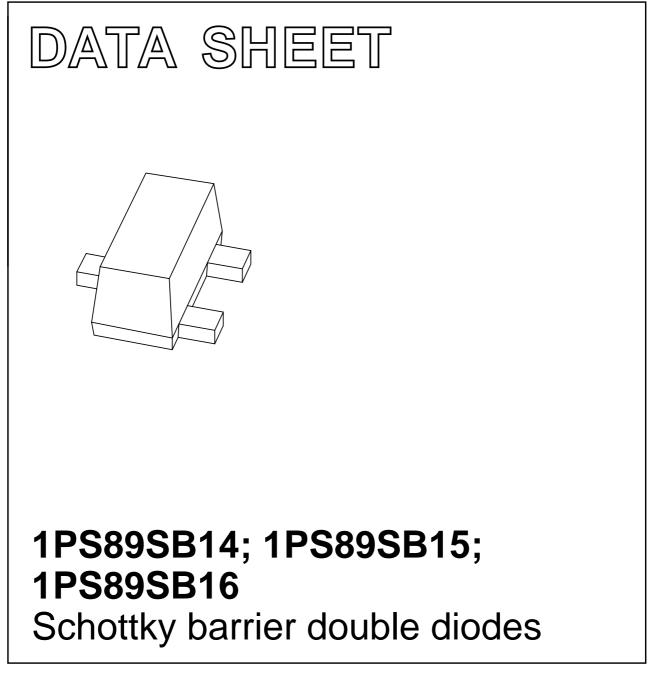
DISCRETE SEMICONDUCTORS



Product specification Supersedes data of 1998 Nov 10 2003 Apr 28



1PS89SB14; 1PS89SB15; 1PS89SB16

FEATURES

PINNING

- Power dissipation comparable to SOT23
- Low forward voltage
- Guard ring protected
- Ultra small SMD package.

APPLICATIONS

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

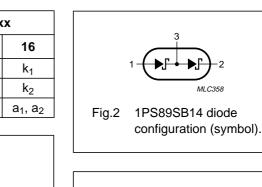
DESCRIPTION

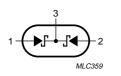
Planar Schottky barrier double diodes encapsulated in an ultra small plastic SMD SC-89 (SOT490) package.

MARKING

TYPE NUMBER	MARKING CODE
1PS89SB14	44
1PS89SB15	43
1PS89SB16	45

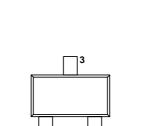
1PS89SBxx PIN 16 14 15 1 k_1 a_1 a₁ 2 k_2 a_2 k₂ 3 k_{1}, a_{2} k_1, k_2 a₁, a₂





- Fig.3 1PS89SB15 diode configuration (symbol).

Fig.4 1PS89SB16 diode configuration (symbol).



MBK837

Fig.1 Simplified outline (SC-89; SOT490) and pin configuration.

Top view

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LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT	
Per diode	Per diode unless otherwise specified					
V _R	continuous reverse voltage – 30				V	
I _F	continuous forward current		-	200	mA	
I _{FRM}	repetitive peak forward current	$t_p \le 1 \text{ s}; \delta \le 0.5$	-	300	mA	
I _{FSM}	non-repetitive peak forward current	t _p < 10 ms	-	600	mA	
P _{tot}	total power dissipation (per package)	$T_{amb} \le 25 \ ^{\circ}C$	-	200	mW	
T _{stg}	storage temperature		-65	+150	°C	
Tj	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
Per diode unless otherwise specified				
V _F	forward voltage	see Fig.5		
		I _F = 0.1 mA	240	mV
		I _F = 1 mA	320	mV
		I _F = 10 mA	400	mV
		I _F = 30 mA	500	mV
		I _F = 100 mA	800	mV
I _R	reverse current	$V_R = 25 V$; note 1; see Fig.6	2	μA
C _d	diode capacitance	$f = 1 \text{ MHz}; V_R = 1 \text{ V}; \text{ see Fig.7}$	10	pF

Note

1. Pulse test: $t_p \le 300 \ \mu s$; $\delta \le 0.02$.

THERMAL CHARACTERISTICS

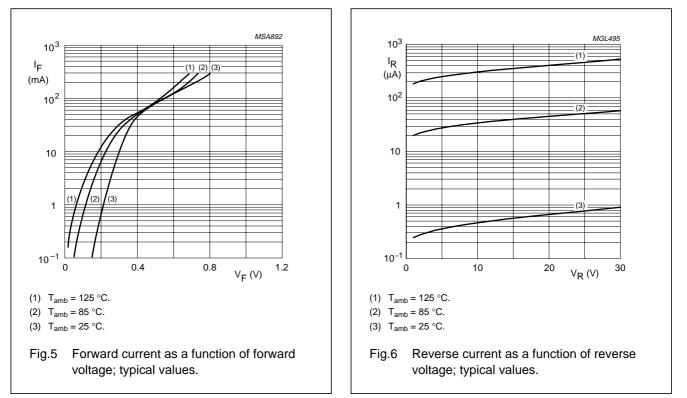
SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-a}	thermal resistance from junction to ambient	note 1	500	K/W

Note

1. Refer to SC-89 (SOT490) standard mounting conditions.

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GRAPHICAL DATA



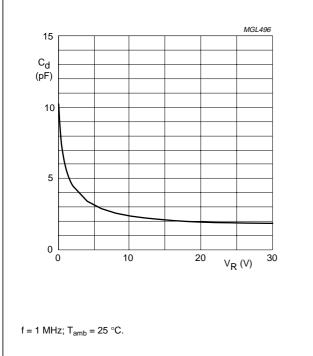
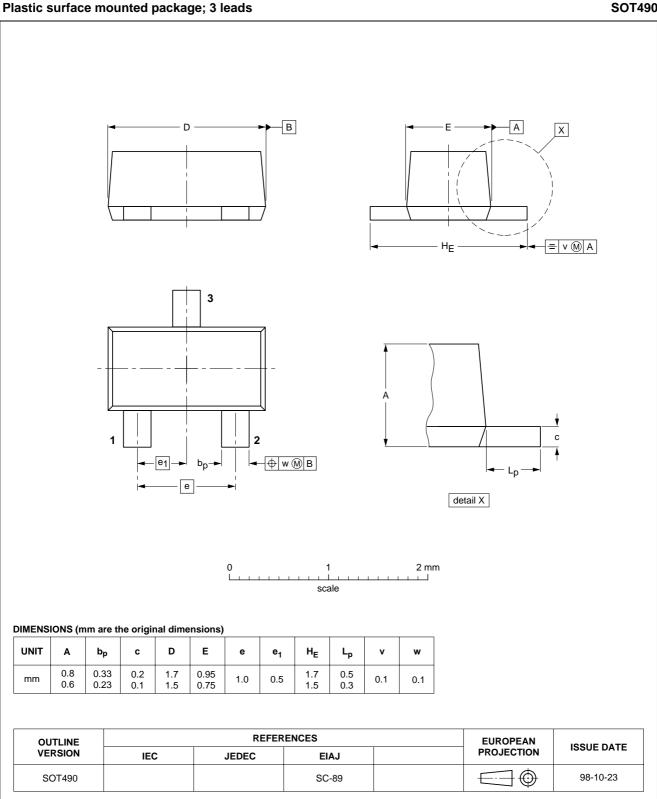


Fig.7 Diode capacitance as a function of reverse voltage; typical values.

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PACKAGE OUTLINE



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DATA SHEET STATUS

LEVEL	DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾⁽³⁾	DEFINITION
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
11	Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
	Product data	Production	This data sheet contains data from the product specification. Philips Semiconductors reserves the right to make changes at any time in order to improve the design, manufacturing and supply. Relevant changes will be communicated via a Customer Product/Process Change Notification (CPCN).

Notes

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- 2. The product status of the device(s) described in this data sheet may have changed since this data sheet was published. The latest information is available on the Internet at URL http://www.semiconductors.philips.com.
- 3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

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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NOTES

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