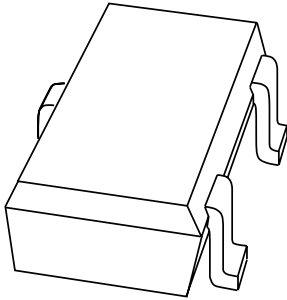


# DATA SHEET



**1PS70SB82; 1PS70SB84;  
1PS70SB85; 1PS70SB86**  
Schottky barrier (double) diodes

Product specification

2001 Jan 18

# Schottky barrier (double) diodes

## 1PS70SB82; 1PS70SB84; 1PS70SB85; 1PS70SB86

### FEATURES

- Low forward voltage
- Very small SMD plastic package
- Low diode capacitance.

### APPLICATIONS

- UHF mixers
- Sampling circuits
- Modulators
- Phase detectors.

### DESCRIPTION

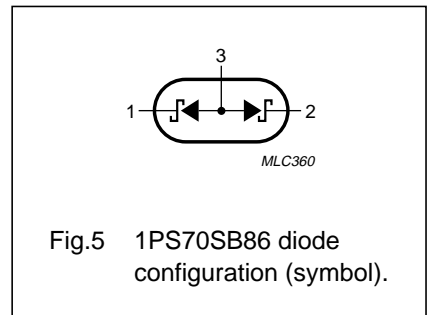
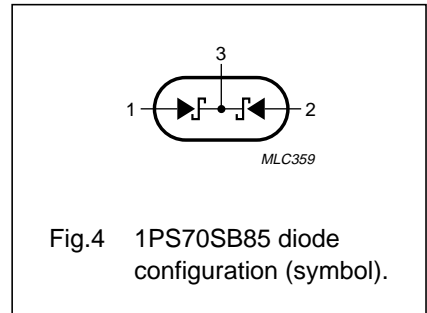
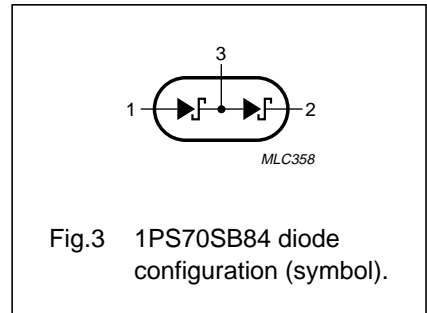
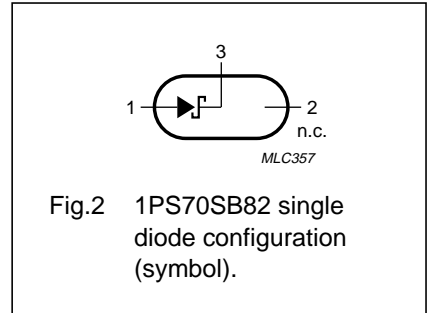
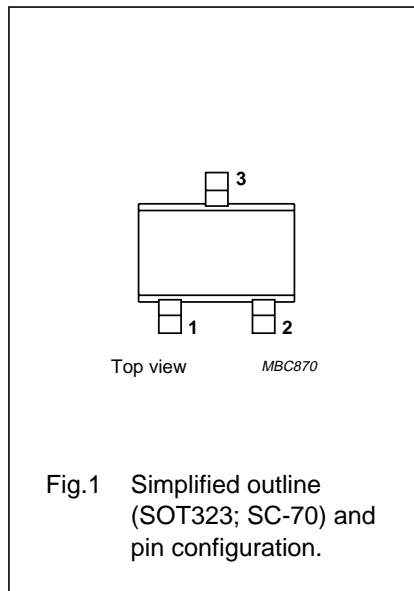
Planar Schottky barrier diodes encapsulated in a SOT323 (SC-70) very small plastic SMD package. Single diodes and double diodes with different pinning are available. ESD sensitive device, observe handling precautions.

### MARKING

TYPE NUMBER	MARKING CODE
1PS70SB82	88
1PS70SB84	87
1PS70SB85	85
1PS70SB86	86

### PINNING

PIN	SYMBOL
<b>1PS70SB82</b>	
1	a
2	n.c.
3	k
<b>1PS70SB84</b>	
1	a <sub>1</sub>
2	k <sub>2</sub>
3	k <sub>1</sub> and a <sub>2</sub>
<b>1PS70SB85</b>	
1	a <sub>1</sub>
2	a <sub>2</sub>
3	k <sub>1</sub> and k <sub>2</sub>
<b>1PS70SB86</b>	
1	k <sub>1</sub>
2	k <sub>2</sub>
3	a <sub>1</sub> and a <sub>2</sub>



## Schottky barrier (double) diodes

1PS70SB82; 1PS70SB84;  
1PS70SB85; 1PS70SB86**LIMITING VALUES**

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

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
<b>Per diode</b>				
$V_R$	continuous reverse voltage	–	15	V
$I_F$	continuous forward current	–	30	mA
$T_{stg}$	storage temperature	–65	+150	°C
$T_j$	junction temperature	–	125	°C

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	625	K/W

**Note**

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

**ELECTRICAL CHARACTERISTICS** $T_{amb} = 25\text{ °C}$ ; unless otherwise specified.

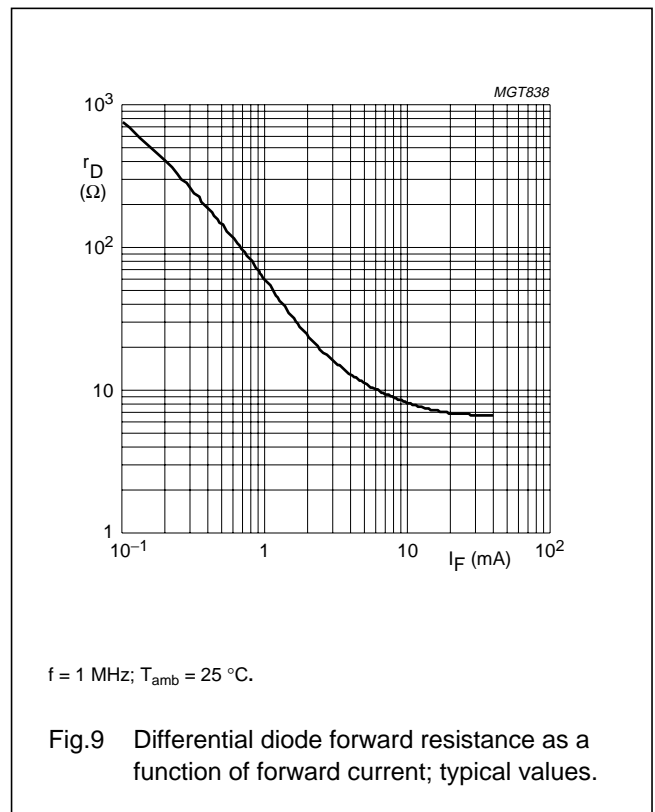
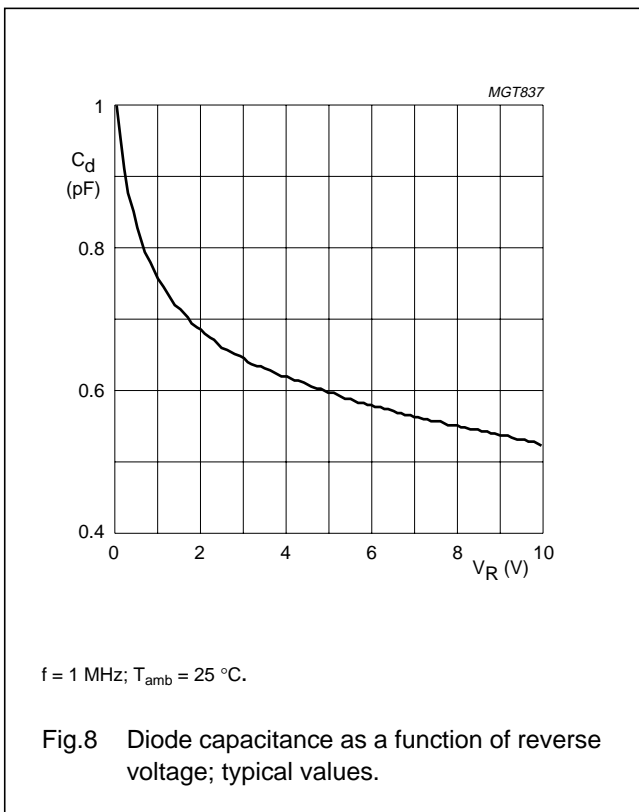
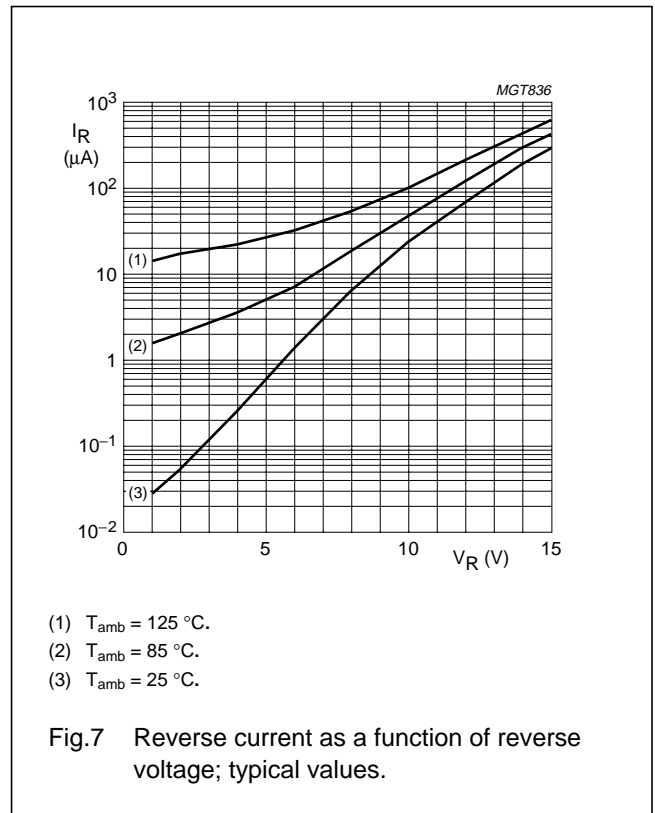
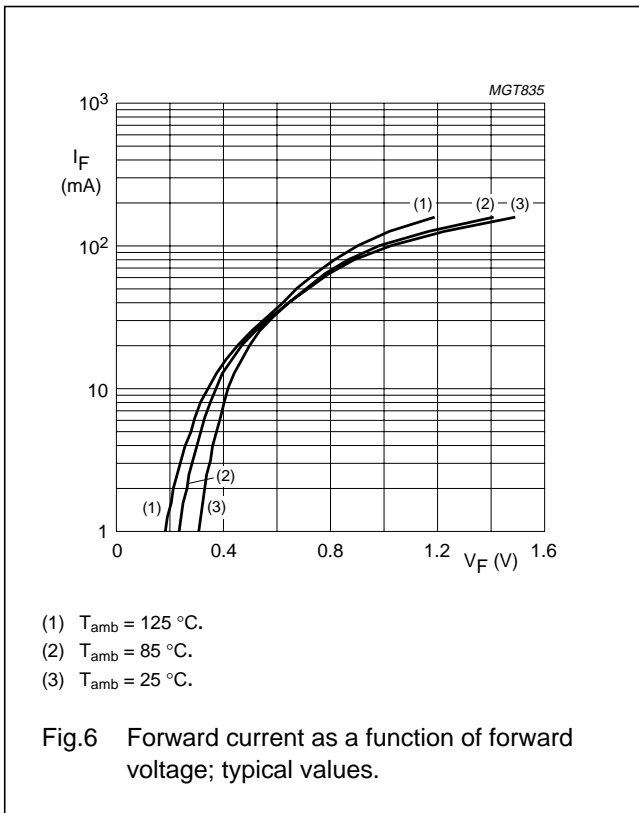
SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
<b>Per diode</b>					
$V_F$	forward voltage	see Fig.6 $I_F = 1\text{ mA}$	–	340	mV
		$I_F = 30\text{ mA}$	–	700	mV
$r_D$	differential diode forward resistance	$f = 1\text{ MHz}$ ; $I_F = 5\text{ mA}$ ; see Fig.9	12	–	$\Omega$
$I_R$	continuous reverse current	$V_R = 1\text{ V}$ ; note 1; see Fig.7	–	0.2	$\mu\text{A}$
$C_d$	diode capacitance	$V_R = 0$ ; $f = 1\text{ MHz}$ ; see Fig.8	1	–	pF

**Note**

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

Schottky barrier (double) diodes

1PS70SB82; 1PS70SB84;  
1PS70SB85; 1PS70SB86



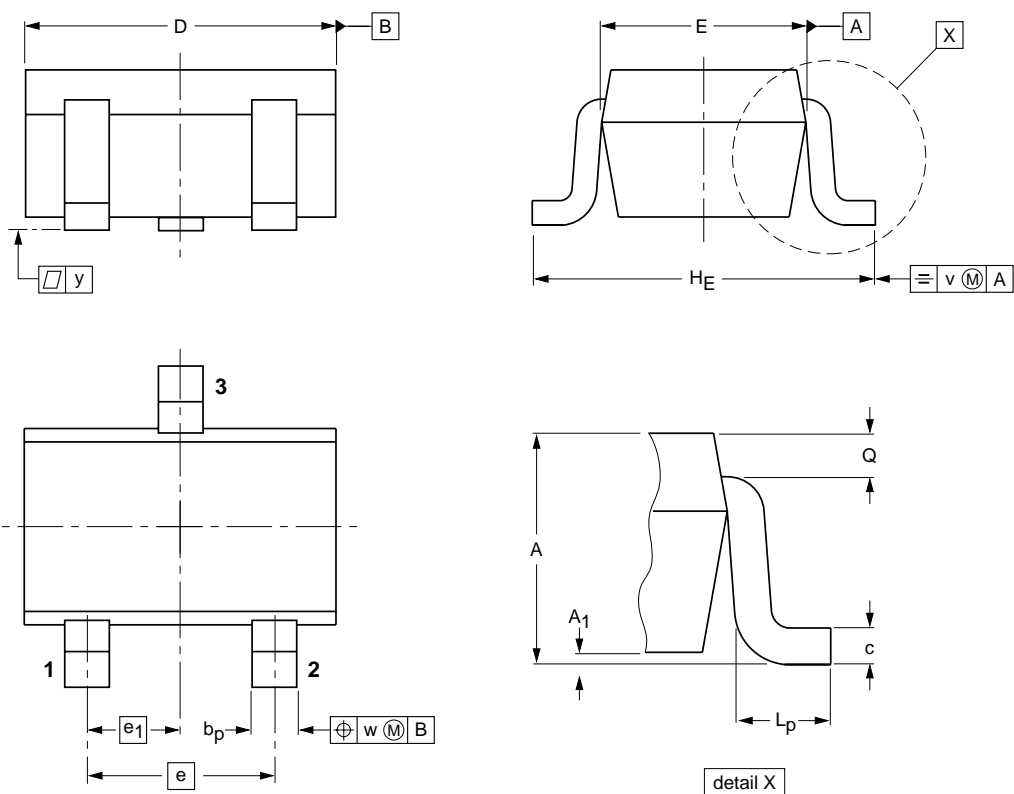
Schottky barrier (double) diodes

1PS70SB82; 1PS70SB84;  
1PS70SB85; 1PS70SB86

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 (double) diodes

1PS70SB82; 1PS70SB84;  
1PS70SB85; 1PS70SB86

## 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.

## DEFINITIONS

**Short-form specification** — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

**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 (double) diodes

1PS70SB82; 1PS70SB84;  
1PS70SB85; 1PS70SB86

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SCA 71

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