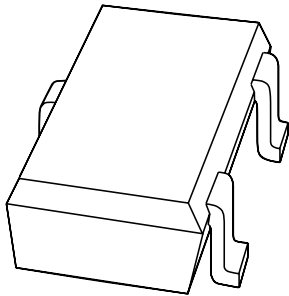


# DATA SHEET



**1PS70SB10; 1PS70SB14;  
1PS70SB15; 1PS70SB16**  
Schottky barrier (double) diodes

Product specification

1999 Apr 26

# Schottky barrier (double) diodes

## 1PS70SB10; 1PS70SB14; 1PS70SB15; 1PS70SB16

### FEATURES

- Low forward voltage
- Guard ring protected
- Very small plastic SMD package.

### APPLICATIONS

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

### DESCRIPTION

Planar Schottky barrier diodes encapsulated in a SOT323 very small plastic SMD package. Single diodes and double diodes with different pinning are available.

### MARKING

TYPE NUMBER	MARKING CODE <sup>(1)</sup>
1PS70SB10	7*0
1PS70SB14	7*4
1PS70SB15	7*5
1PS70SB16	7*6

### Note

- \* = -: Made in Hong Kong.  
\* = t: Made in Malaysia.

### PINNING

PIN	1PS70SB..			
	10	14	15	16
1	a <sub>1</sub>	a <sub>1</sub>	a <sub>1</sub>	k <sub>1</sub>
2	n.c.	k <sub>2</sub>	a <sub>2</sub>	k <sub>2</sub>
3	k <sub>1</sub>	k <sub>1</sub> , a <sub>2</sub>	k <sub>1</sub> , k <sub>2</sub>	a <sub>1</sub> , a <sub>2</sub>

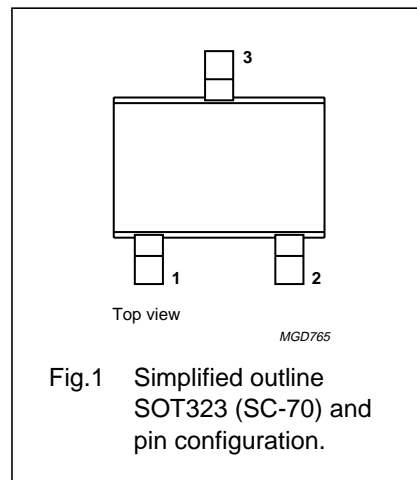


Fig.1 Simplified outline SOT323 (SC-70) and pin configuration.

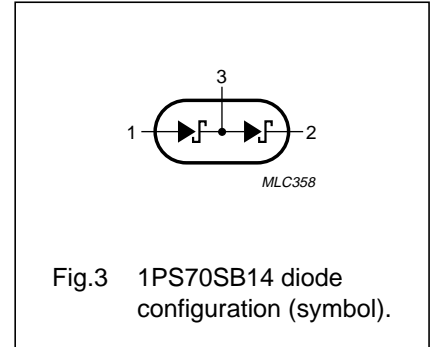


Fig.3 1PS70SB14 diode configuration (symbol).

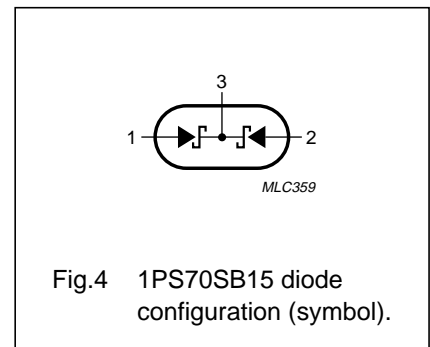


Fig.4 1PS70SB15 diode configuration (symbol).

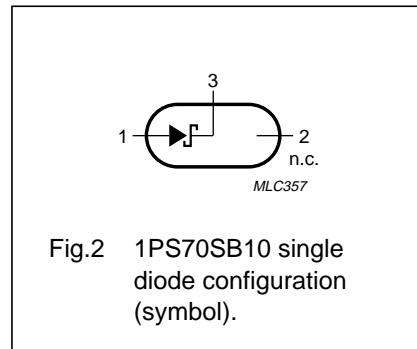


Fig.2 1PS70SB10 single diode configuration (symbol).

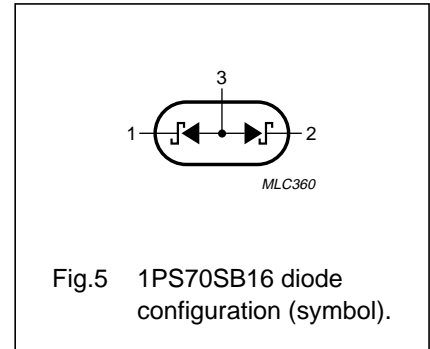


Fig.5 1PS70SB16 diode configuration (symbol).

## Schottky barrier (double) diodes

1PS70SB10; 1PS70SB14;  
1PS70SB15; 1PS70SB16**LIMITING VALUES**

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per diode</b>					
$V_R$	continuous reverse voltage		–	30	V
$I_F$	continuous forward current		–	200	mA
$I_{FRM}$	repetitive peak forward current	$t_p \leq 1$ s; $\delta \leq 0.5$	–	300	mA
$I_{FSM}$	non-repetitive peak forward current	$t_p < 10$ ms	–	600	mA
$P_{tot}$	total power dissipation (per package)	$T_{amb} < 25$ °C	–	200	mW
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	125	°C
$T_{amb}$	operating ambient temperature		–65	+125	°C

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
<b>Per diode</b>				
$V_F$	continuous forward voltage	see Fig.6 $I_F = 0.1$ mA $I_F = 1$ mA $I_F = 10$ mA $I_F = 30$ mA $I_F = 100$ mA	240 320 400 500 800	mV mV mV mV mV
$I_R$	continuous reverse current	$V_R = 25$ V; note 1; see Fig.7	2	$\mu$ A
$C_d$	diode capacitance	$V_R = 1$ V; $f = 1$ MHz; see Fig.8	10	pF

**Note**1. Pulse test:  $t_p = 300$   $\mu$ s;  $\delta = 0.02$ .**THERMAL CHARACTERISTICS**

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

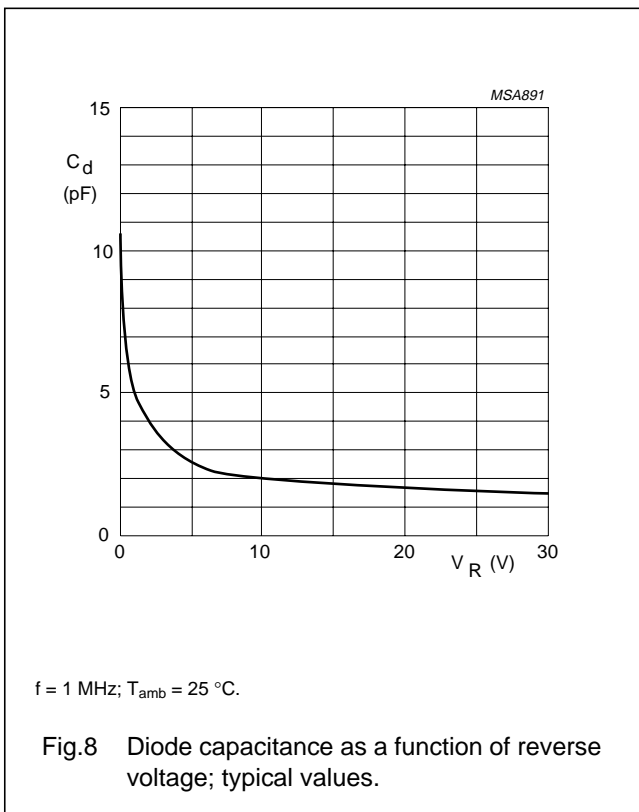
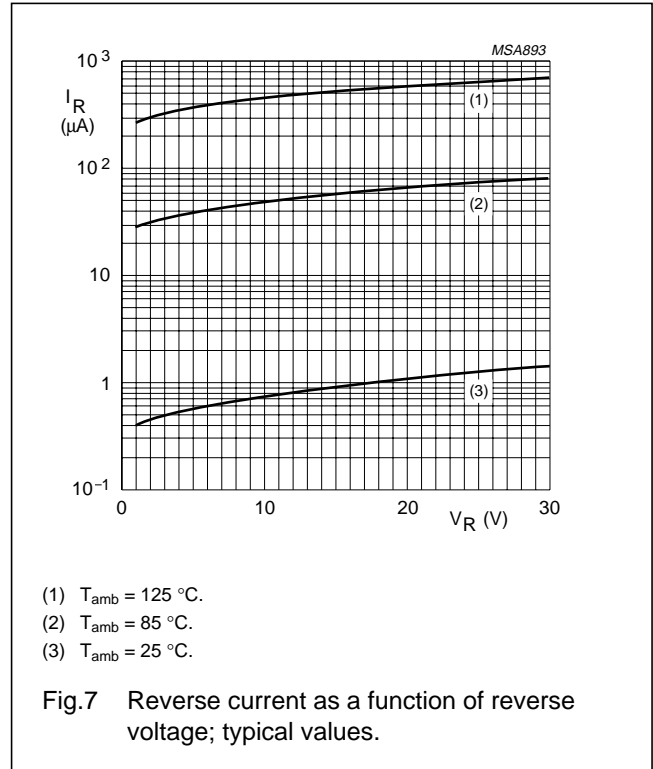
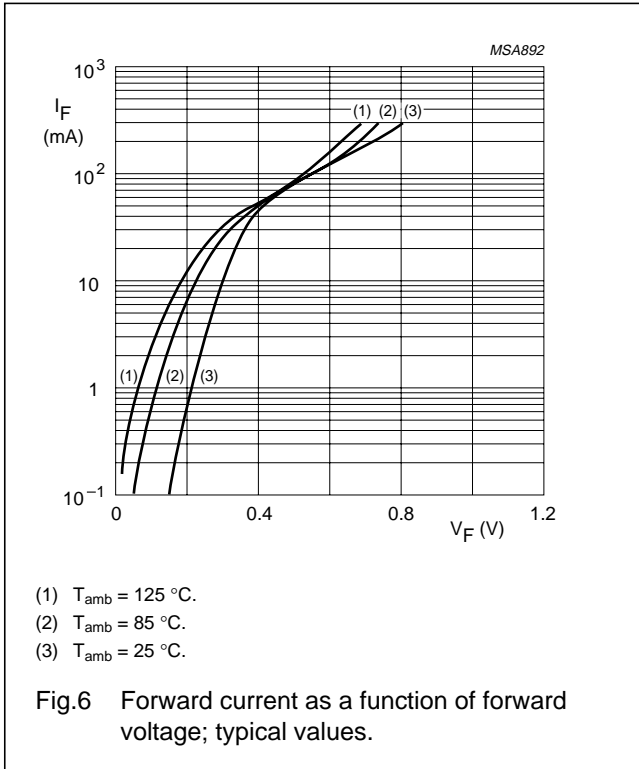
**Note**

1. Refer to SOT323 (SC70) standard mounting conditions.

Schottky barrier (double) diodes

1PS70SB10; 1PS70SB14;  
1PS70SB15; 1PS70SB16

GRAPHICAL DATA



Schottky barrier (double) diodes

1PS70SB10; 1PS70SB14;  
1PS70SB15; 1PS70SB16

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

1PS70SB10; 1PS70SB14;  
1PS70SB15; 1PS70SB16**DEFINITIONS**

<b>Data Sheet Status</b>	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
<b>Limiting values</b>	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). 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.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	

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These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

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Schottky barrier (double) diodes

1PS70SB10; 1PS70SB14;  
1PS70SB15; 1PS70SB16

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**NOTES**

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