# ne<mark>x</mark>peria

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Should be replaced with:

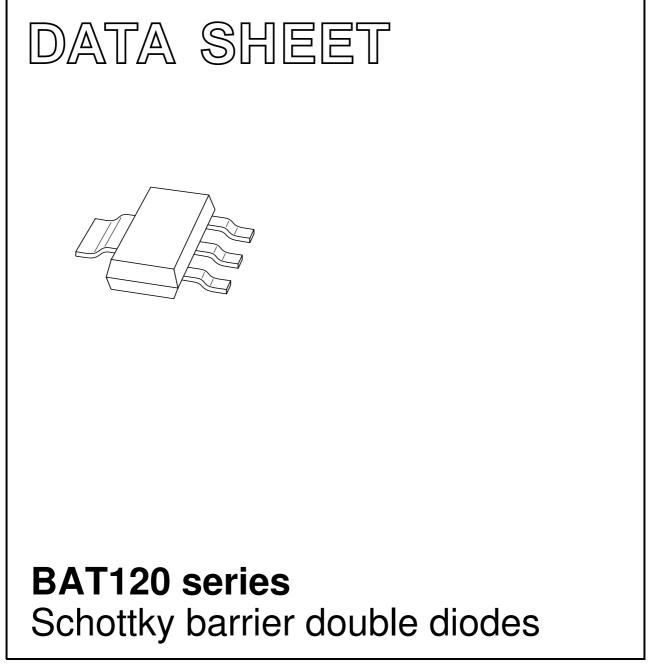
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If you have any questions related to the data sheet, please contact our nearest sales office via e-mail or telephone (details via **salesaddresses@nexperia.com**). Thank you for your cooperation and understanding,

Kind regards,

Team Nexperia

### DISCRETE SEMICONDUCTORS



Product data sheet Supersedes data of 2001 Aug 27 2003 Aug 04



### **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	

#### **BAT120** PIN С S Α 1 $k_1$ $a_1$ a<sub>1</sub> 2 n.c. n.c. n.c. 3 $k_2$ $a_2$ k<sub>2</sub> 4 $a_1, a_2$ $k_1, k_2$ k<sub>1</sub>, a<sub>2</sub>

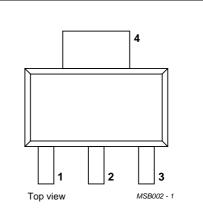
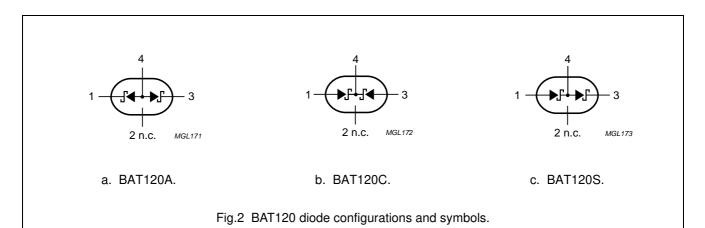


Fig.1 Simplified outline (SOT223) and pin configuration.



PINNING

### BAT120 series

### 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 <sub>R</sub>	continuous reverse voltage		_	25	V	
I <sub>F</sub>	continuous forward current		_	1	А	
I <sub>FSM</sub>	non-repetitive peak forward current	t <sub>p</sub> < 10 ms; half sinewave; JEDEC method	-	10	A	
I <sub>RSM</sub>	non-repetitive peak reverse current	t <sub>p</sub> = 100 μs	-	0.5	A	
T <sub>stg</sub>	storage temperature		-65	+150	°C	
Tj	junction temperature		-	125	°C	
T <sub>amb</sub>	operating ambient temperature		-65	+125	°C	

### ELECTRICAL CHARACTERISTICS

 $T_{amb} = 25 \ ^{\circ}C$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
Per diode					
V <sub>F</sub>	forward voltage	see Fig.3			
		I <sub>F</sub> = 100 mA	260	300	mV
		$I_F = 1 A$	400	450	mV
I <sub>R</sub>	reverse current	V <sub>R</sub> = 20 V; note 1; see Fig.4	80	500	μA
		$V_R = 25 V$ ; note 1; see Fig.4	-	1	mA
		V <sub>R</sub> = 20 V; T <sub>j</sub> = 100 °C; note 1	-	10	mA
C <sub>d</sub>	diode capacitance	$f = 1 \text{ MHz}; V_R = 4 \text{ V}; \text{ see Fig.5}$	100	-	pF

### Note

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

### THERMAL CHARACTERISTICS

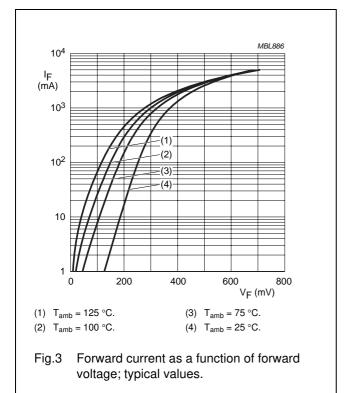
SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R <sub>th j-a</sub>	thermal resistance from junction to ambient	note 1	100	K/W

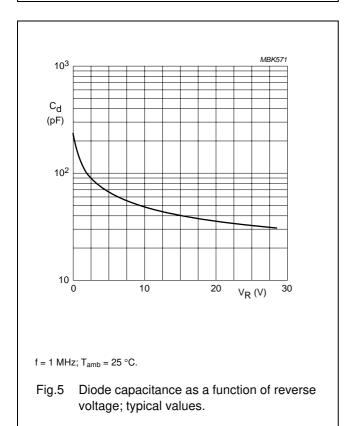
#### Note

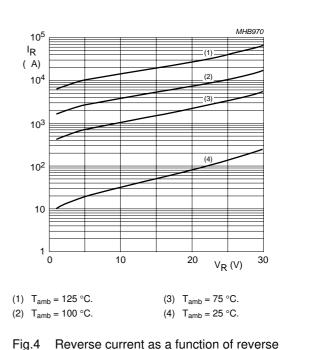
1. Refer to SOT223 standard mounting conditions.

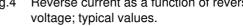
## BAT120 series

### **GRAPHICAL DATA**



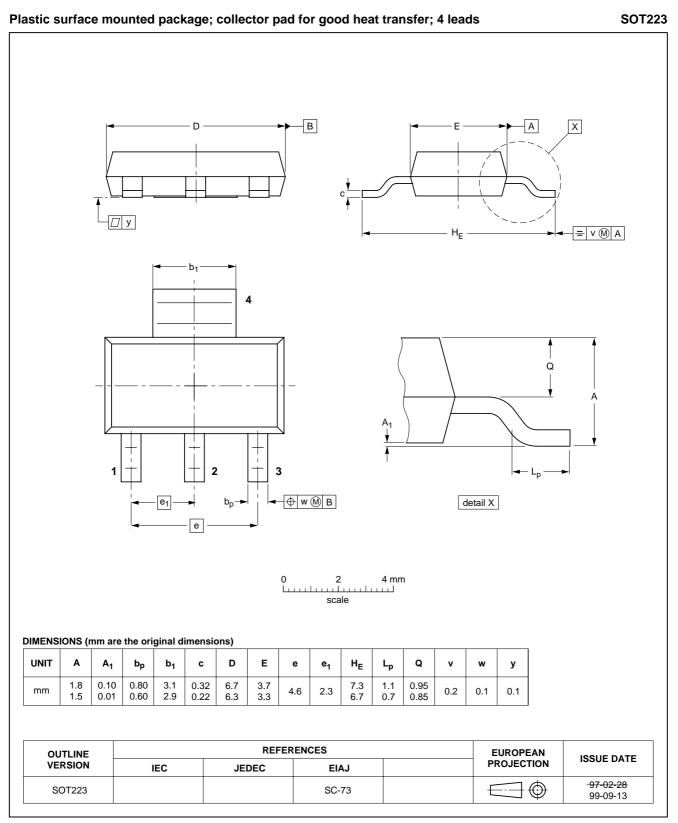






### BAT120 series

### PACKAGE OUTLINE



### BAT120 series

#### DATA SHEET STATUS

DOCUMENT STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

#### Notes

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### NXP Semiconductors

#### **Customer notification**

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#### **Contact information**

For additional information please visit: http://www.nxp.com For sales offices addresses send e-mail to: salesaddresses@nxp.com

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