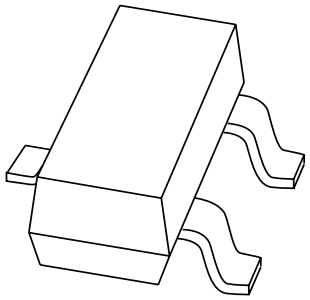
DATA SHEET



BAT721 series
Schottky barrier (double) diodes

Product specification
Supersedes data of 1999 May 06

2001 Oct 12

Philips
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Schottky barrier (double) diodes BAT721 series

FEATURES

- Ultra high switching speed
- Low forward voltage
- Guard ring protected
- Small plastic SMD package.

APPLICATIONS

- Ultra high-speed switching
- Voltage clamping
- Protection circuits.

DESCRIPTION

Planar Schottky barrier diodes encapsulated in a SOT23 small plastic SMD package. Single diodes and double diodes with different pinning are available.

MARKING

TYPE NUMBER	MARKING CODE(1)
BAT721	L7∗
BAT721A	L8∗
BAT721C	L9∗
BAT721S	L0∗

Note

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

PINNING

PIN	BAT721			
		A	C	S
1	a	k_1	a_1	a_1
2	n.c.	k_2	a_2	k_2
3	k	a_1, a_2	k_1, k_2	k_1, a_2

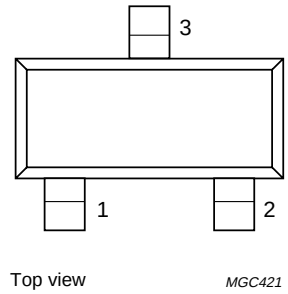


Fig.1 Simplified outline (SOT23) and pin configuration.

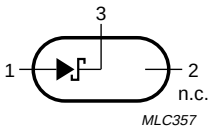


Fig.2 BAT721 single diode configuration (symbol).

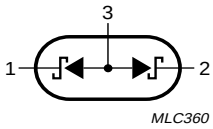


Fig.3 BAT721A diode configuration (symbol).

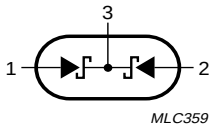


Fig.4 BAT721C diode configuration (symbol).

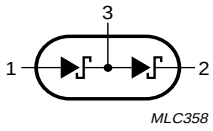


Fig.5 BAT721S diode configuration (symbol).

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_R	continuous reverse voltage		–	40	V
I_F	continuous forward current		–	200	mA
I_{FSM}	non-repetitive peak forward current	t_p = 8.3 ms half sinewave; JEDEC method	–	1	A
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	125	°C

ELECTRICAL CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_F	continuous forward voltage	see Fig.6			
		I_F = 10 mA	–	300	mV
		I_F = 100 mA	–	420	mV
		I_F = 200 mA	–	550	mV
I_R	continuous reverse current	V_R = 30 V; see Fig.7	–	15	µA
		V_R = 30 V; T_j = 100 °C; see Fig.7	–	3	mA
C_d	diode capacitance	f = 1 MHz; V_R = 0; see Fig.8	40	50	pF

Note

1. Pulse test: $t_p \leq 300$ µs; $\delta \leq 0.02$.

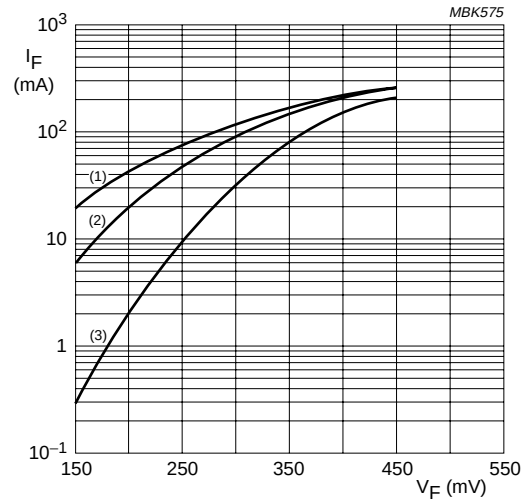
THERMAL CHARACTERISTICS

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

Note

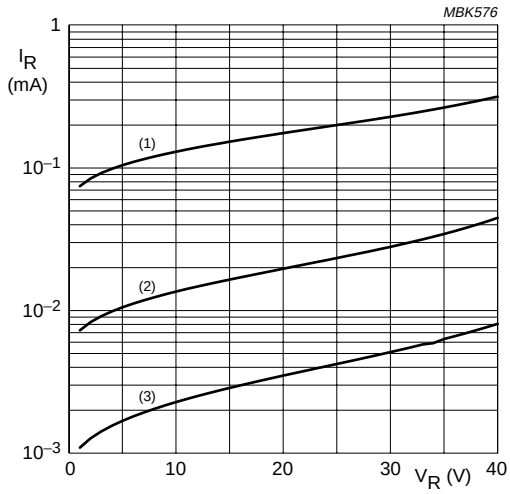
1. Refer to SOT23 standard mounting conditions.

GRAPHICAL DATA



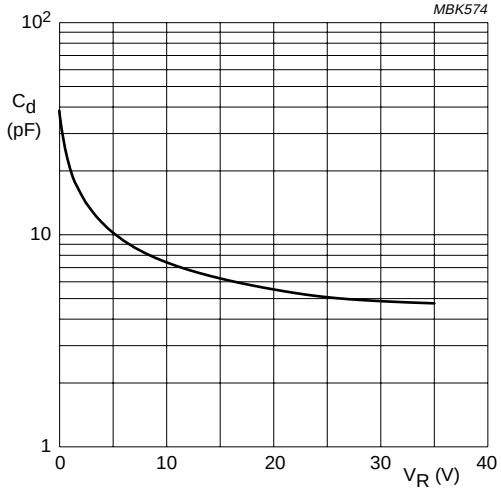
(1) T_{amb} = 125 °C.
(2) T_{amb} = 85 °C.
(3) T_{amb} = 25 °C.

Fig.6 Forward current as a function of forward voltage; typical values.



(1) T_{amb} = 125 °C.
(2) T_{amb} = 85 °C.
(3) T_{amb} = 25 °C.

Fig.7 Reverse current as a function of reverse voltage; typical values.

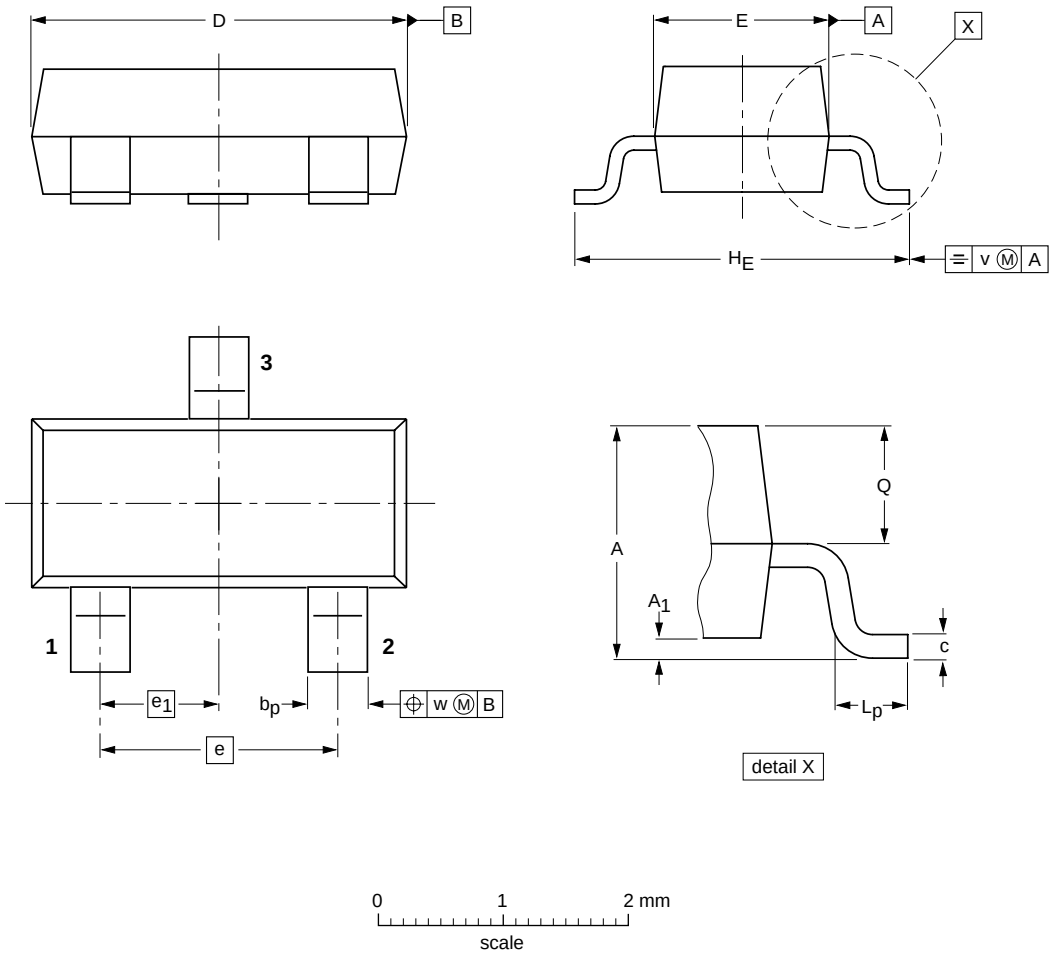


f = 1 MHz; T_j = 25 °C.

Fig.8 Diode capacitance as a function of reverse voltage; typical values.

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT23**



DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1 max.	b_p	c	D	E	e	e_1	H_E	L_p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT23		TO-236AB				~~97-02-28~~ 99-09-13

DATA SHEET STATUS

DATA SHEET STATUS[1]	PRODUCT STATUS[2]	DEFINITIONS
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.
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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Notes

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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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Printed in The Netherlands 613514/03/pp8 Date of release: 2001 Oct 12 Document order number: 9397 750 08763

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