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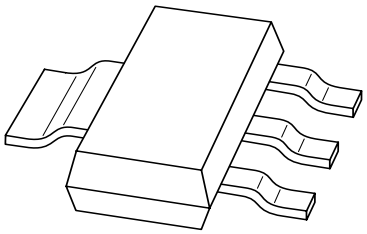
Kind regards,

Team Nexperia

DATA SHEET



BAT120 series
Schottky barrier double diodes

Product data sheet
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		
	A	C	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

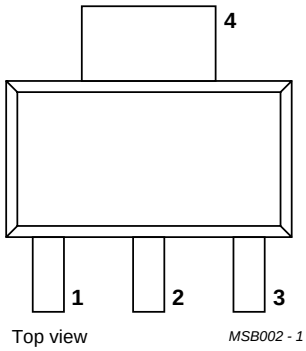
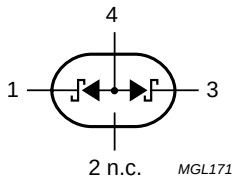
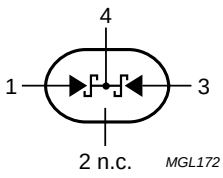


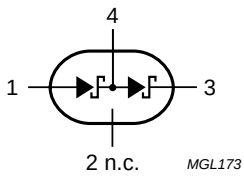
Fig.1 Simplified outline (SOT223) and pin configuration.



a. BAT120A.



b. BAT120C.



c. BAT120S.

Fig.2 BAT120 diode configurations and symbols.

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		–	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	$t_p = 100$ μs	–	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
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	μA
		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 MHz; V_R = 4 V; see Fig.5	100	–	pF

Note

1. Pulse test: t_p = 300 μs; δ = 0.02.

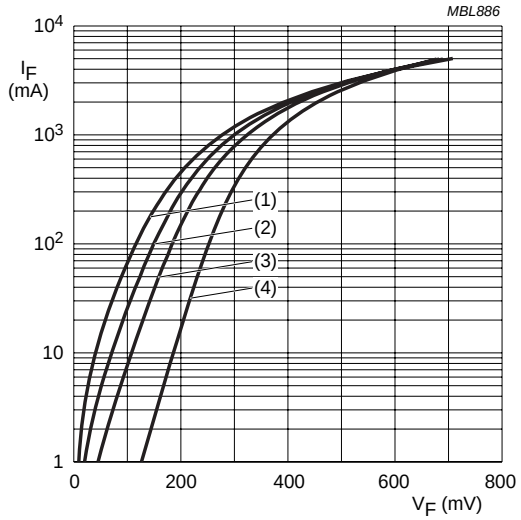
THERMAL CHARACTERISTICS

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

Note

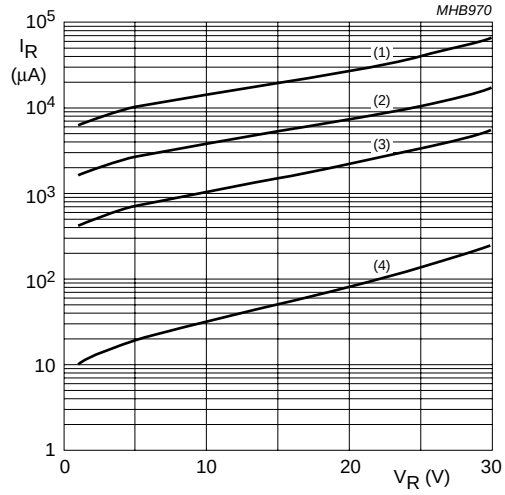
1. Refer to SOT223 standard mounting conditions.

GRAPHICAL DATA



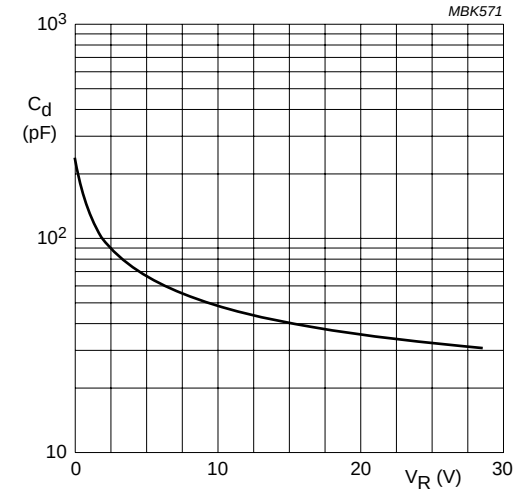
(1) T_{amb} = 125 °C.
(2) T_{amb} = 100 °C.
(3) T_{amb} = 75 °C.
(4) T_{amb} = 25 °C.

Fig.3 Forward current as a function of forward voltage; typical values.



(1) T_{amb} = 125 °C.
(2) T_{amb} = 100 °C.
(3) T_{amb} = 75 °C.
(4) T_{amb} = 25 °C.

Fig.4 Reverse current as a function of reverse voltage; typical values.

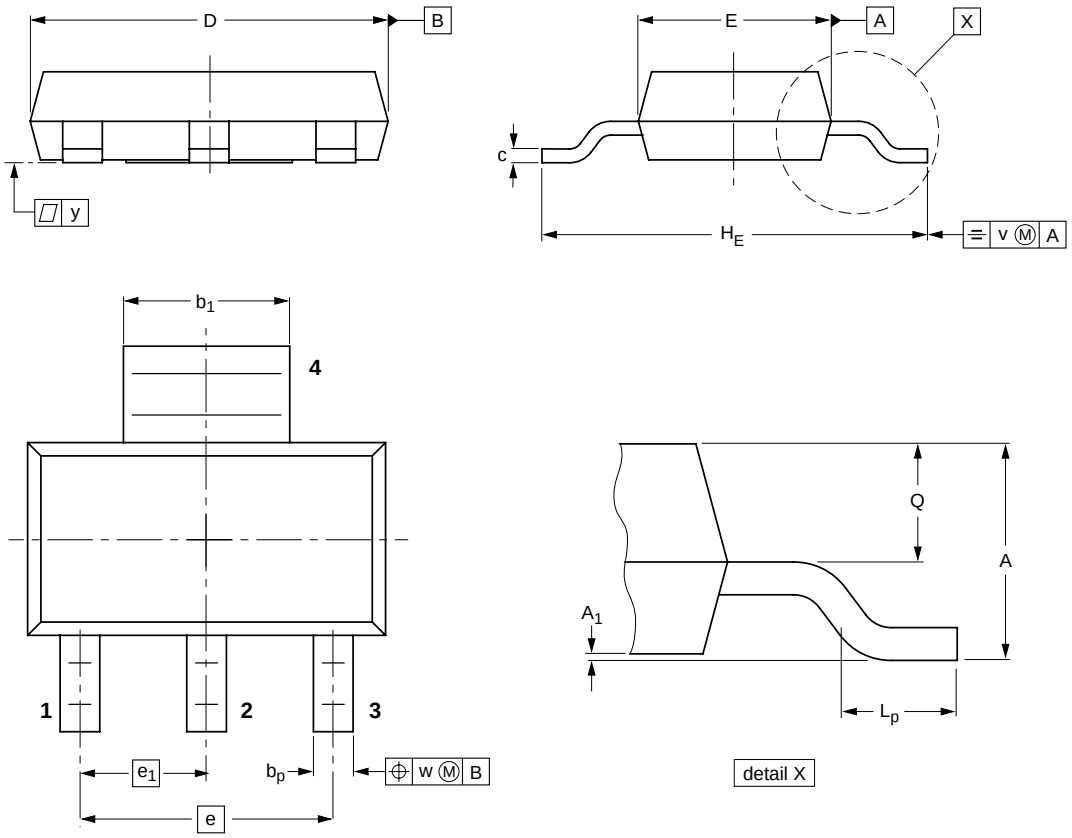


f = 1 MHz; T_{amb} = 25 °C.

Fig.5 Diode capacitance as a function of reverse voltage; typical values.

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	b_p	b_1	c	D	E	e	e_1	H_E	L_p	Q	v	w	y
mm	1.8 1.5	0.10 0.01	0.80 0.60	3.1 2.9	0.32 0.22	6.7 6.3	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 VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT223			SC-73			~~97-02-28~~ 99-09-13

DATA SHEET STATUS

DOCUMENT STATUS[1]	PRODUCT STATUS[2]	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

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Printed in The Netherlands 613514/04/pp7 Date of release: 2003 Aug 04 Document order number: 9397 750 11054