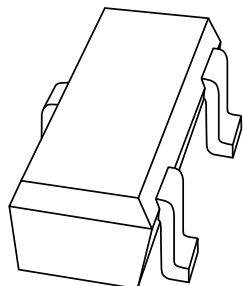


# DATA SHEET



## **1PS59SB10 series** **Schottky barrier (double) diodes**

Product specification  
File under Discrete Semiconductors, SC01

1996 Sep 20

# Schottky barrier (double) diodes

# 1PS59SB10 series

### FEATURES

- Low forward voltage
- Guard ring protected
- Small SMD package.

### APPLICATIONS

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

### DESCRIPTION

Planar Schottky barrier diodes encapsulated in a SC59 small plastic SMD package. Single diodes and double diodes with different pinning are available.

### MARKING

TYPE NUMBER	MARKING CODE
1PS59SB10	10
1PS59SB14	14
1PS59SB15	15
1PS59SB16	16

### PINNING

PIN	1PS59SB. .			
	10	14	15	16
1	a	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	k <sub>1</sub> , a <sub>2</sub>	k <sub>1</sub> , k <sub>2</sub>	a <sub>1</sub> , a <sub>2</sub>

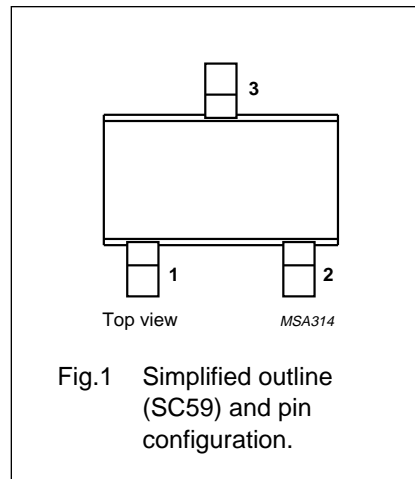


Fig.1 Simplified outline (SC59) and pin configuration.

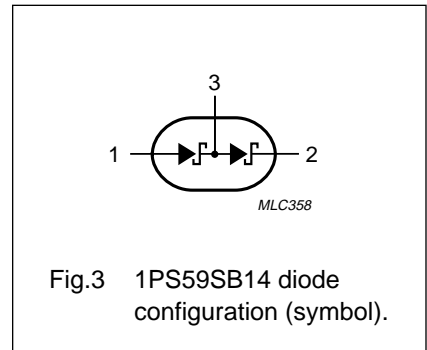


Fig.3 1PS59SB14 diode configuration (symbol).

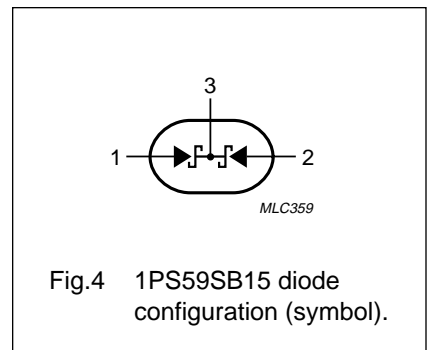


Fig.4 1PS59SB15 diode configuration (symbol).

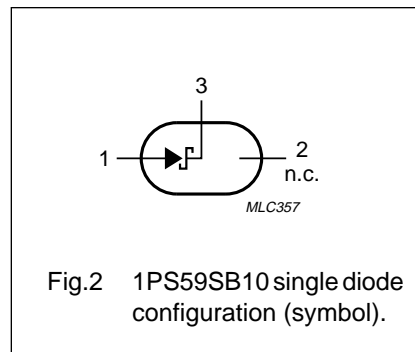


Fig.2 1PS59SB10 single diode configuration (symbol).

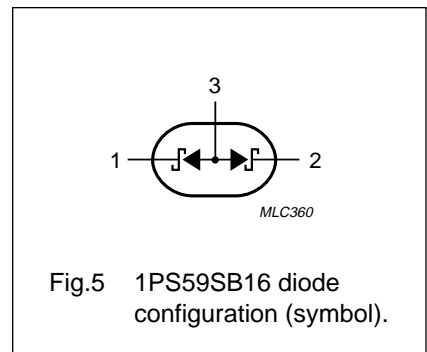


Fig.5 1PS59SB16 diode configuration (symbol).

## Schottky barrier (double) diodes

## 1PS59SB10 series

**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)	$T_{amb} \leq 25$ °C	–	250	mW
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	125	°C

**ELECTRICAL CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
<b>Per diode</b>				
$V_F$	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
$I_R$	reverse current	$V_R = 25$ V; see Fig.7	2	$\mu$ A
$t_{rr}$	reverse recovery time	when switched from $I_F = 10$ mA to $I_R = 10$ mA; $R_L = 100$ $\Omega$ ; measured at $I_R = 1$ mA; see Fig.9	5	ns
$C_d$	diode capacitance	$f = 1$ MHz; $V_R = 1$ V; see Fig.8	10	pF

**THERMAL CHARACTERISTICS**

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

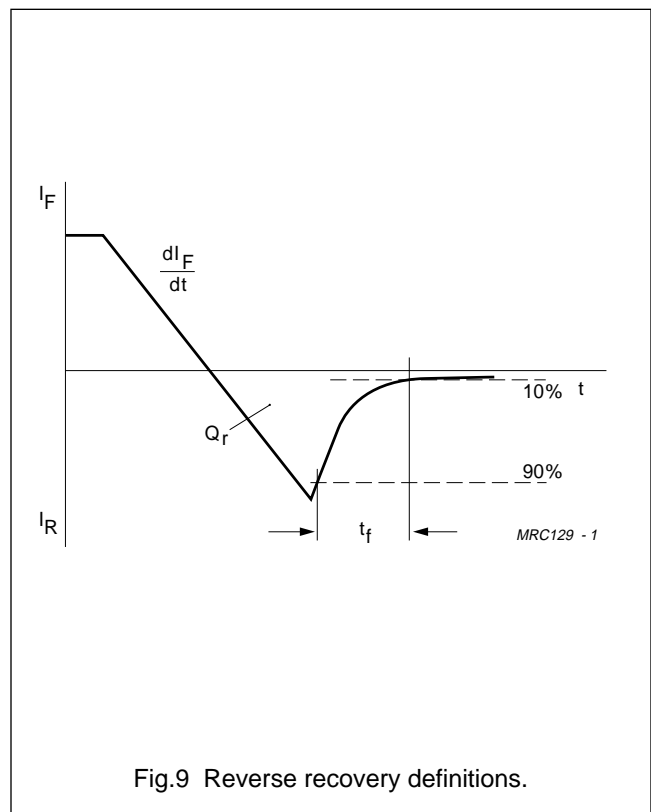
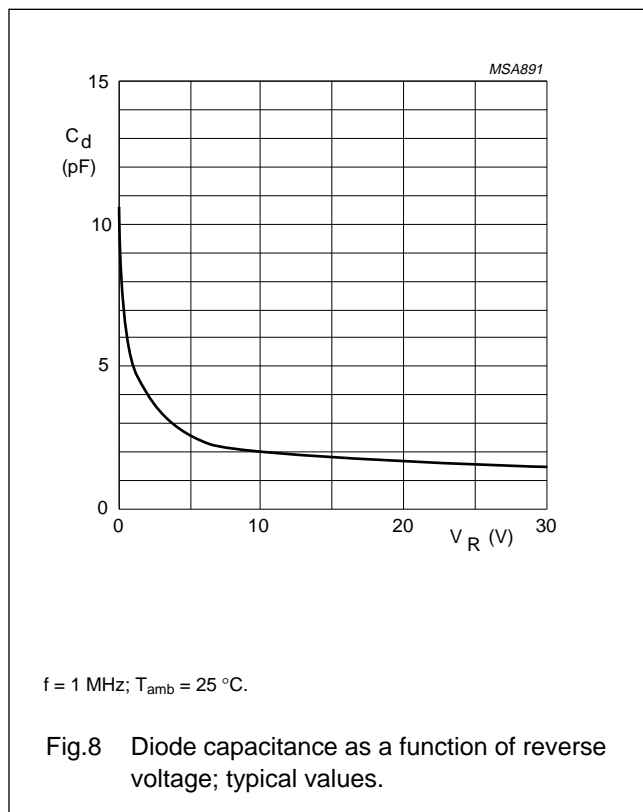
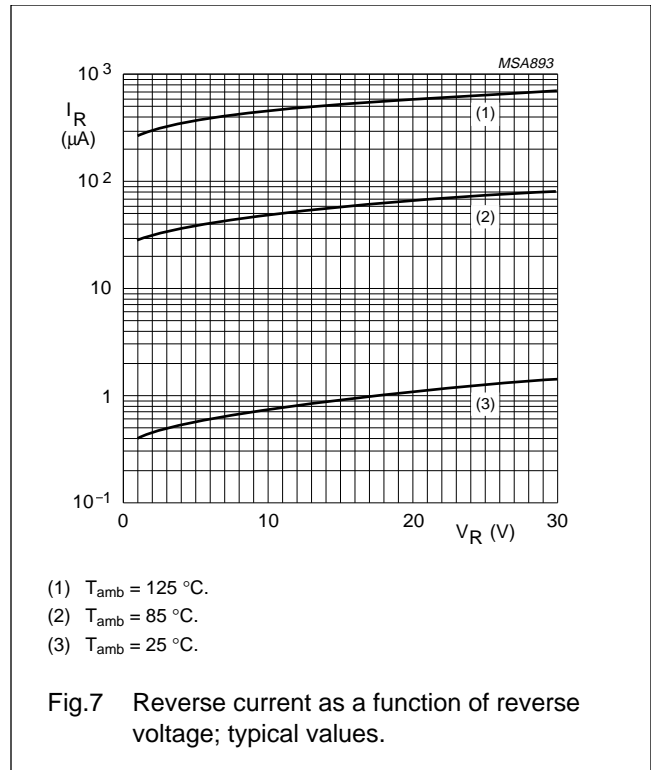
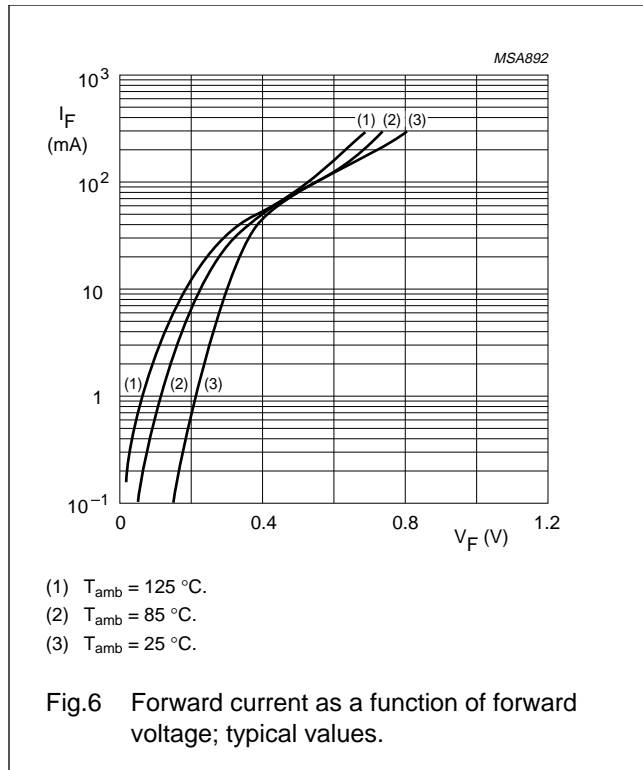
**Note**

1. Refer to SC59 standard mounting conditions.

Schottky barrier (double) diodes

1PS59SB10 series

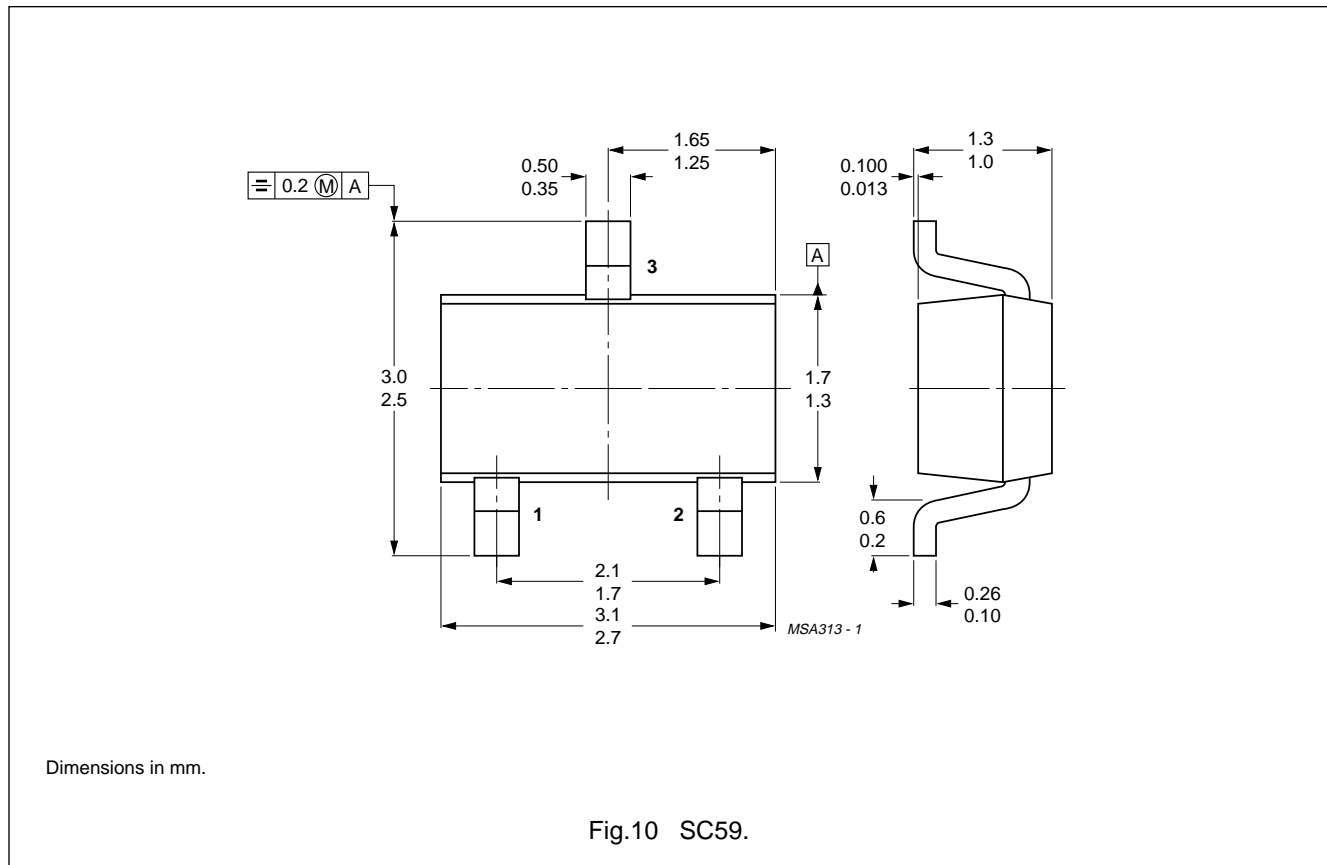
GRAPHICAL DATA



Schottky barrier (double) diodes

1PS59SB10 series

PACKAGE OUTLINE



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.	

LIFE SUPPORT APPLICATIONS

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.