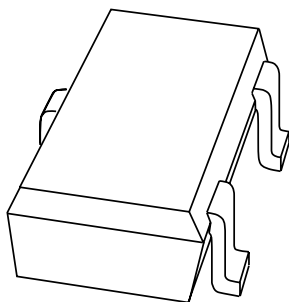


DATA SHEET



**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

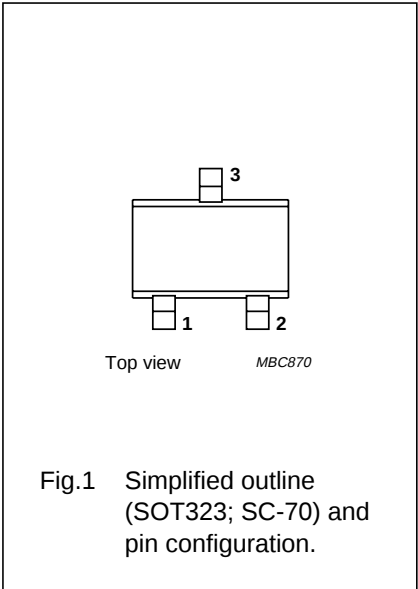
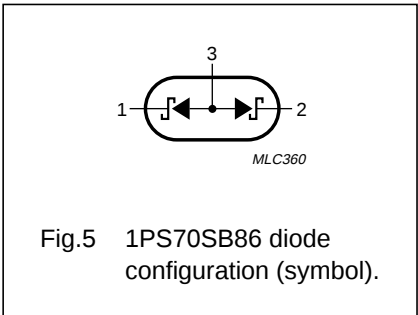
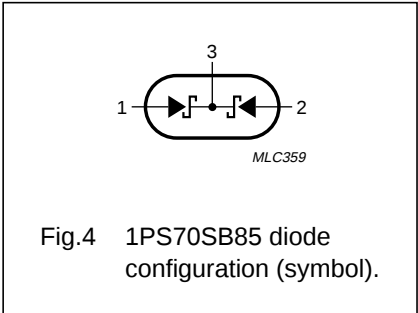
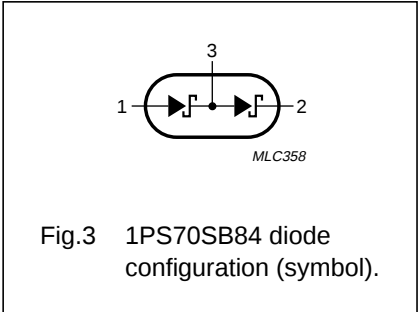
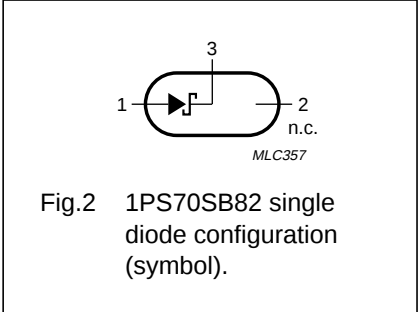
Planar Schottky barrier diodes encapsulated in a SOT323 (SC-70) very small plastic SMD package. Single diodes and double diodes with different pinning are available. ESD sensitive device, observe handling precautions.

MARKING

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

PINNING

PIN	SYMBOL
1PS70SB82	
1	a
2	n.c.
3	k
1PS70SB84	
1	a ₁
2	k ₂
3	k ₁ and a ₂
1PS70SB85	
1	a ₁
2	a ₂
3	k ₁ and k ₂
1PS70SB86	
1	k ₁
2	k ₂
3	a ₁ and a ₂



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
Per diode				
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.

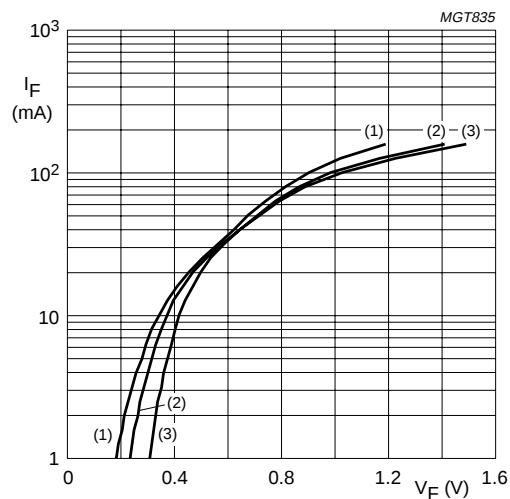
SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
Per diode					
V_F	forward voltage	see Fig.6 $I_F = 1\text{ mA}$	–	340	mV
		$I_F = 30\text{ mA}$	–	700	mV
r_D	differential diode forward resistance	$f = 1\text{ MHz}$; $I_F = 5\text{ mA}$; see Fig.9	12	–	Ω
I_R	continuous reverse current	$V_R = 1\text{ V}$; note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

Note

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

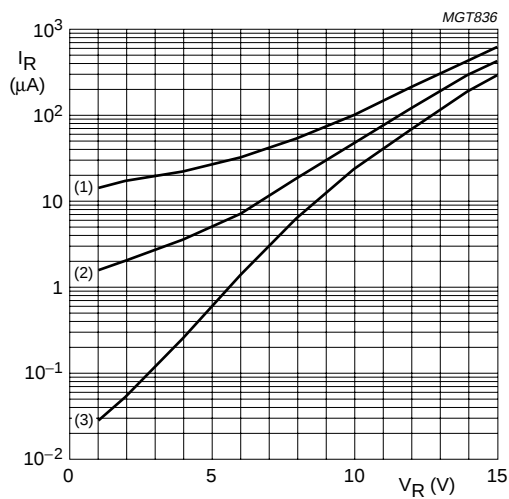
Schottky barrier (double) diodes

1PS70SB82; 1PS70SB84;
1PS70SB85; 1PS70SB86



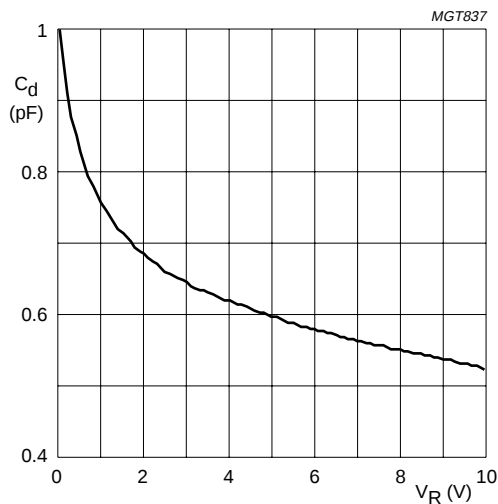
- (1) $T_{amb} = 125\text{ }^{\circ}\text{C}.$
- (2) $T_{amb} = 85\text{ }^{\circ}\text{C}.$
- (3) $T_{amb} = 25\text{ }^{\circ}\text{C}.$

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



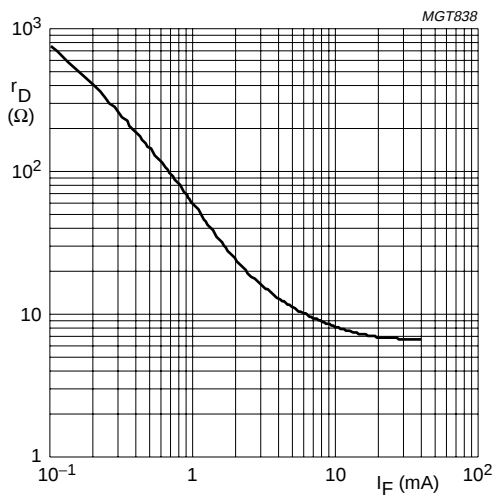
- (1) $T_{amb} = 125\text{ }^{\circ}\text{C}.$
- (2) $T_{amb} = 85\text{ }^{\circ}\text{C}.$
- (3) $T_{amb} = 25\text{ }^{\circ}\text{C}.$

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



$f = 1\text{ MHz}; T_{amb} = 25\text{ }^{\circ}\text{C}.$

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



$f = 1\text{ MHz}; T_{amb} = 25\text{ }^{\circ}\text{C}.$

Fig.9 Differential diode forward resistance as a function of forward current; typical values.

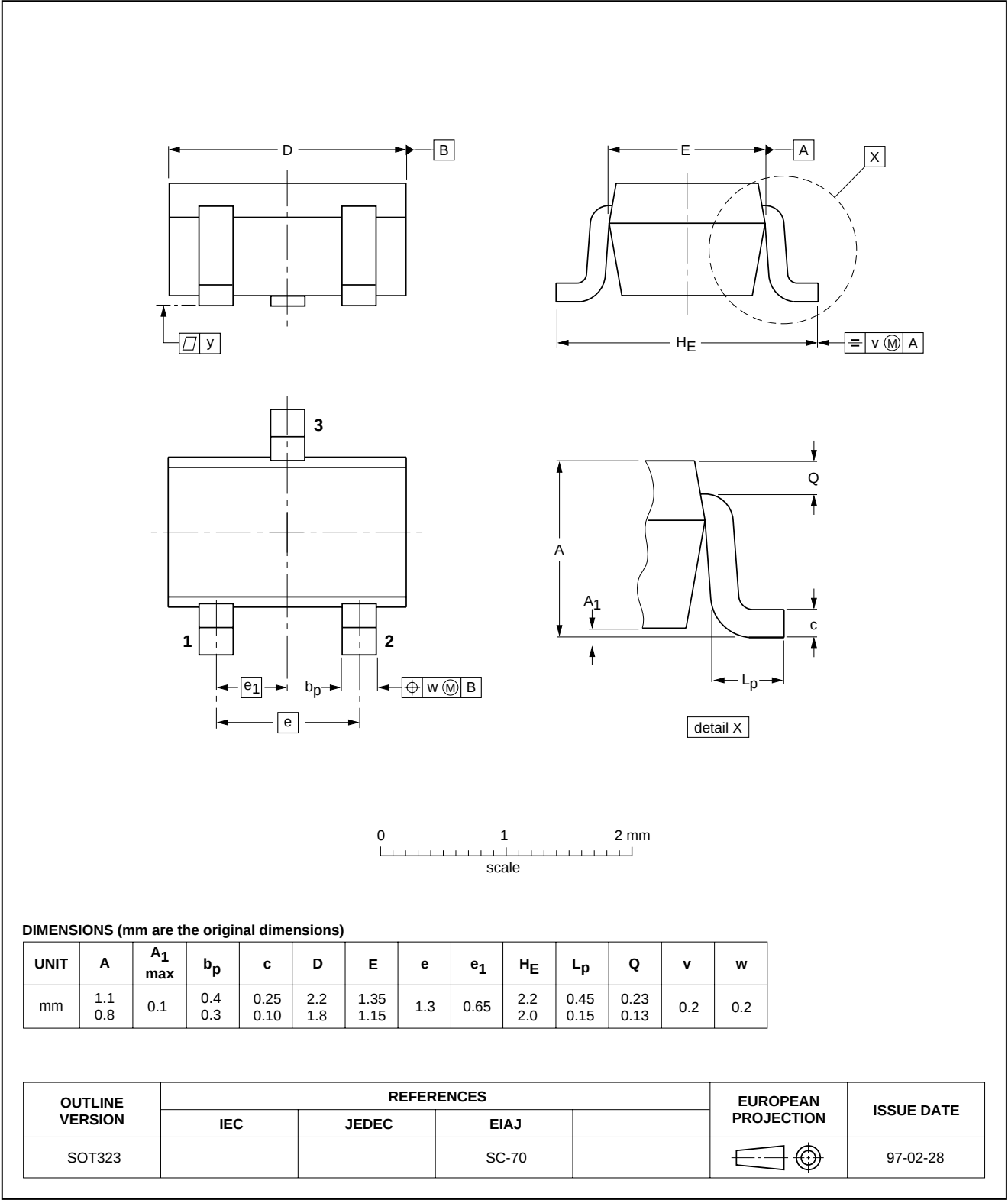
Schottky barrier (double) diodes

1PS70SB82; 1PS70SB84;
1PS70SB85; 1PS70SB86

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



Schottky barrier (double) diodes

1PS70SB82; 1PS70SB84;
1PS70SB85; 1PS70SB86

DATA SHEET STATUS

DATA SHEET STATUS	PRODUCT STATUS	DEFINITIONS ⁽¹⁾
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

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