

# 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

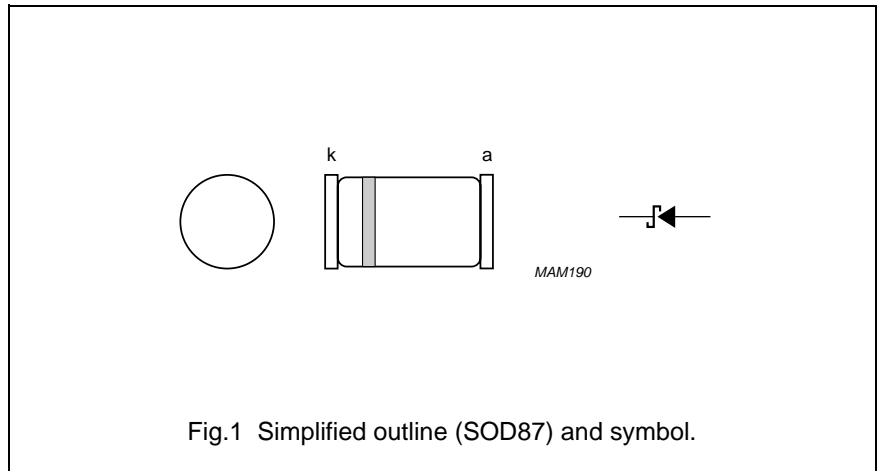
- Low switching losses
- Fast recovery time
- Guard ring protected
- Hermetically sealed glass SMD package.

### 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 Implotec<sup>TM(1)</sup> 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 <sub>R</sub>	continuous reverse voltage				
	PRLL5817		–	20	V
	PRLL5818		–	30	V
	PRLL5819		–	40	V
V <sub>RSM</sub>	non-repetitive peak reverse voltage				
	PRLL5817		–	24	V
	PRLL5818		–	36	V
	PRLL5819		–	48	V
V <sub>RRM</sub>	repetitive peak reverse voltage				
	PRLL5817		–	20	V
	PRLL5818		–	30	V
	PRLL5819		–	40	V
V <sub>RWM</sub>	crest working reverse voltage				
	PRLL5817		–	20	V
	PRLL5818		–	30	V
	PRLL5819		–	40	V
I <sub>F(AV)</sub>	average forward current	T <sub>amb</sub> = 60 °C	–	1	A
I <sub>FSM</sub>	non-repetitive peak forward current	t = 10 ms half sine wave; T <sub>j</sub> = T <sub>j max</sub> prior to surge: V <sub>R</sub> = 0	–	25	A
T <sub>stg</sub>	storage temperature		–65	+175	°C
T <sub>j</sub>	junction temperature		–	125	°C

## Schottky barrier diodes

PRLL5817; PRLL5818;  
PRLL5819**ELECTRICAL CHARACTERISTICS**T<sub>amb</sub> = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V <sub>F</sub>	forward voltage PRLL5817	see Fig.2				
		I <sub>F</sub> = 0.1 A	–	–	320	mV
		I <sub>F</sub> = 1 A	–	–	450	mV
		I <sub>F</sub> = 3 A	–	–	750	mV
V <sub>F</sub>	forward voltage PRLL5818	see Fig.2				
		I <sub>F</sub> = 0.1 A	–	–	330	mV
		I <sub>F</sub> = 1 A	–	–	550	mV
		I <sub>F</sub> = 3 A	–	–	875	mV
V <sub>F</sub>	forward voltage PRLL5819	see Fig.2				
		I <sub>F</sub> = 0.1 A	–	–	340	mV
		I <sub>F</sub> = 1 A	–	–	600	mV
		I <sub>F</sub> = 3 A	–	–	900	mV
I <sub>R</sub>	reverse current	V <sub>R</sub> = V <sub>RRMmax</sub> ; note 1	–	0.5	1	mA
		V <sub>R</sub> = V <sub>RRMmax</sub> ; T <sub>j</sub> = 100 °C	–	5	10	mA
C <sub>d</sub>	diode capacitance PRLL5817 PRLL5818 PRLL5819	V <sub>R</sub> = 4 V; f = 1 MHz				
			–	70	–	pF
			–	50	–	pF
			–	50	–	pF

**Note**1. Pulse test: t<sub>p</sub> = 300 μs; δ = 0.02.**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R <sub>th j-a</sub>	thermal resistance from junction to ambient	note 1	150	K/W

**Note**

1. Refer to SOD87 standard mounting conditions.

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PRLL5817; PRLL5818;  
PRLL5819

GRAPHICAL DATA

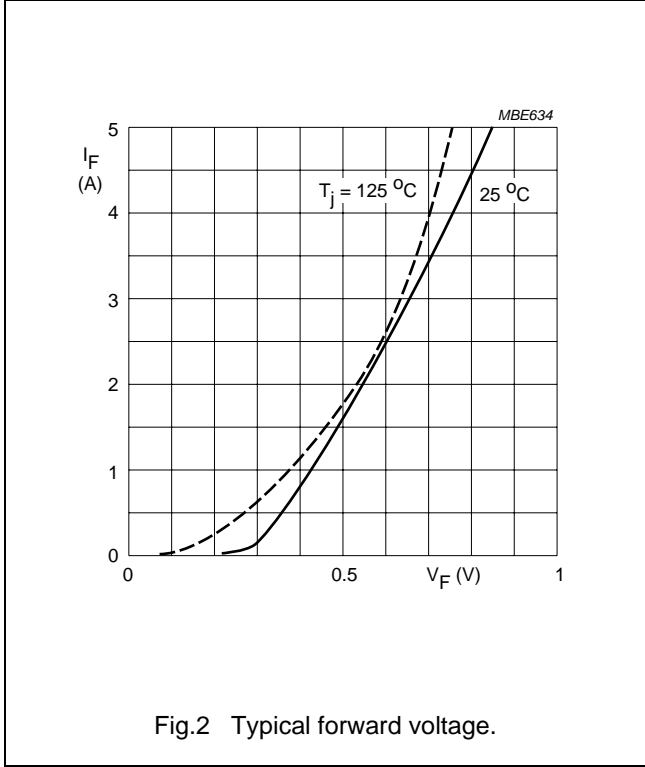


Fig.2 Typical forward voltage.

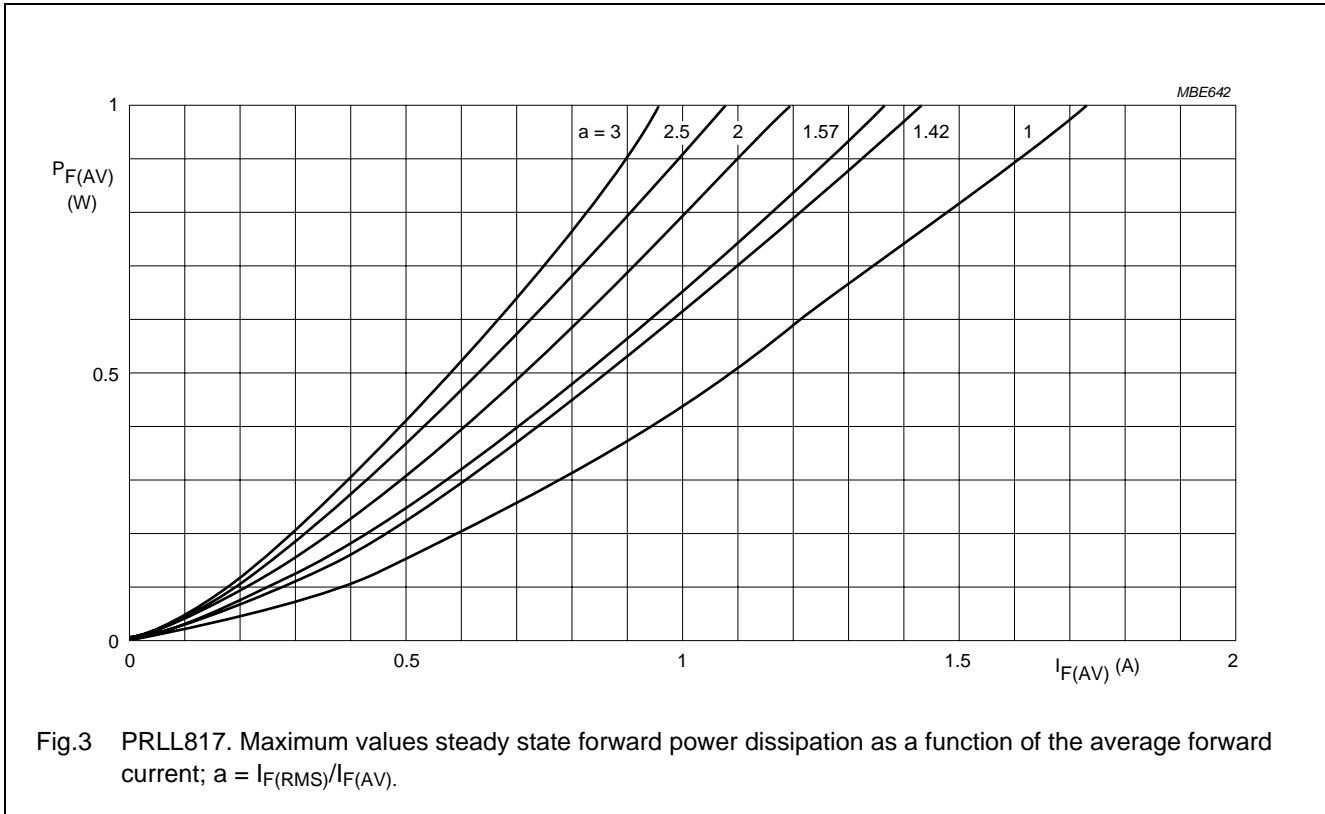
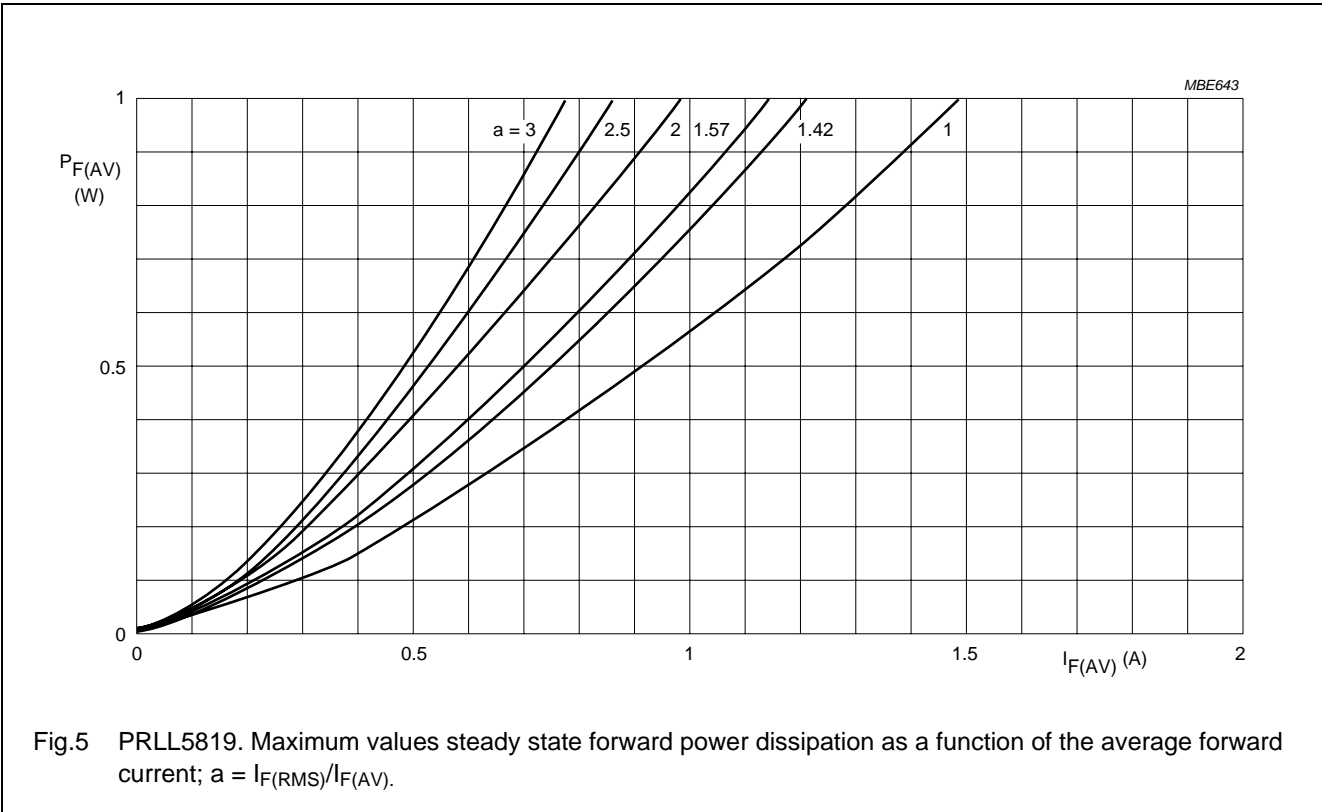
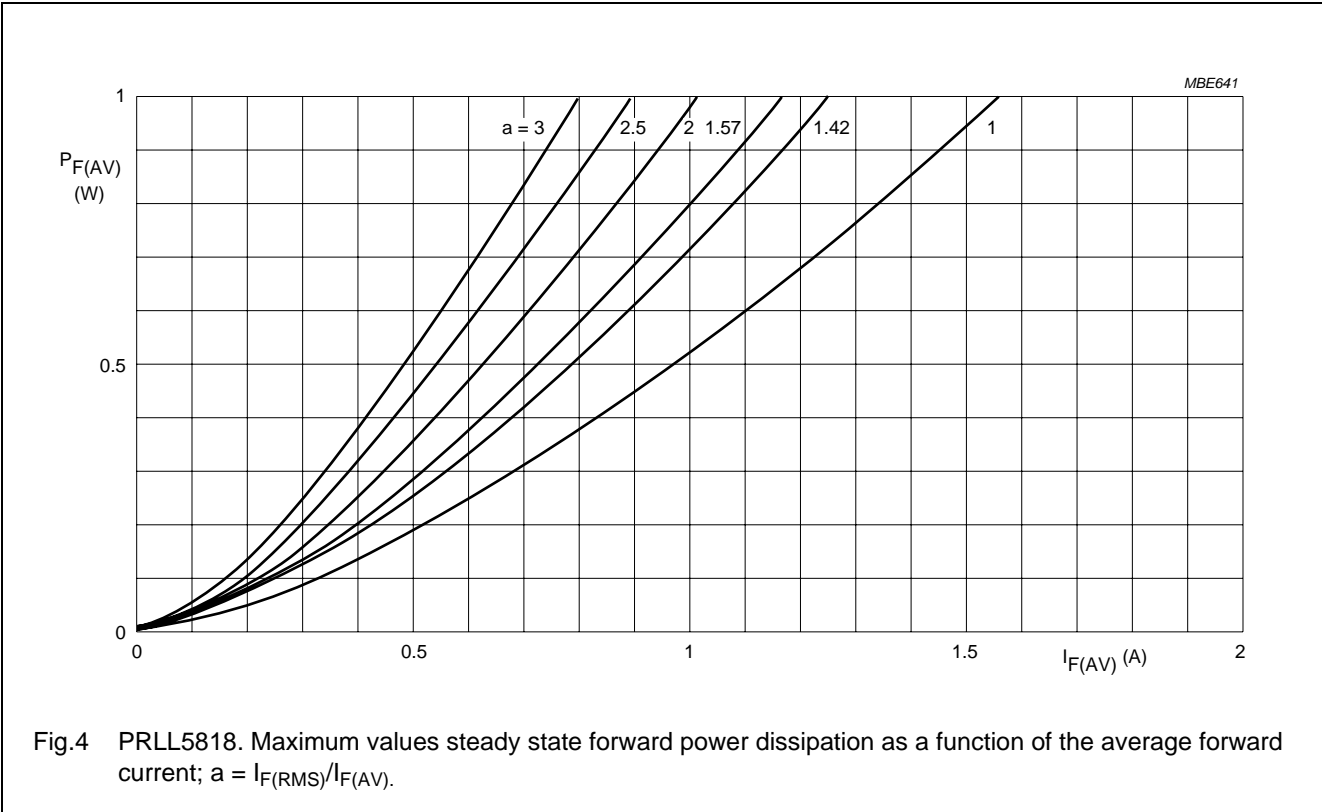


Fig.3 PRLL817. Maximum values steady state forward power dissipation as a function of the average forward current;  $a = I_{F(RMS)}/I_{F(AV)}$ .

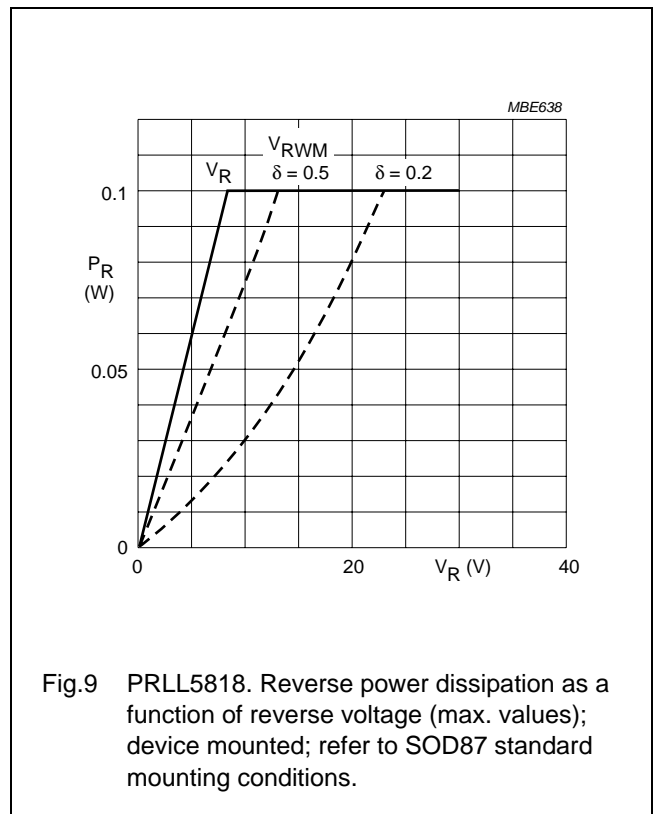
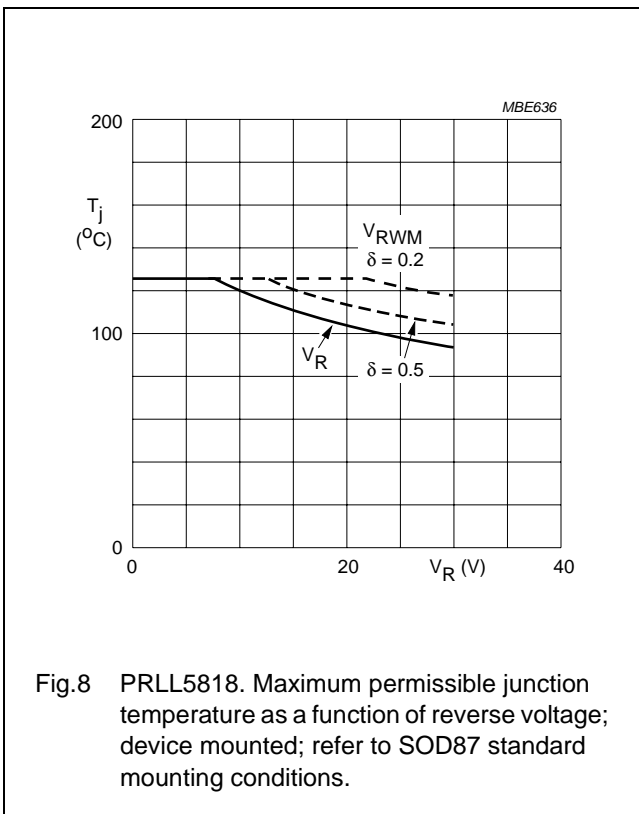
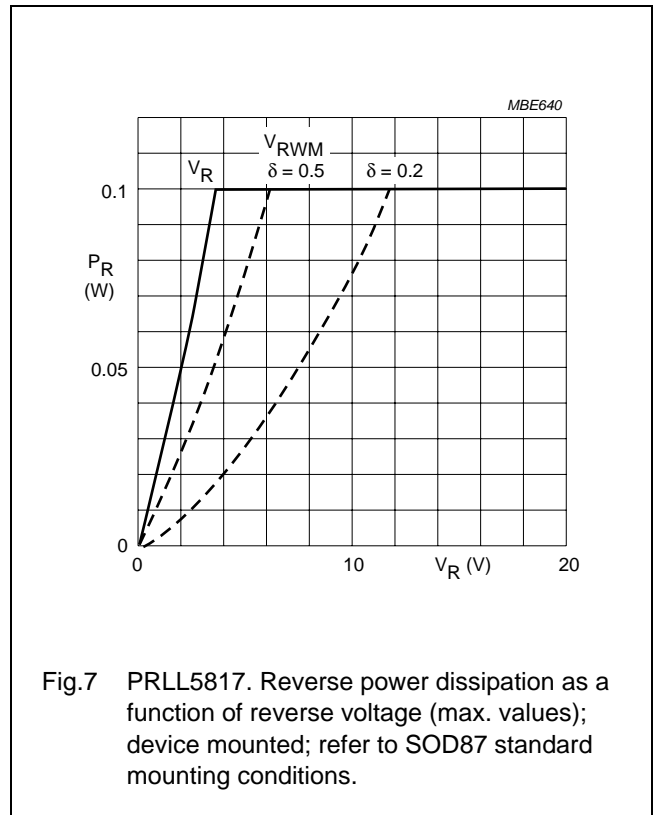
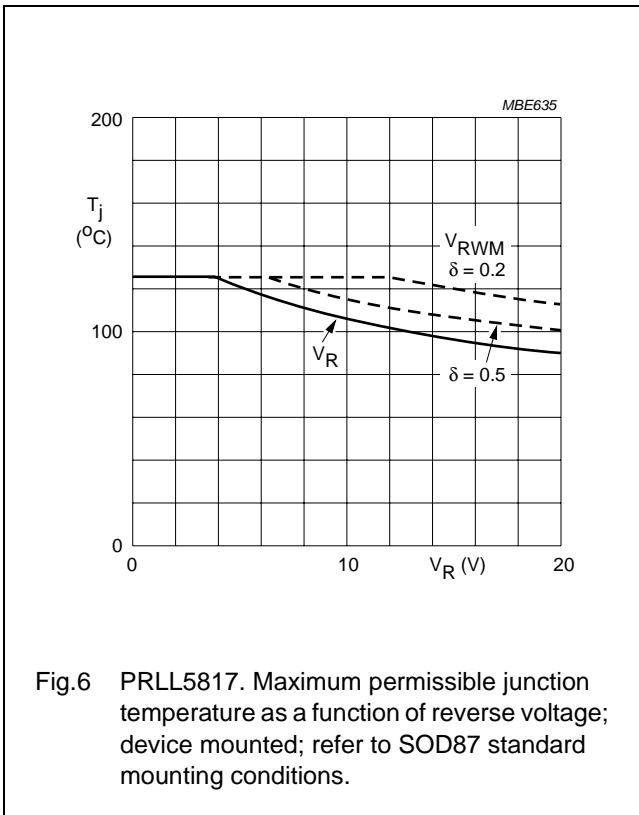
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PRLL5817; PRLL5818;  
PRLL5819



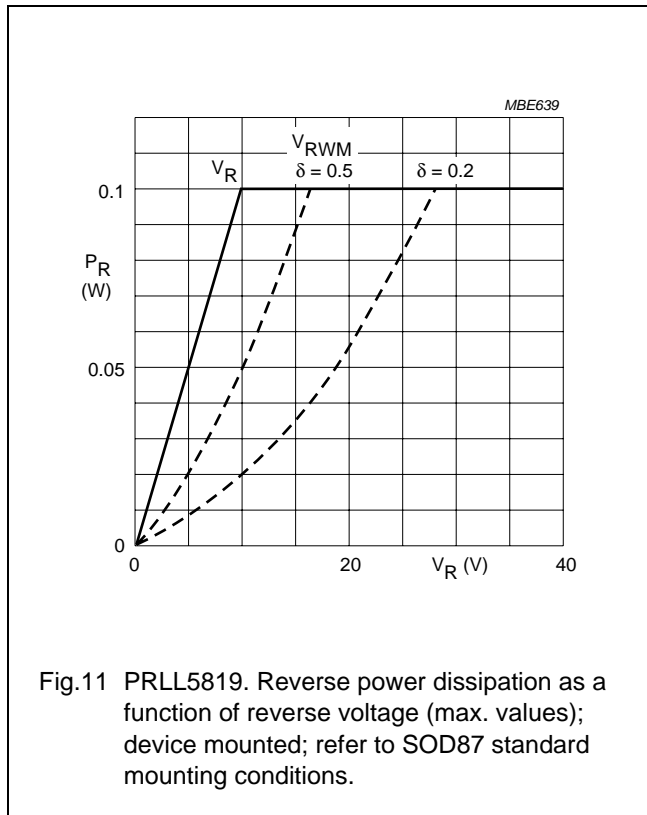
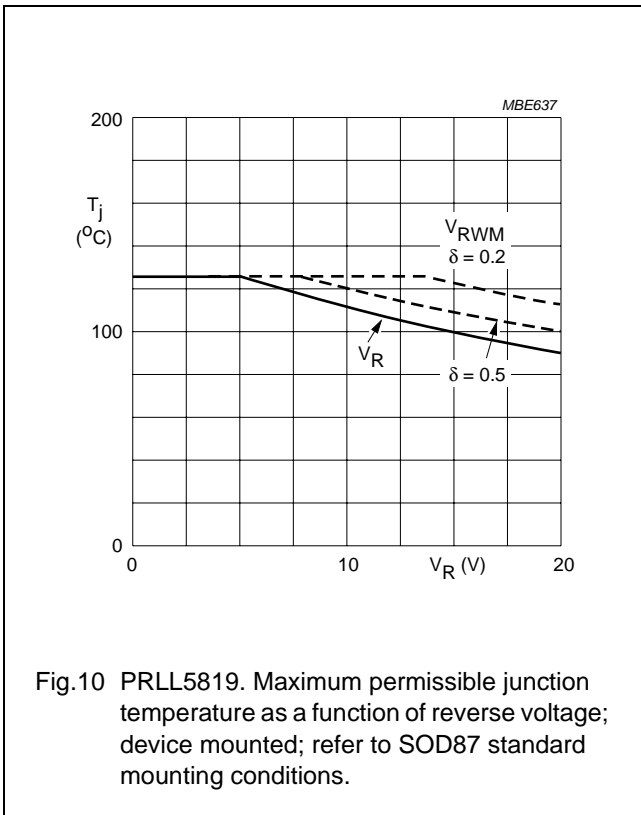
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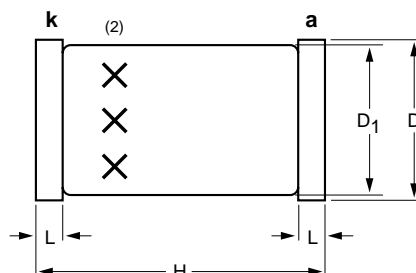
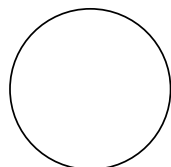
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## PACKAGE OUTLINE

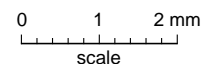
Hermetically sealed glass surface mounted package;  
Implotec™(1) technology; 2 connectors

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 <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	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.
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# ***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>

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