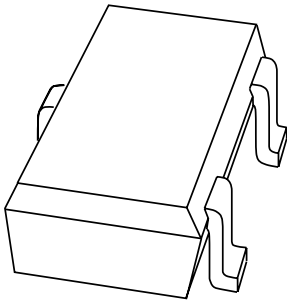


# DATA SHEET



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

Product data sheet

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

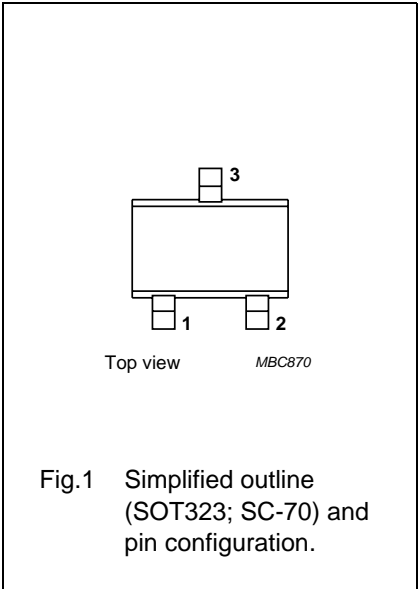
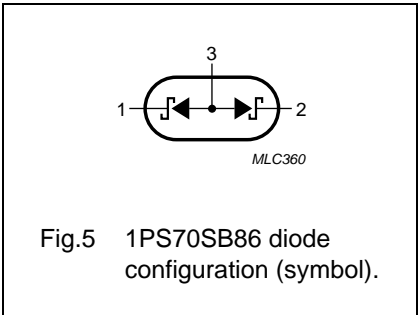
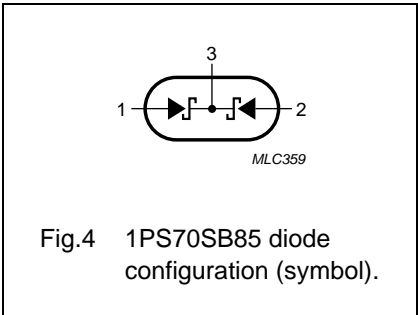
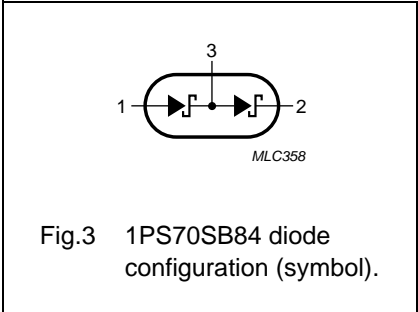
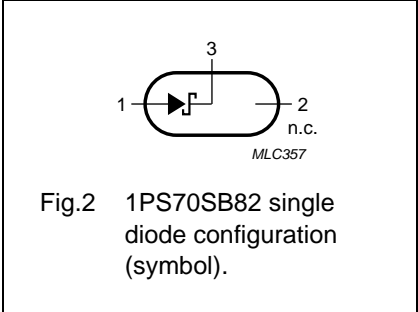
Planar Schottky barrier diodes encapsulated in a SOT323 (SC-70) very small plastic SMD package. Single diodes and double diodes with different pinning are available. ESD sensitive device, observe handling precautions.

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.

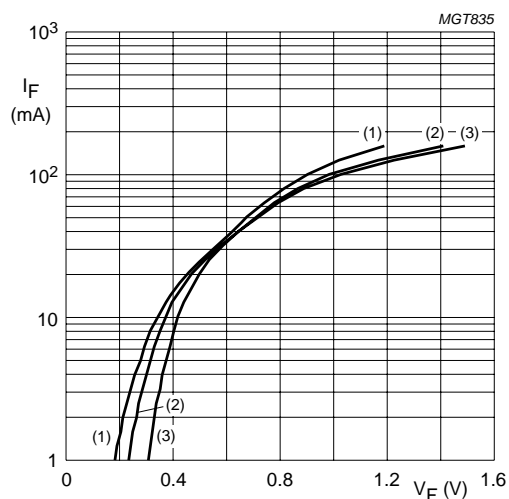
SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
<b>Per diode</b>					
$V_F$	forward voltage	see Fig.6			
		$I_F = 1\text{ mA}$	–	340	mV
		$I_F = 30\text{ mA}$	–	700	mV
$r_D$	differential diode forward resistance	$f = 1\text{ MHz}$ ; $I_F = 5\text{ mA}$ ; see Fig.9	12	–	$\Omega$
$I_R$	continuous reverse current	$V_R = 1\text{ V}$ ; 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:  $t_p = 300\text{ }\mu\text{s}$ ;  $\delta = 0.02$ .

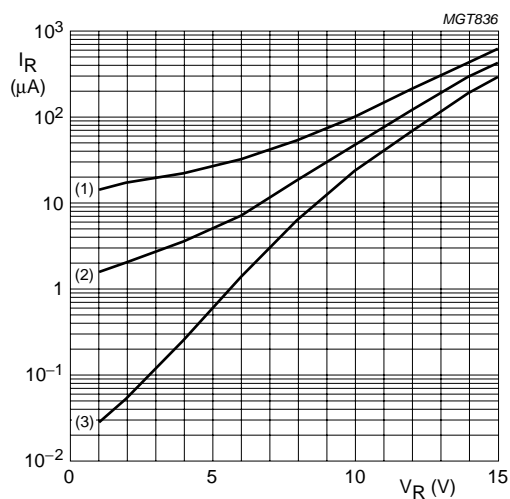


## Schottky barrier (double) diodes

1PS70SB82; 1PS70SB84;  
1PS70SB85; 1PS70SB86

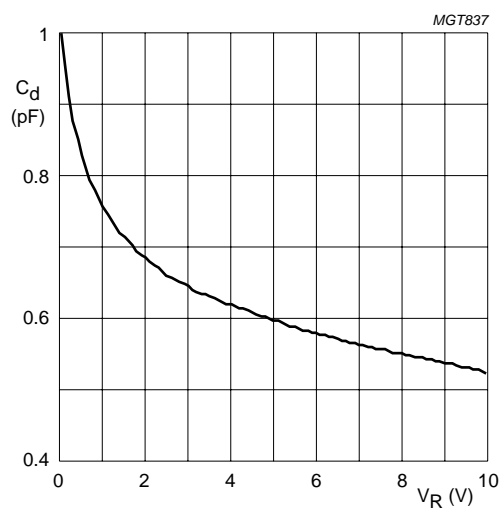
- (1)  $T_{amb} = 125^\circ\text{C}$ .  
 (2)  $T_{amb} = 85^\circ\text{C}$ .  
 (3)  $T_{amb} = 25^\circ\text{C}$ .

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



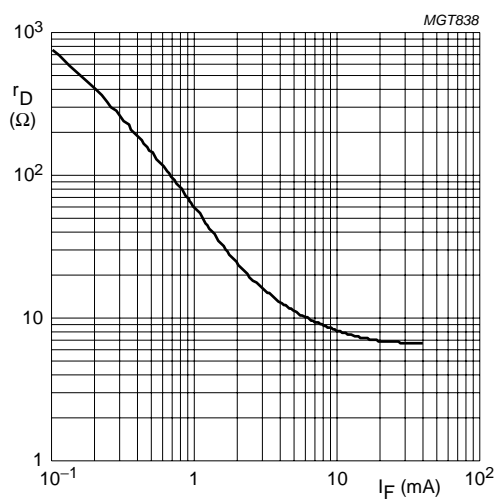
- (1)  $T_{amb} = 125^\circ\text{C}$ .  
 (2)  $T_{amb} = 85^\circ\text{C}$ .  
 (3)  $T_{amb} = 25^\circ\text{C}$ .

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



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

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



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

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



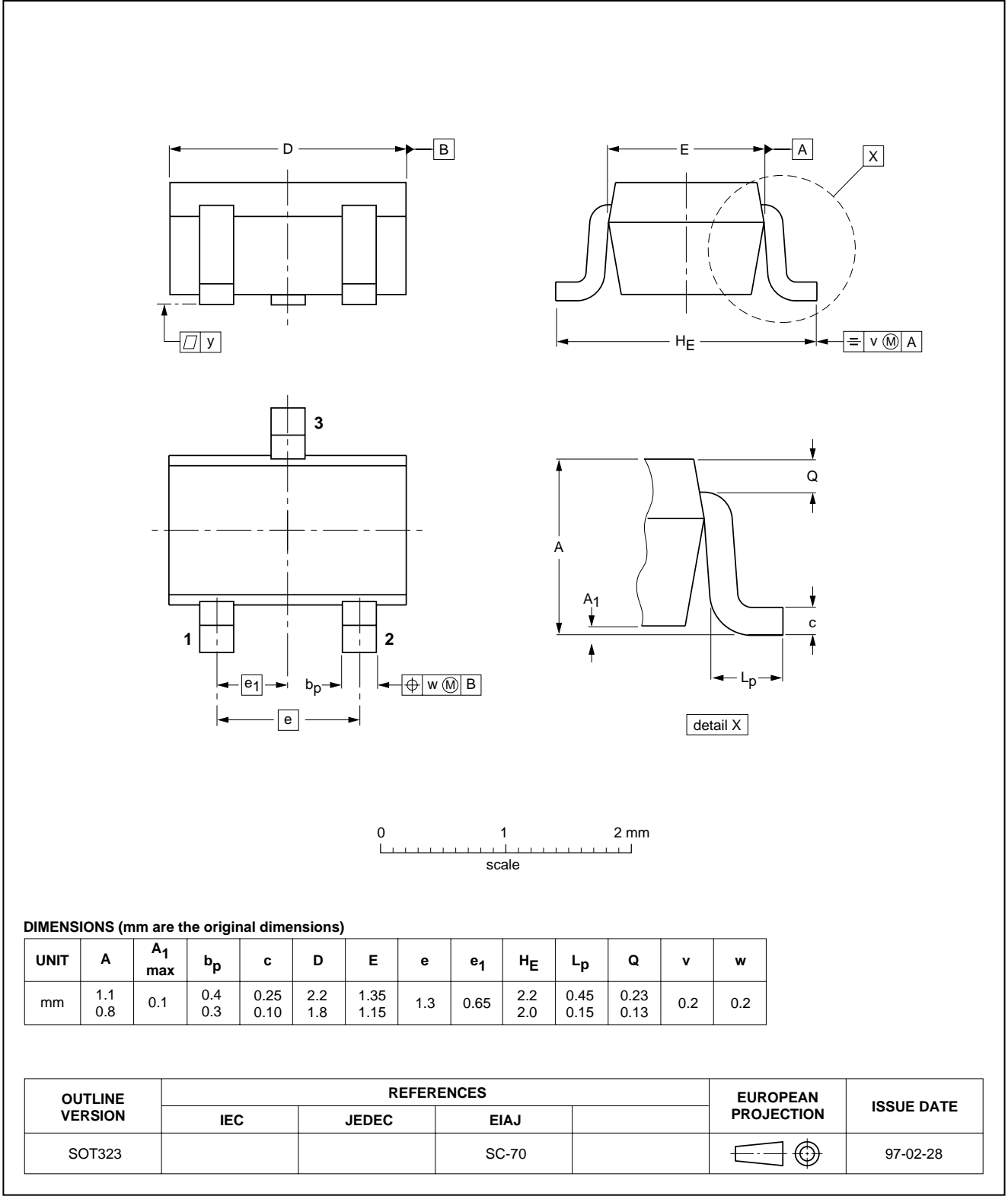
Schottky barrier (double) diodes

1PS70SB82; 1PS70SB84;  
1PS70SB85; 1PS70SB86

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323





## Schottky barrier (double) diodes

1PS70SB82; 1PS70SB84;  
1PS70SB85; 1PS70SB86

## DATA SHEET STATUS

DOCUMENT STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

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