

DATA SHEET



PRLL5817; PRLL5818; PRLL5819 Schottky barrier diodes

Product data sheet
Supersedes data of 1996 May 03

1999 Apr 22

Schottky barrier diodes

**PRLL5817; PRLL5818;
PRLL5819**

FEATURES

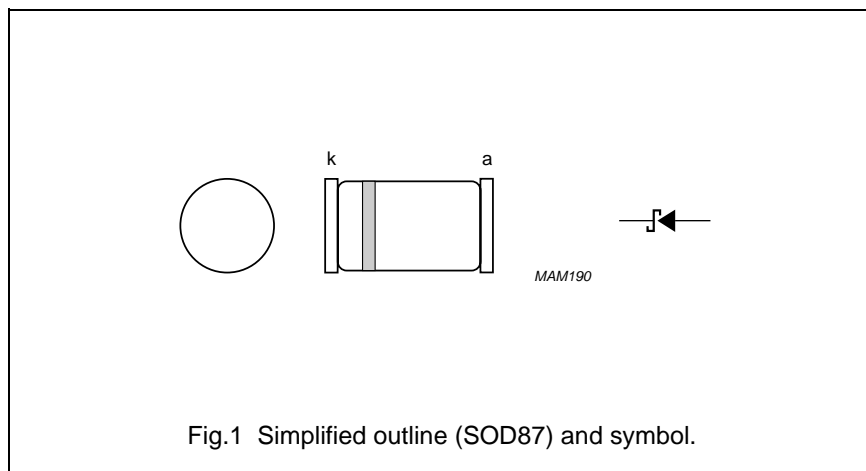
- Low switching losses
- Fast recovery time
- Guard ring protected
- Hermetically sealed glass SMD package.

APPLICATIONS

- Low power, switched-mode power supplies
- Rectifying
- Polarity protection.

DESCRIPTION

The PRLL5817 to PRLL5819 types are Schottky barrier diodes fabricated in planar technology, and encapsulated in SOD87 hermetically sealed glass SMD packages incorporating ImplotecTM(1) technology.



MARKING

TYPE NUMBER	MARKING CODE
PRLL5817	9
PRLL5818	9
PRLL5819	9

(1) Implotec is a trademark of Philips.

Schottky barrier diodes

PRLL5817; PRLL5818;
PRLL5819**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_R	continuous reverse voltage				
	PRLL5817		—	20	V
	PRLL5818		—	30	V
	PRLL5819		—	40	V
V_{RSM}	non-repetitive peak reverse voltage				
	PRLL5817		—	24	V
	PRLL5818		—	36	V
	PRLL5819		—	48	V
V_{RRM}	repetitive peak reverse voltage				
	PRLL5817		—	20	V
	PRLL5818		—	30	V
	PRLL5819		—	40	V
V_{RWM}	crest working reverse voltage				
	PRLL5817		—	20	V
	PRLL5818		—	30	V
	PRLL5819		—	40	V
$I_{F(AV)}$	average forward current	$T_{amb} = 60\text{ °C}$	—	1	A
I_{FSM}	non-repetitive peak forward current	$t = 10\text{ ms}$ half sine wave; $T_j = T_{j\text{ max}}$ prior to surge: $V_R = 0$	—	25	A
T_{stg}	storage temperature		−65	+175	°C
T_j	junction temperature		—	125	°C

Schottky barrier diodes

PRLL5817; PRLL5818;
PRLL5819**ELECTRICAL CHARACTERISTICS**T_{amb} = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V _F	forward voltage PRLL5817	see Fig.2 I _F = 0.1 A	–	–	320	mV
		I _F = 1 A	–	–	450	mV
		I _F = 3 A	–	–	750	mV
V _F	forward voltage PRLL5818	see Fig.2 I _F = 0.1 A	–	–	330	mV
		I _F = 1 A	–	–	550	mV
		I _F = 3 A	–	–	875	mV
V _F	forward voltage PRLL5819	see Fig.2 I _F = 0.1 A	–	–	340	mV
		I _F = 1 A	–	–	600	mV
		I _F = 3 A	–	–	900	mV
I _R	reverse current	V _R = V _{RRMmax} ; note 1	–	0.5	1	mA
		V _R = V _{RRMmax} ; T _j = 100 °C	–	5	10	mA
C _d	diode capacitance PRLL5817 PRLL5818 PRLL5819	V _R = 4 V; f = 1 MHz	–	70	–	pF
			–	50	–	pF
			–	50	–	pF

Note1. Pulse test: t_p = 300 μs; δ = 0.02.**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-a}	thermal resistance from junction to ambient	note 1	150	K/W

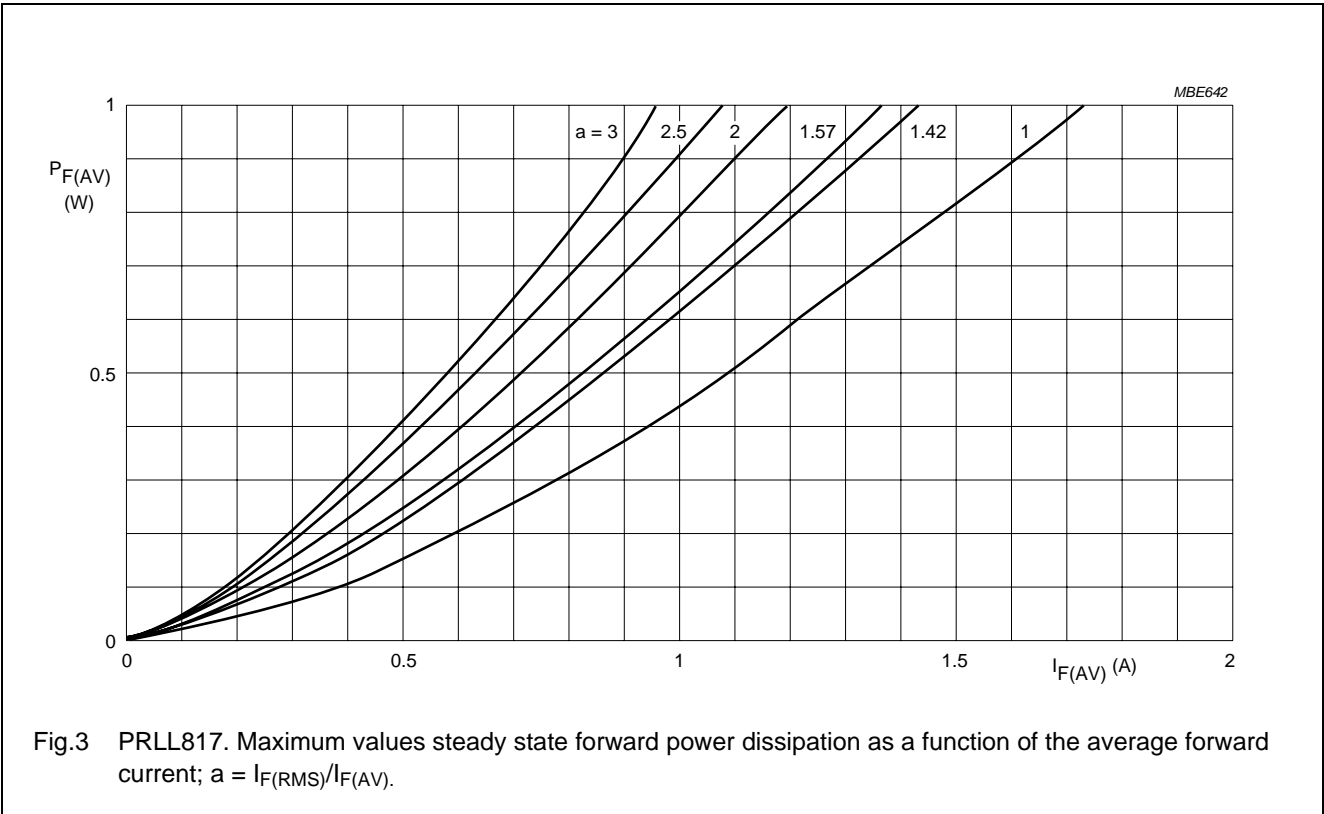
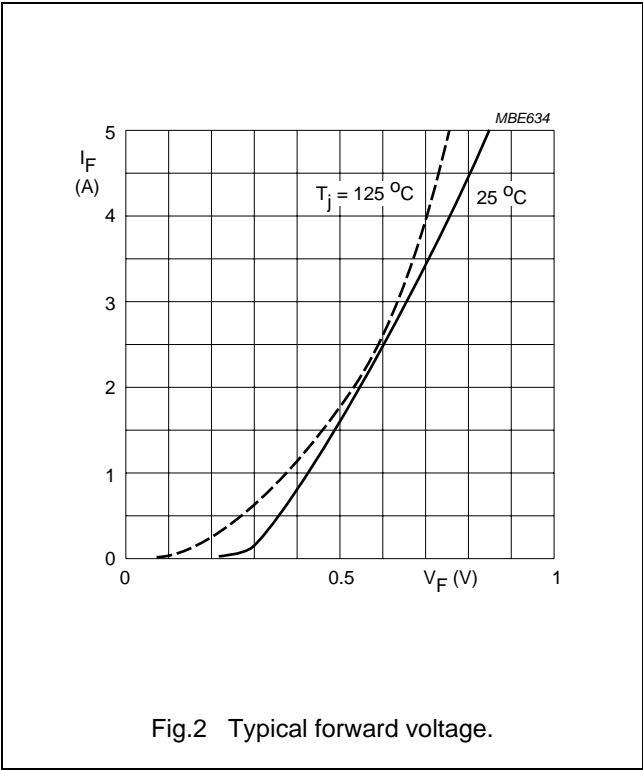
Note

1. Refer to SOD87 standard mounting conditions.

Schottky barrier diodes

PRLL5817; PRLL5818;
PRLL5819

GRAPHICAL DATA



Schottky barrier diodes

PRLL5817; PRLL5818;
PRLL5819

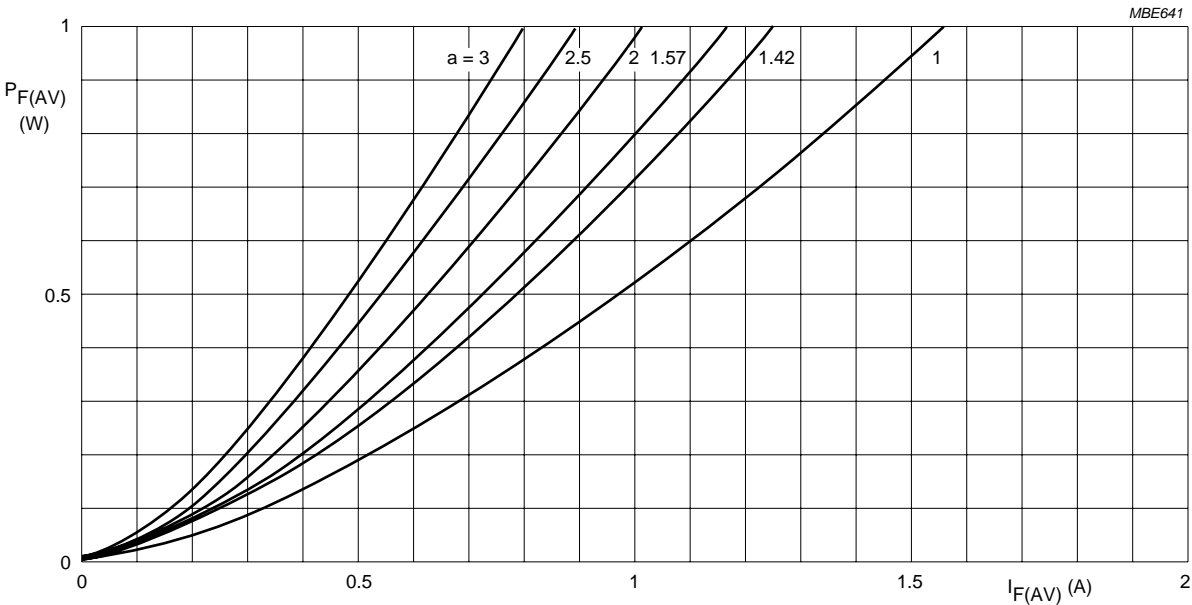


Fig.4 PRLL5818. Maximum values steady state forward power dissipation as a function of the average forward current; $a = I_{F(RMS)}/I_{F(AV)}$.

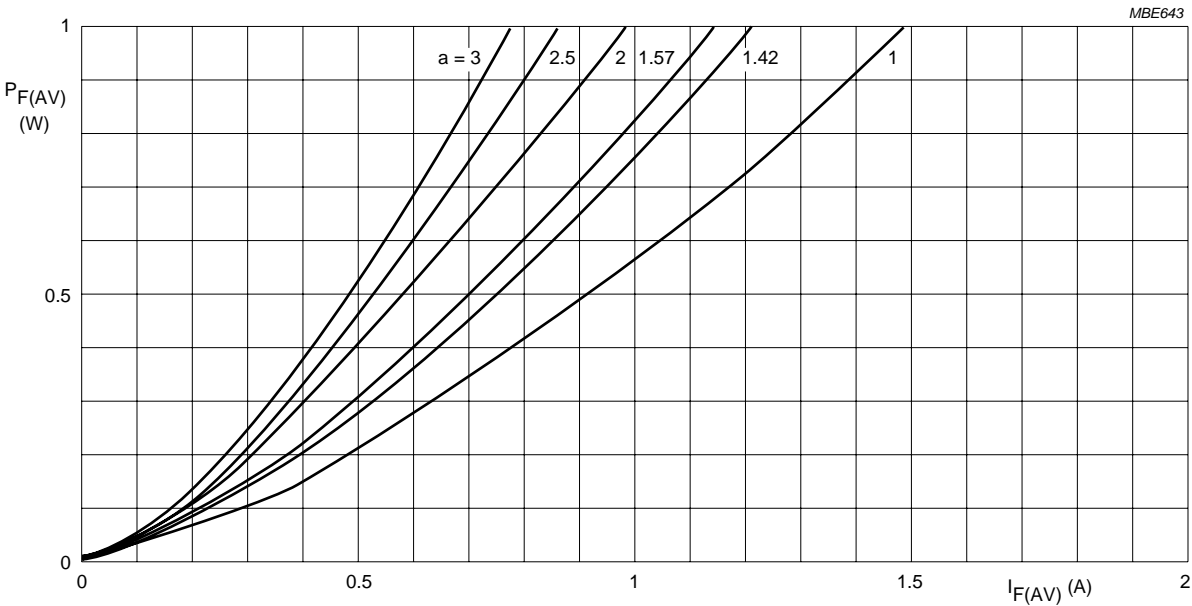
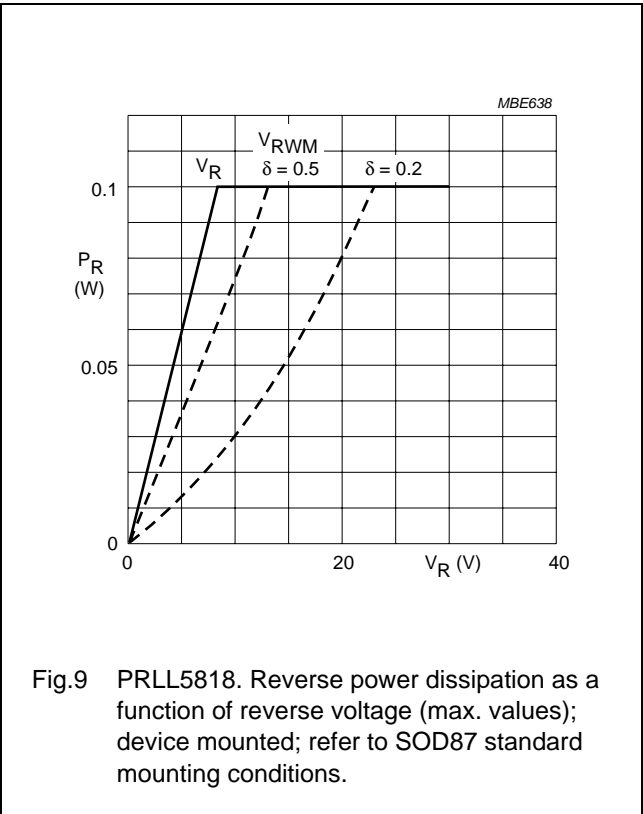
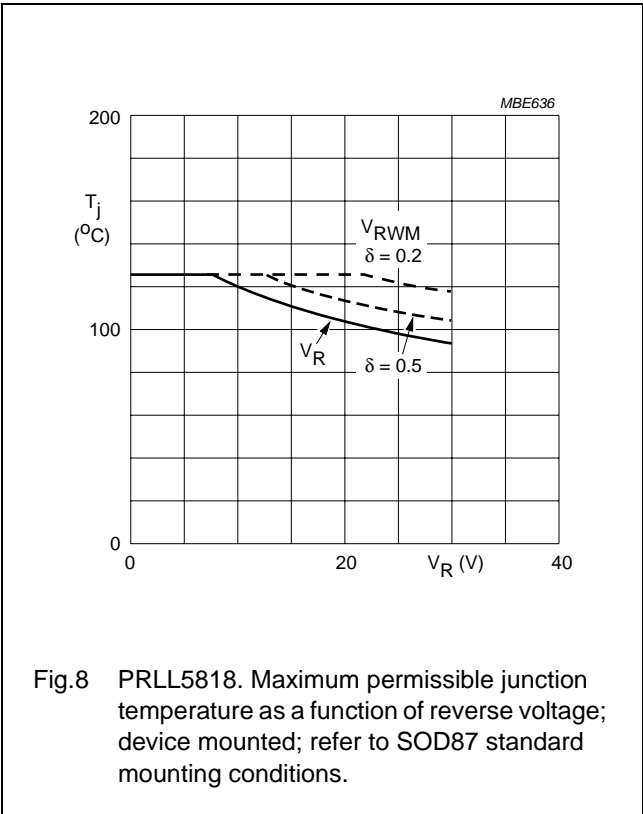
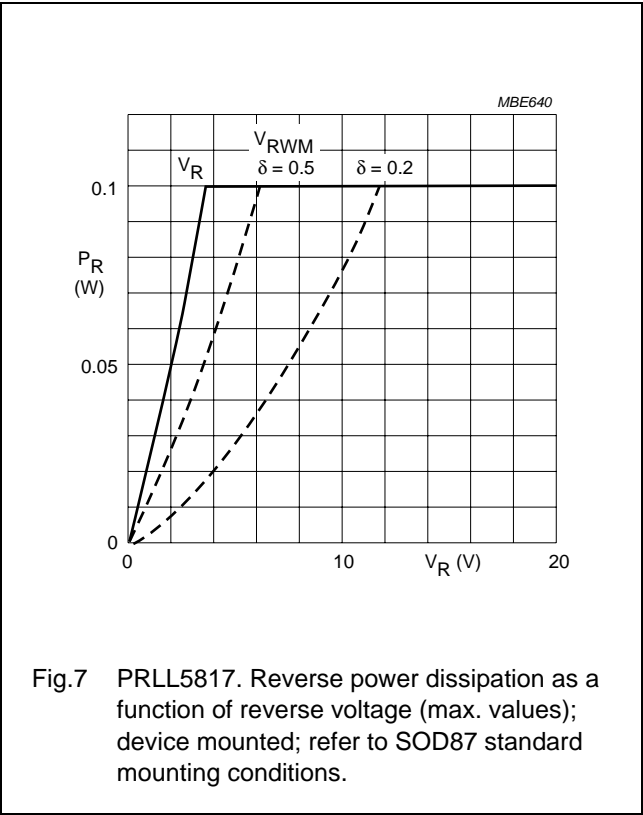
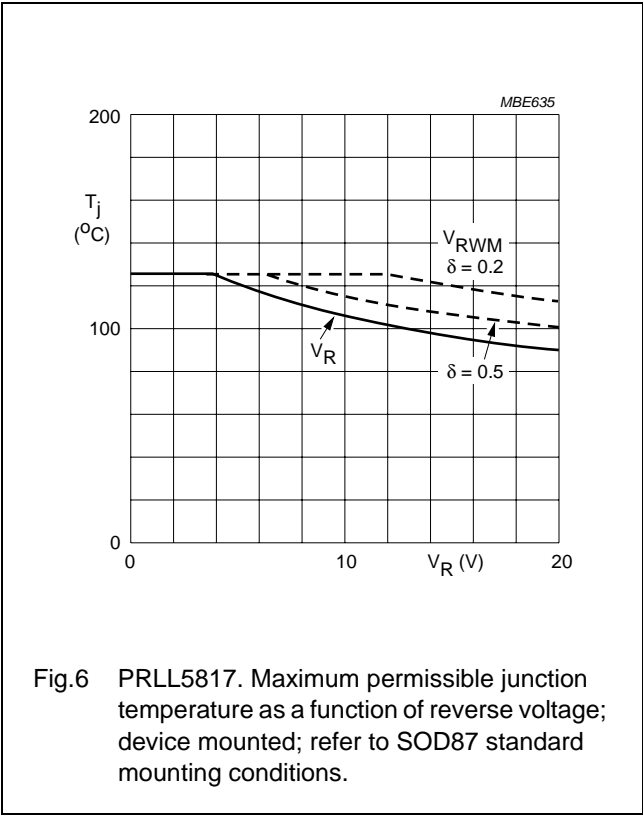


Fig.5 PRLL5819. Maximum values steady state forward power dissipation as a function of the average forward current; $a = I_{F(RMS)}/I_{F(AV)}$.

Schottky barrier diodes

PRLL5817; PRLL5818;
PRLL5819



Schottky barrier diodes

PRLL5817; PRLL5818;
PRLL5819

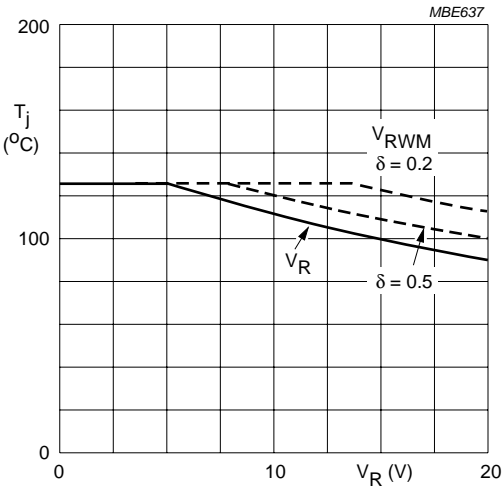


Fig.10 PRLL5819. Maximum permissible junction temperature as a function of reverse voltage; device mounted; refer to SOD87 standard mounting conditions.

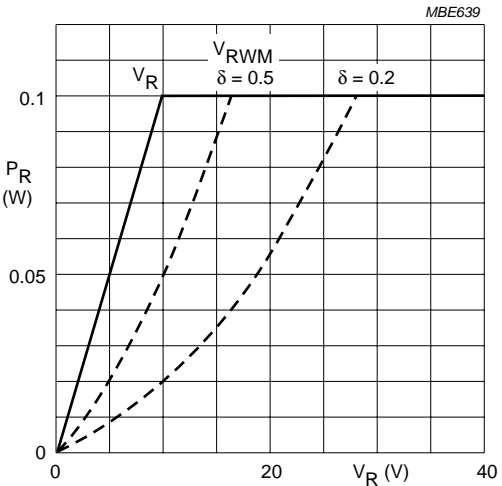


Fig.11 PRLL5819. Reverse power dissipation as a function of reverse voltage (max. values); device mounted; refer to SOD87 standard mounting conditions.

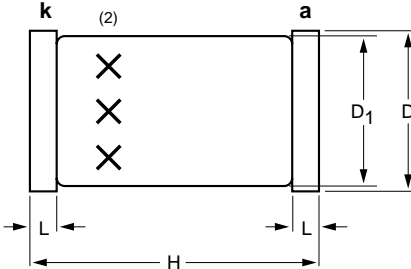
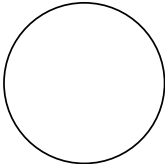
Schottky barrier diodes

PRLL5817; PRLL5818;
PRLL5819

PACKAGE OUTLINE

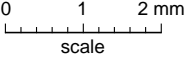
Hermetically sealed glass surface mounted package;
Implotec™(1) technology; 2 connectors

SOD87



DIMENSIONS (mm are the original dimensions)


UNIT	D	D1	H	L
mm	2.1 2.0	2.0 1.8	3.7 3.3	0.3



Notes

1. Implotec is a trademark of Philips.

2. The marking indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOD87	100H03					99-03-31 99-06-04

Schottky barrier diodes

PRL5817; PRL5818;
PRL5819

DATA SHEET STATUS

DOCUMENT STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	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.

Notes

1. Please consult the most recently issued document before initiating or completing a design.
2. The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

DISCLAIMERS

General — Information in this document is believed to be accurate and reliable. However, NXP Semiconductors does not give any representations or warranties, expressed or implied, as to the accuracy or completeness of such information and shall have no liability for the consequences of use of such information.

Right to make changes — NXP Semiconductors reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.

Suitability for use — NXP Semiconductors products are not designed, authorized or warranted to be suitable for use in medical, military, aircraft, space or life support equipment, nor in applications where failure or malfunction of an NXP Semiconductors product can reasonably be expected to result in personal injury, death or severe property or environmental damage. NXP Semiconductors accepts no liability for inclusion and/or use of NXP Semiconductors products in such equipment or applications and therefore such inclusion and/or use is at the customer's own risk.

Applications — Applications that are described herein for any of these products are for illustrative purposes only. NXP Semiconductors makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.

Limiting values — Stress above one or more limiting values (as defined in the Absolute Maximum Ratings System of IEC 60134) may cause permanent damage to the device. Limiting values are stress ratings only and operation of the device at these or any other conditions

above those given in the Characteristics sections of this document is not implied. Exposure to limiting values for extended periods may affect device reliability.

Terms and conditions of sale — NXP Semiconductors products are sold subject to the general terms and conditions of commercial sale, as published at <http://www.nxp.com/profile/terms>, including those pertaining to warranty, intellectual property rights infringement and limitation of liability, unless explicitly otherwise agreed to in writing by NXP Semiconductors. In case of any inconsistency or conflict between information in this document and such terms and conditions, the latter will prevail.

No offer to sell or license — Nothing in this document may be interpreted or construed as an offer to sell products that is open for acceptance or the grant, conveyance or implication of any license under any copyrights, patents or other industrial or intellectual property rights.

Export control — This document as well as the item(s) described herein may be subject to export control regulations. Export might require a prior authorization from national authorities.

Quick reference data — The Quick reference data is an extract of the product data given in the Limiting values and Characteristics sections of this document, and as such is not complete, exhaustive or legally binding.

NXP Semiconductors

Customer notification

This data sheet was changed to reflect the new company name NXP Semiconductors, including new legal definitions and disclaimers. No changes were made to the technical content, except for package outline drawings which were updated to the latest version.

Contact information

For additional information please visit: <http://www.nxp.com>

For sales offices addresses send e-mail to: salesaddresses@nxp.com

© NXP B.V. 2009

All rights are reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner.

The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent- or other industrial or intellectual property rights.

Printed in The Netherlands

115002/00/02/pp11

Date of release: 1999 Apr 22

Document order number: 9397 750 05474

founded by

PHILIPS