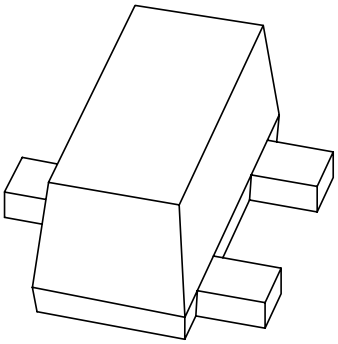
DATA SHEET



1PS89SB74
Schottky barrier double diode

Product specification

2001 Apr 20

Philips
Semiconductors

PHILIPS

Schottky barrier double diode 1PS89SB74

FEATURES

- Low forward voltage
- High breakdown voltage
- Guard ring protected
- Ultra small plastic SMD package
- Low capacitance.

APPLICATIONS

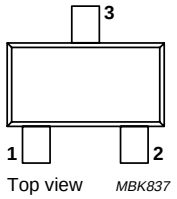
- Ultra high-speed switching
- Voltage clamping
- Protection circuits
- Blocking diodes.

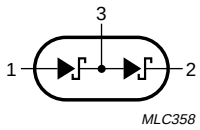
DESCRIPTION

Planar Schottky barrier diode encapsulated in a SOT490 (SC-89) ultra small plastic SMD package.

PINNING

PIN	DESCRIPTION
1	anode (a_1)
2	cathode (k_2)
3	common (k_1, a_2)





Marking code: S7.

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

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
Per diode unless otherwise specified					
V_R	continuous reverse voltage		–	70	V
I_F	continuous forward current		–	70	mA
I_{FRM}	repetitive peak forward current	$t_p \leq 1$ s; $\delta \leq 0.5$	–	70	mA
I_{FSM}	non-repetitive peak forward current	$t_p < 10$ ms	–	100	mA
P_{tot}	total power dissipation (per package)	$T_{amb} \leq 25$ °C	–	200	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	+150	°C
T_{amb}	operating ambient temperature		–65	+150	°C

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
Per diode				
V_F	continuous forward voltage	see Fig.2;		
		I_F = 1 mA	410	mV
		I_F = 10 mA	750	mV
		I_F = 15 mA	1	V
I_R	continuous reverse current	V_R = 50 V; see Fig.3; note 1	100	nA
		V_R = 70 V; see Fig.3; note 1	10	µA
C_d	diode capacitance	V_R = 0; f = 1 MHz; see Fig.4	2	pF

Note

1. Pulse test: $t_p \leq 300$ µs; $\delta \leq 0.02$.

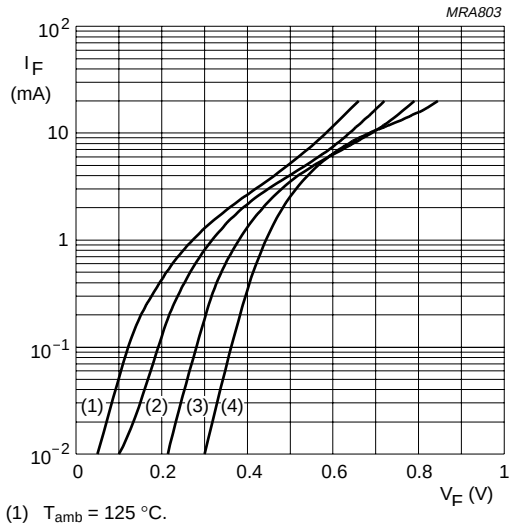
THERMAL CHARACTERISTICS

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

Note

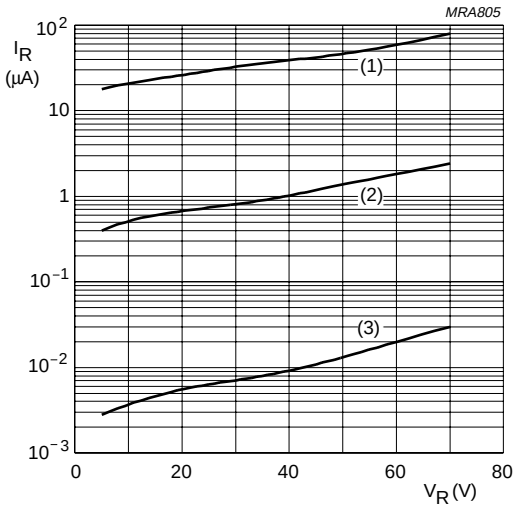
1. Refer to SOT490 (SC-89) standard mounting conditions.

GRAPHICAL DATA



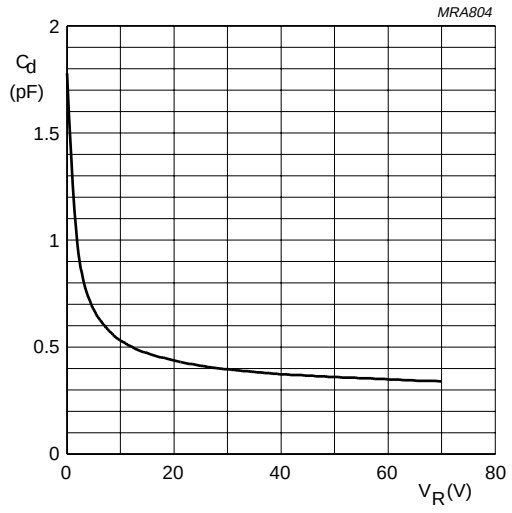
(1) T_{amb} = 125 °C.
(2) T_{amb} = 85 °C.
(3) T_{amb} = 25 °C.
(4) T_{amb} = –40 °C.

Fig.2 Forward current as a function of forward voltage; typical values.



(1) T_{amb} = 125 °C.
(2) T_{amb} = 85 °C.
(3) T_{amb} = 25 °C.

Fig.3 Reverse current as a function of reverse voltage; typical values.

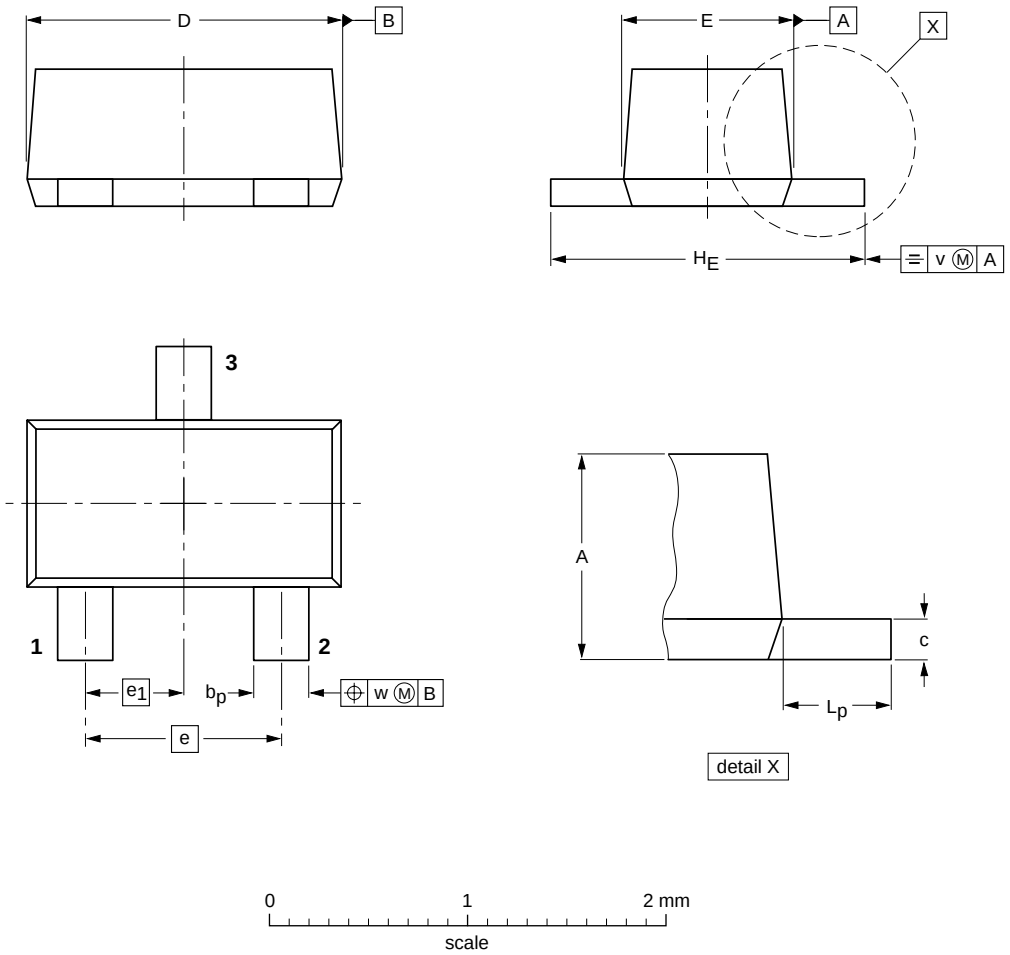


f = 1 MHz; T_{amb} = 25 °C.

Fig.4 Diode capacitance as a function of reverse voltage; typical values.

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT490**



DIMENSIONS (mm are the original dimensions)

UNIT	A	b_p	c	D	E	e	e_1	H_E	L_p	v	w
mm	0.8 0.6	0.33 0.23	0.2 0.1	1.7 1.5	0.95 0.75	1.0	0.5	1.7 1.5	0.5 0.3	0.1	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT490			SC-89			98-10-23

DATA SHEET STATUS

DATA SHEET STATUS[1]	PRODUCT STATUS[2]	DEFINITIONS
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.
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.
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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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