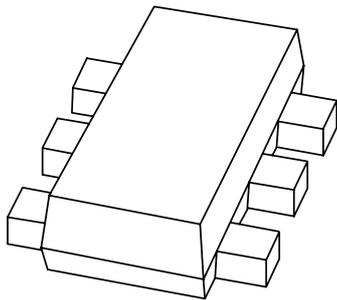


# DATA SHEET



## **BAT960** Schottky barrier diode

Product specification  
Supersedes data of 2002 Jun 24

2003 May 01

# Schottky barrier diode

# BAT960

## FEATURES

- High current capability
- Very low forward voltage
- Ultra small plastic SMD package
- Flat leads: excellent coplanarity and improved thermal behaviour.

## APPLICATIONS

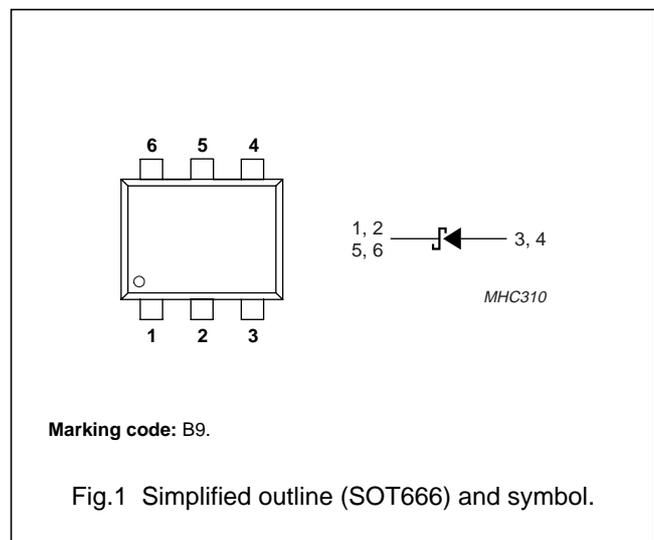
- Ultra high-speed switching
- rectification
- DC/DC conversion
- Switch mode power supply
- Inverse polarity protection.

## GENERAL DESCRIPTION

Planar Schottky barrier diode with an integrated guard ring for stress protection in a SOT666 ultra small SMD plastic package.

## PINNING

PIN	DESCRIPTION
1	cathode
2	cathode
3	anode
4	anode
5	cathode
6	cathode



## LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_R$	continuous reverse voltage		–	23	V
$I_F$	continuous forward current		–	1	A
$I_{FSM}$	non-repetitive peak forward current	$t = 8.3$ ms half sinewave; JEDEC method; note 1	–	8	A
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	125	°C
$T_{amb}$	operating ambient temperature		–65	+125	°C

## Note

1. Only valid, if pins 3 and 4 are connected in parallel.

## Schottky barrier diode

BAT960

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	405	K/W
		note 2	215	K/W

## Notes

1. Refer to SOT666 standard mounting conditions.
2. Mounted on printed circuit-board, 1 cm<sup>2</sup> copper area.

## Soldering

The only recommended soldering method is reflow soldering.

## CHARACTERISTICS

$T_{amb} = 25\text{ °C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
$V_F$	continuous forward voltage	$I_F = 10\text{ mA}$	240	270	mV
		$I_F = 100\text{ mA}$	300	350	mV
		$I_F = 1000\text{ mA}$ ; note 1; see Fig.2	480	550	mV
$I_R$	reverse current	$V_R = 5\text{ V}$ ; note 2	5	10	$\mu\text{A}$
		$V_R = 8\text{ V}$ ; note 2	7	20	$\mu\text{A}$
		$V_R = 15\text{ V}$ ; note 2; see Fig.3	10	50	$\mu\text{A}$
$C_d$	diode capacitance	$V_R = 5\text{ V}$ ; $f = 1\text{ MHz}$ ; see Fig.4	19	25	pF

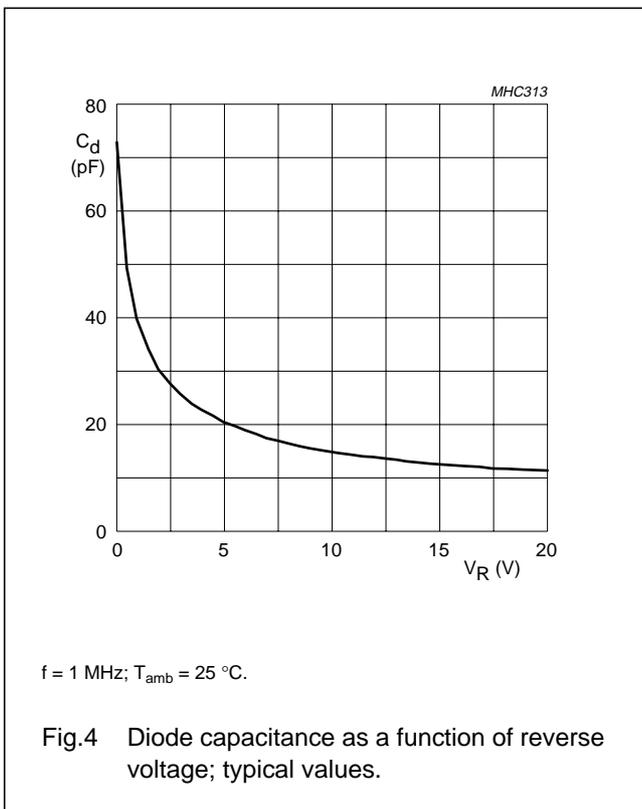
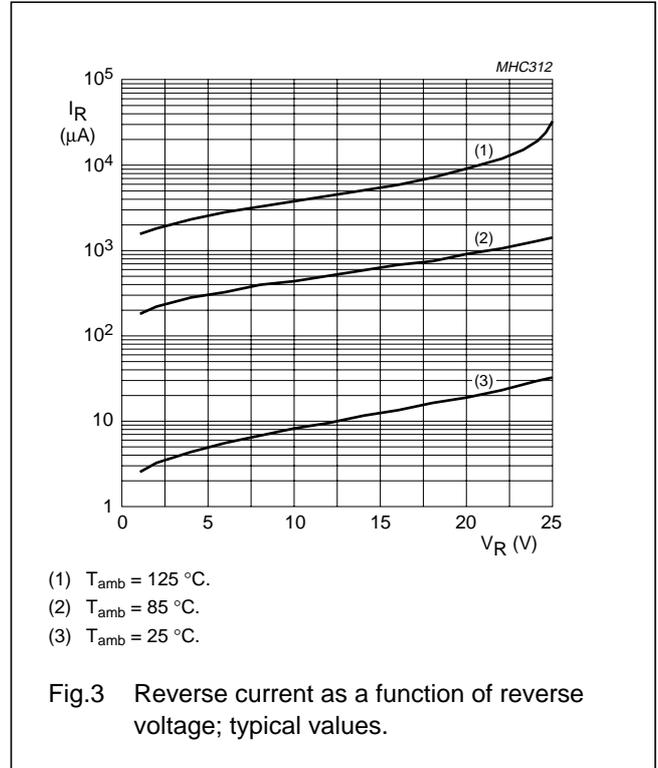
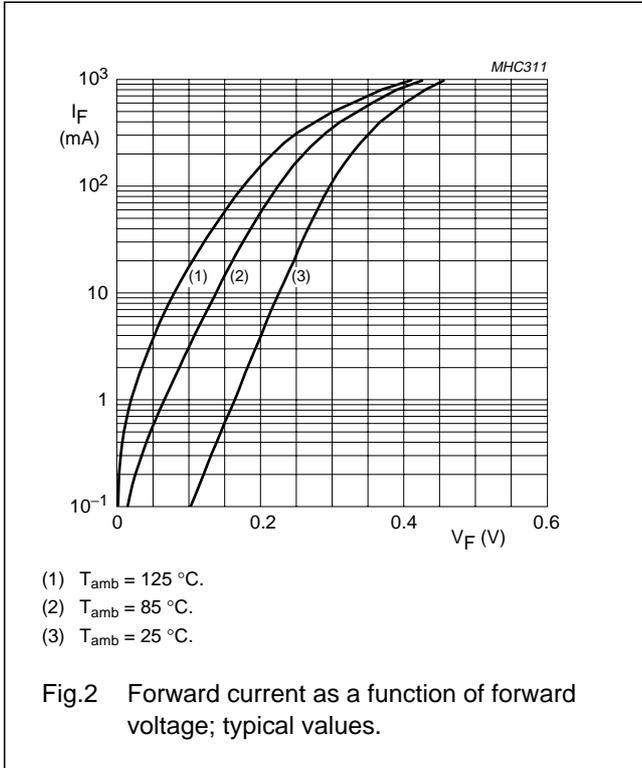
## Notes

1. Only valid, if pins 1, 2, 5 and 6 are soldered on a 1 cm<sup>2</sup> copper solder land.
2. Pulse test:  $t_p = 300\text{ }\mu\text{s}$ ;  $\delta = 0.02$ .

Schottky barrier diode

BAT960

GRAPHICAL DATA



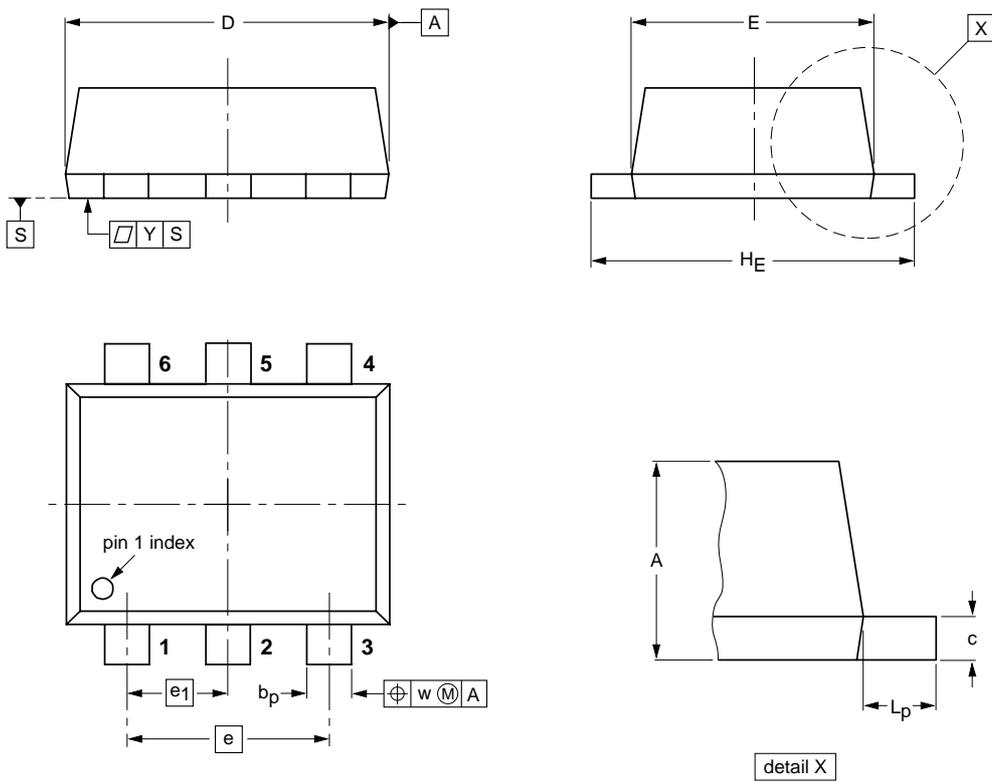
Schottky barrier diode

BAT960

PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT666



DIMENSIONS (mm are the original dimensions)

UNIT	A	$b_p$	c	D	E	e	$e_1$	$H_E$	$L_p$	w	y
mm	0.6 0.5	0.27 0.17	0.18 0.08	1.7 1.5	1.3 1.1	1.0	0.5	1.7 1.5	0.3 0.1	0.1	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT666						-01-01-04 01-08-27

## Schottky barrier diode

BAT960

## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	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.
II	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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**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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Schottky barrier diode

BAT960

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**NOTES**

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