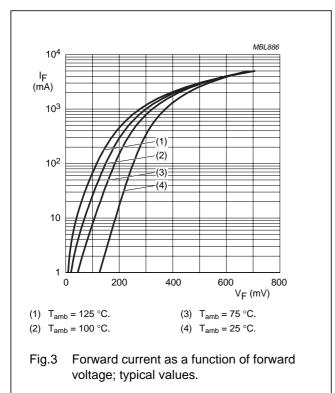
Note

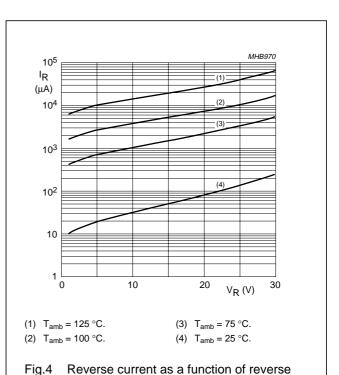
1. Refer to SOT223 standard mounting conditions.

Schottky barrier double diodes

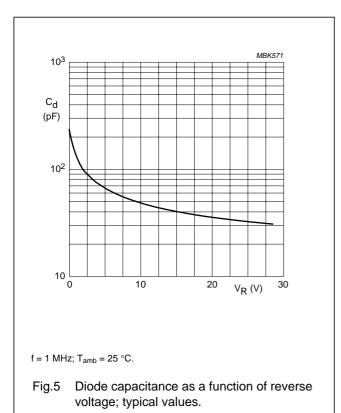
BAT120 series

GRAPHICAL DATA





voltage; typical values.



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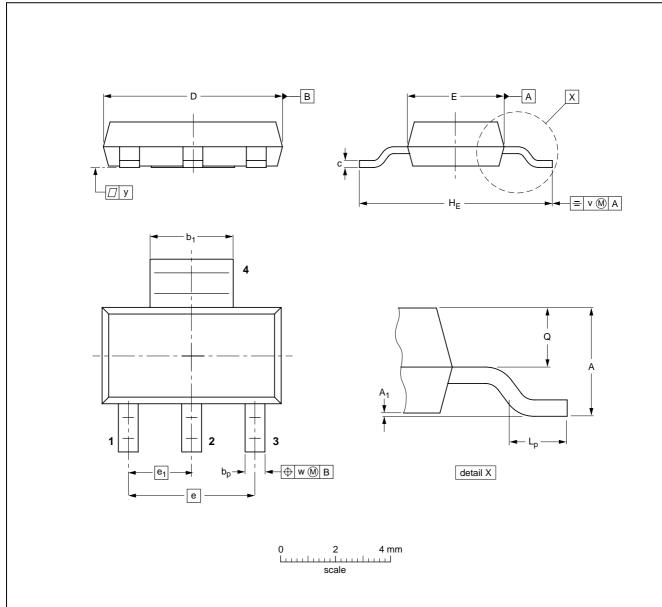
Schottky barrier double diodes

BAT120 series

PACKAGE OUTLINE

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

SOT223



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁	bp	b ₁	С	D	E	е	e ₁	HE	Lp	Q	v	w	у
mm	1.8 1.5	0.10 0.01	0.80 0.60	3.1 2.9	0.32 0.22		3.7 3.3	4.6	2.3	7.3 6.7	1.1 0.7	0.95 0.85	0.2	0.1	0.1

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

Schottky barrier double diodes

BAT120 series

DATA SHEET STATUS

LEVEL	DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾⁽³⁾	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.
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III	Product data	Production	This data sheet contains data from the product specification. Philips Semiconductors reserves the right to make changes at any time in order to improve the design, manufacturing and supply. Relevant changes will be communicated via a Customer Product/Process Change Notification (CPCN).

Notes

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- 3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

DEFINITIONS

Short-form specification — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). 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.

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