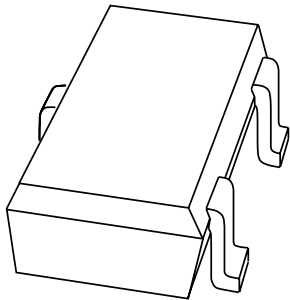


# DATA SHEET



## **1PS70SB20** Schottky barrier diode

Product specification

2001 Mar 16

# Schottky barrier diode

# 1PS70SB20

### FEATURES

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

### APPLICATIONS

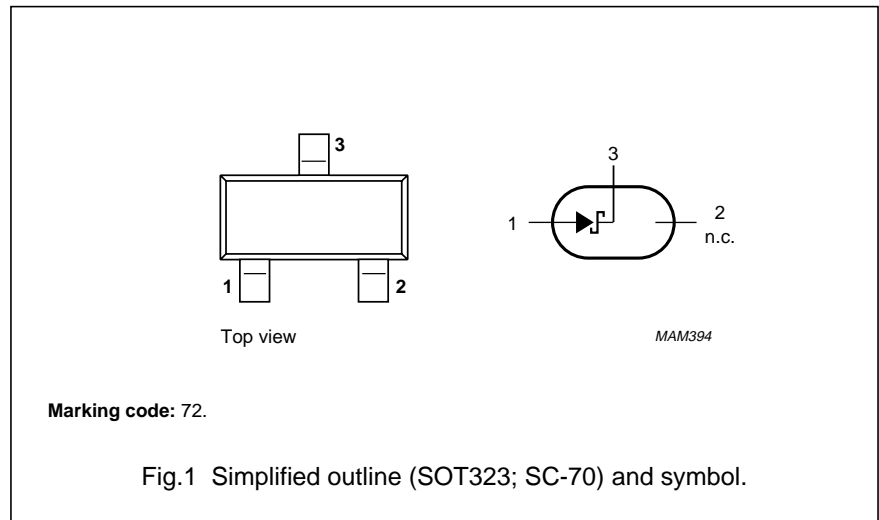
- Ultra high-speed switching
- Voltage clamping
- Protection circuits.

### PINNING

PIN	DESCRIPTION
1	anode
2	not connected
3	cathode

### DESCRIPTION

Planar Schottky barrier diode with an integrated guard ring for stress protection in a SOT323 (SC-70) small SMD plastic package.



### 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	–	–	500	mA
$I_{FSM}$	non-repetitive peak forward current	$t = 8.3$ ms half sine wave; JEDEC method	–	2	A
$T_{stg}$	storage temperature	–	–65	+150	°C
$T_j$	junction temperature	–	–	125	°C

## Schottky barrier diode

## 1PS70SB20

**ELECTRICAL CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_F$	forward voltage	$I_F = 500\text{ mA}$ ; see Fig.2	–	550	mV
$I_R$	reverse current	$V_R = 35\text{ V}$ ; see Fig.3	–	100	$\mu\text{A}$
		$V_R = 35\text{ V}$ ; $T_j = 100\text{ °C}$ ; see Fig.3; note 1	–	10	mA
$C_d$	diode capacitance	$f = 1\text{ MHz}$ ; $V_R = 0$ ; see Fig.4	60	90	pF

**Note**

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

**THERMAL CHARACTERISTICS**

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

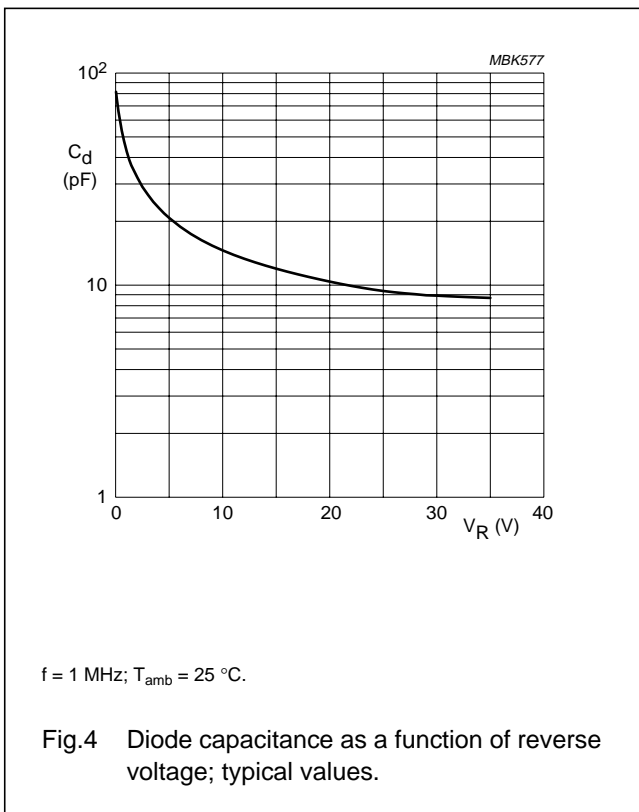
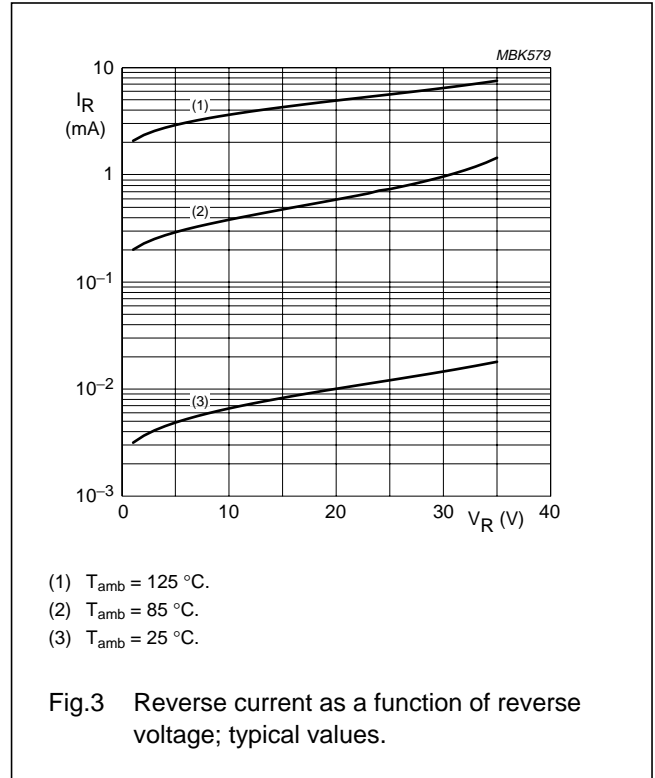
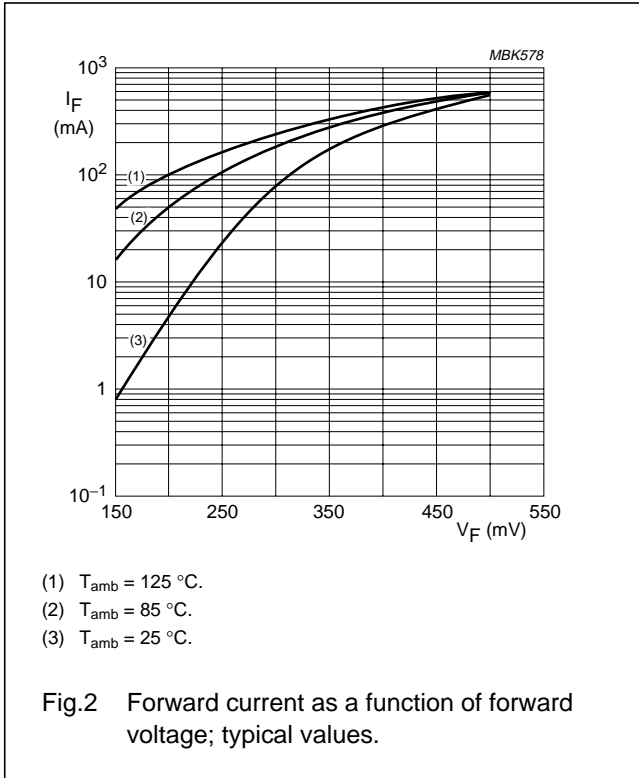
**Note**

1. Refer to SOT323 (SC-70) standard mounting conditions.

Schottky barrier diode

1PS70SB20

GRAPHICAL DATA



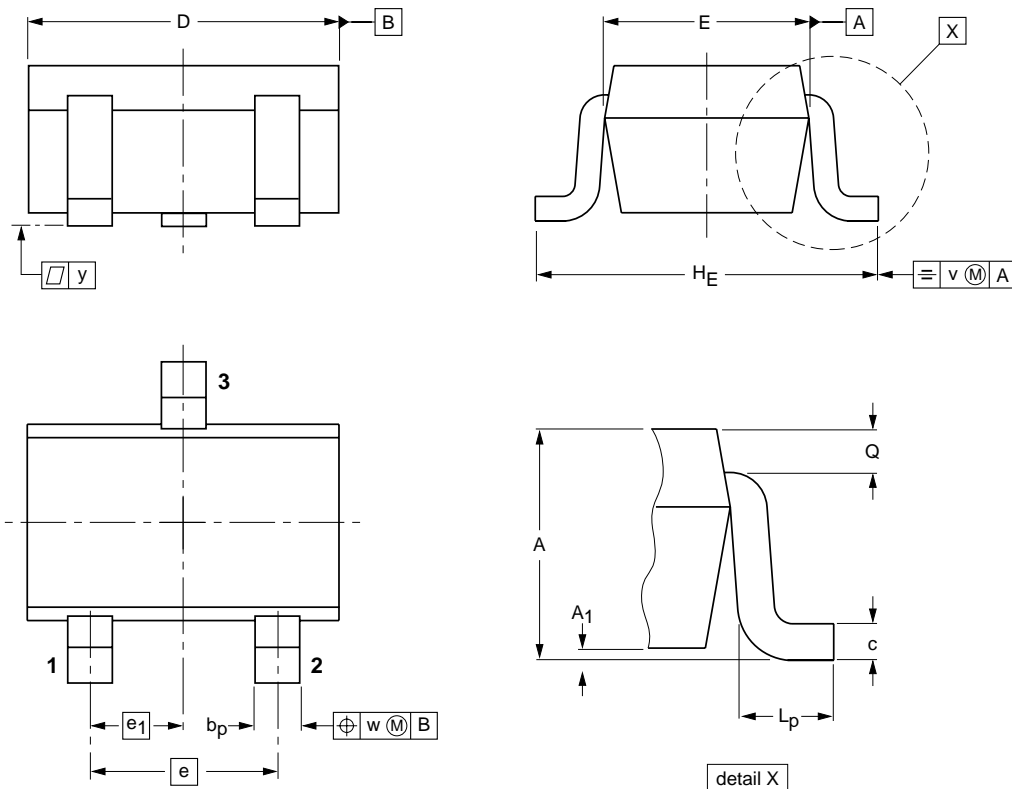
Schottky barrier diode

1PS70SB20

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	Q	v	w
mm	1.1 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT323			SC-70			97-02-28

## Schottky barrier diode

1PS70SB20

## DATA SHEET STATUS

DATA SHEET STATUS	PRODUCT STATUS	DEFINITIONS <sup>(1)</sup>
Objective specification	Development	This data sheet contains the design target or goal specifications for product development. Specification may change in any manner without notice.
Preliminary specification	Qualification	This data sheet contains preliminary data, and supplementary data will be published at a later date. Philips Semiconductors reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.
Product specification	Production	This data sheet contains final specifications. Philips Semiconductors reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.

## Note

1. Please consult the most recently issued data sheet before initiating or completing a design.

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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

1PS70SB20

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