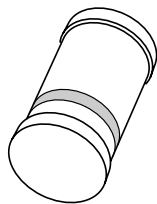


# DATA SHEET



## **PRL5817; PRL5818; PRL5819** Schottky barrier diodes

Product specification  
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.

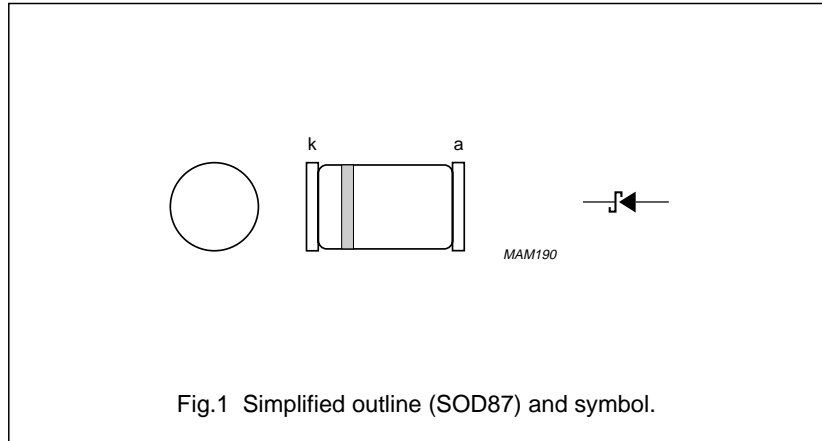
## APPLICATIONS

- 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.

(1) Implotec is a trademark of Philips.



## MARKING

TYPE NUMBER	MARKING CODE
PRLL5817	9
PRLL5818	9
PRLL5819	9

## 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**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_F$	forward voltage PRLL5817	see Fig.2 $I_F = 0.1\text{ A}$	–	–	320	mV
		$I_F = 1\text{ A}$	–	–	450	mV
		$I_F = 3\text{ A}$	–	–	750	mV
$V_F$	forward voltage PRLL5818	see Fig.2 $I_F = 0.1\text{ A}$	–	–	330	mV
		$I_F = 1\text{ A}$	–	–	550	mV
		$I_F = 3\text{ A}$	–	–	875	mV
$V_F$	forward voltage PRLL5819	see Fig.2 $I_F = 0.1\text{ A}$	–	–	340	mV
		$I_F = 1\text{ A}$	–	–	600	mV
		$I_F = 3\text{ A}$	–	–	900	mV
$I_R$	reverse current	$V_R = V_{RRMmax}$ ; note 1	–	0.5	1	mA
		$V_R = V_{RRMmax}$ ; $T_j = 100\text{ °C}$	–	5	10	mA
$C_d$	diode capacitance PRLL5817 PRLL5818 PRLL5819	$V_R = 4\text{ V}$ ; $f = 1\text{ MHz}$	–	70	–	pF
			–	50	–	pF
			–	50	–	pF

**Note**

1. Pulse test:  $t_p = 300\text{ }\mu\text{s}$ ;  $\delta = 0.02$ .

**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

PRL5817; PRL5818; PRL5819

GRAPHICAL DATA

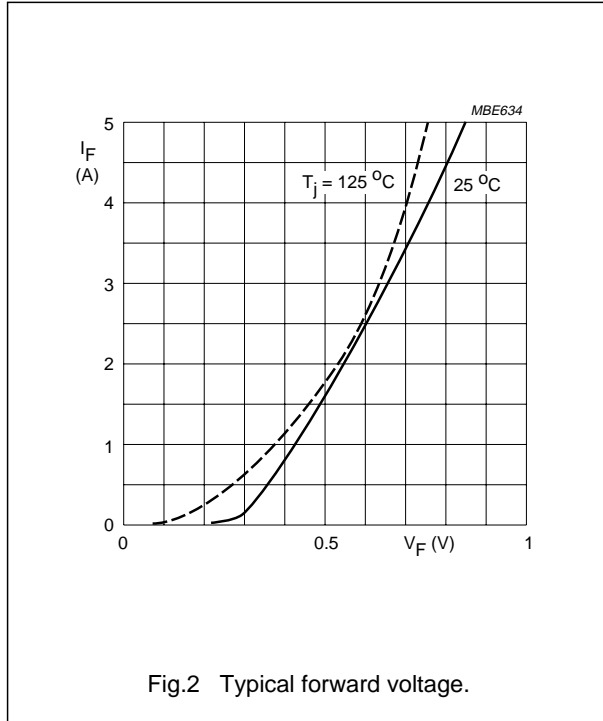


Fig.2 Typical forward voltage.

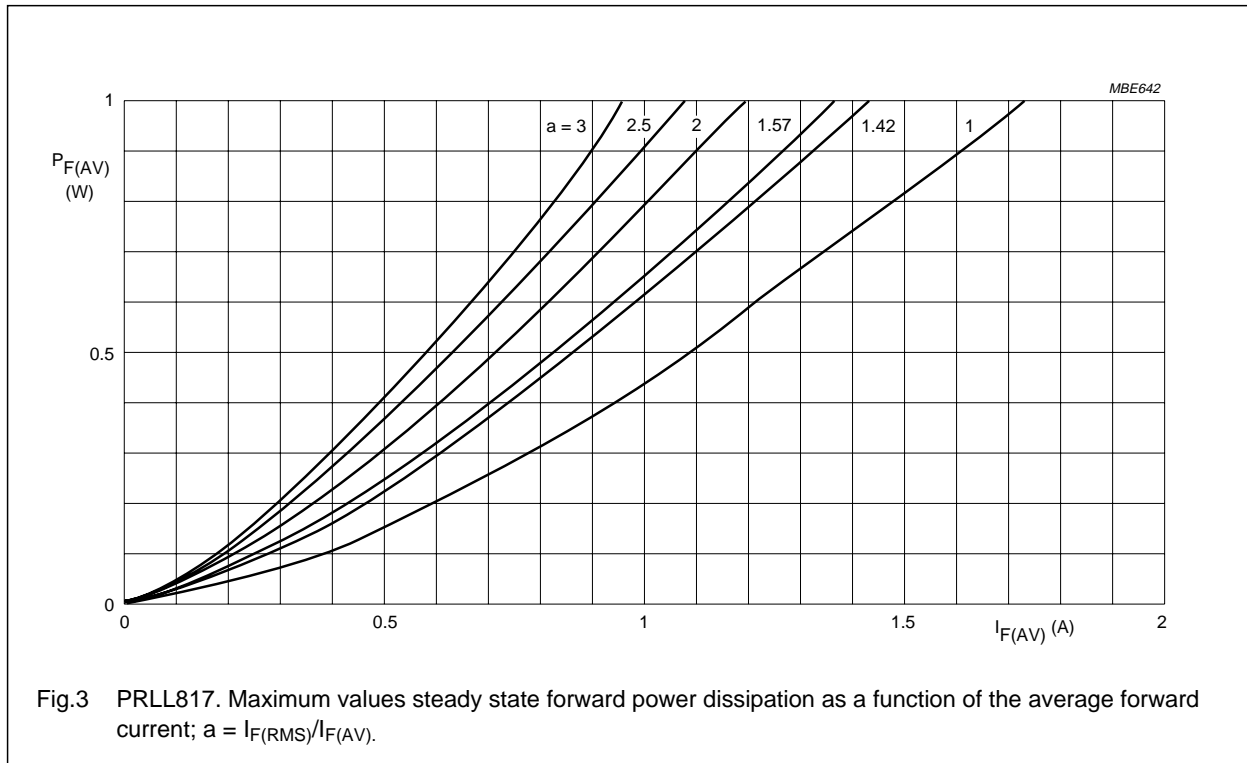
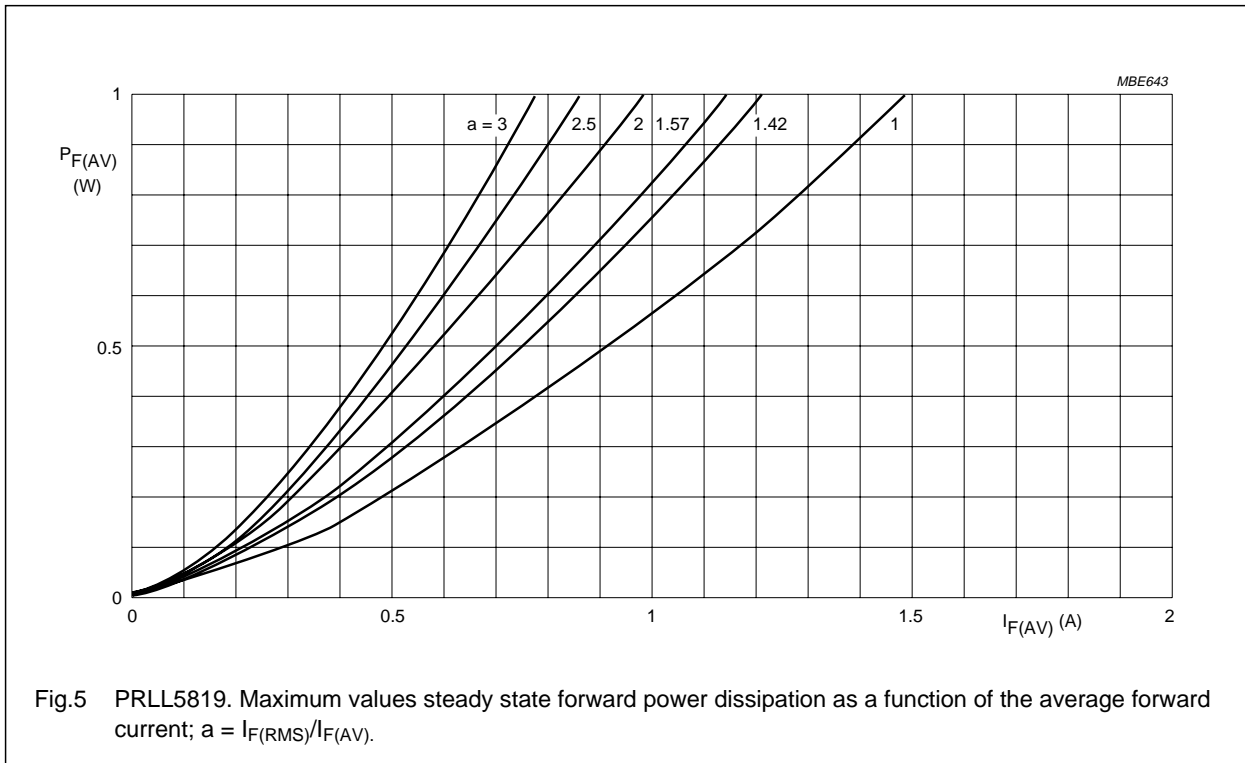
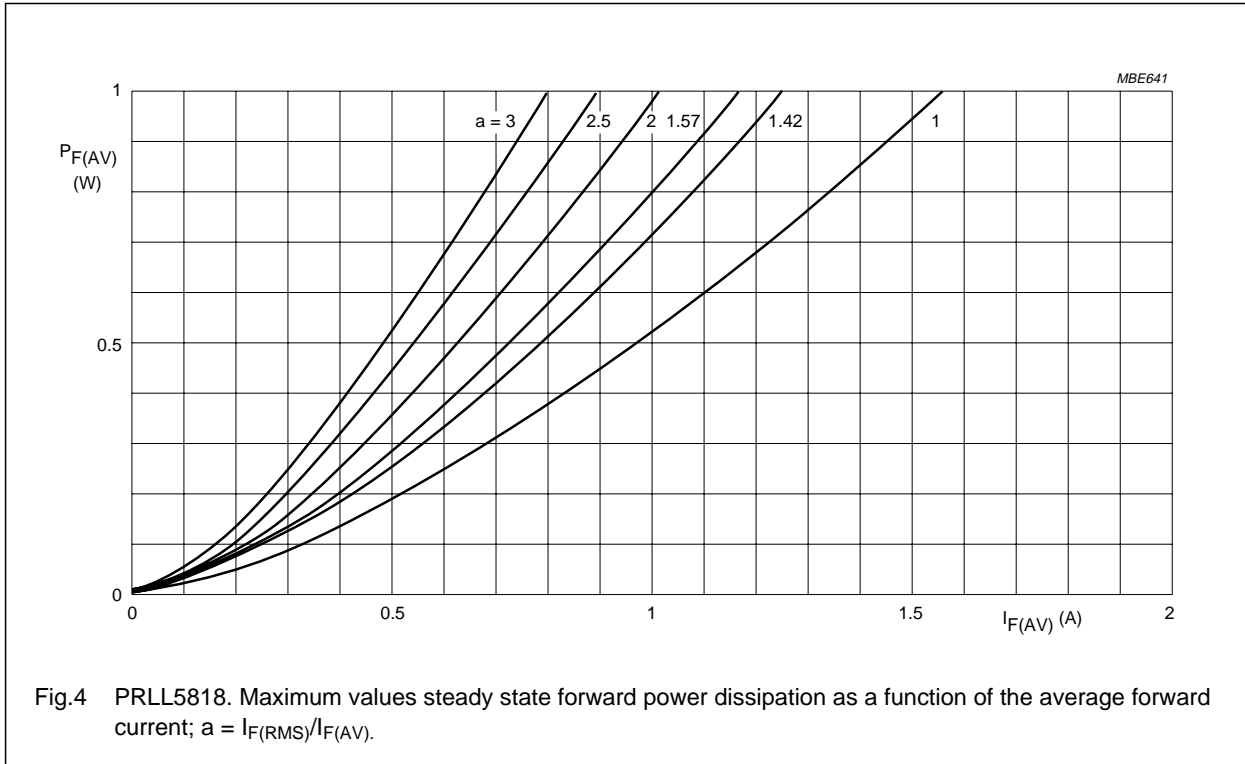


Fig.3 PRL5817. Maximum values steady state forward power dissipation as a function of the average forward current;  $a = I_{F(RMS)}/I_{F(AV)}$ .

Schottky barrier diodes

PRL5817; PRL5818; PRL5819



Schottky barrier diodes

PRLL5817; PRLL5818; PRLL5819

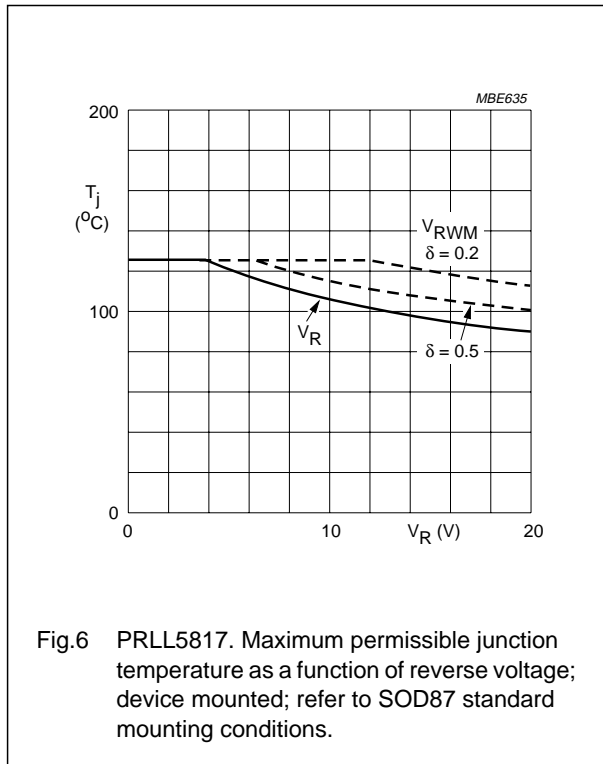


Fig.6 PRLL5817. Maximum permissible junction temperature as a function of reverse voltage; device mounted; refer to SOD87 standard mounting conditions.

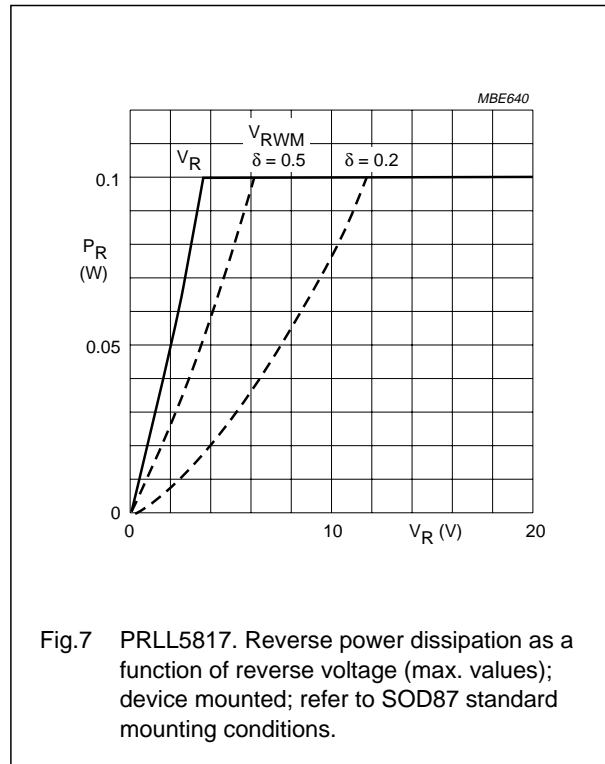


Fig.7 PRLL5817. Reverse power dissipation as a function of reverse voltage (max. values); device mounted; refer to SOD87 standard mounting conditions.

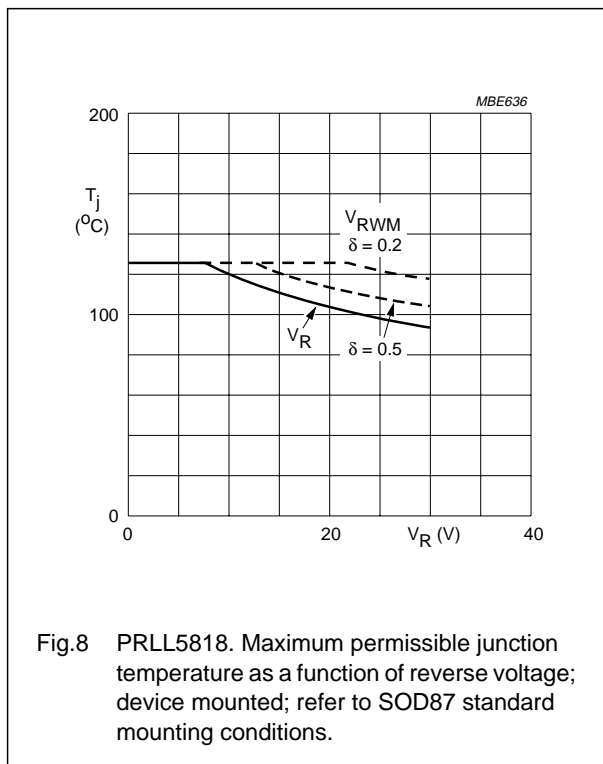


Fig.8 PRLL5818. Maximum permissible junction temperature as a function of reverse voltage; device mounted; refer to SOD87 standard mounting conditions.

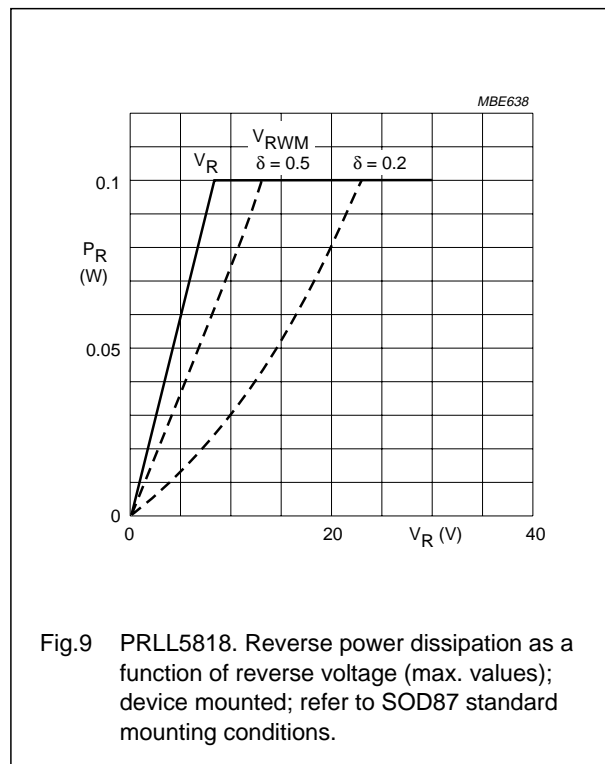
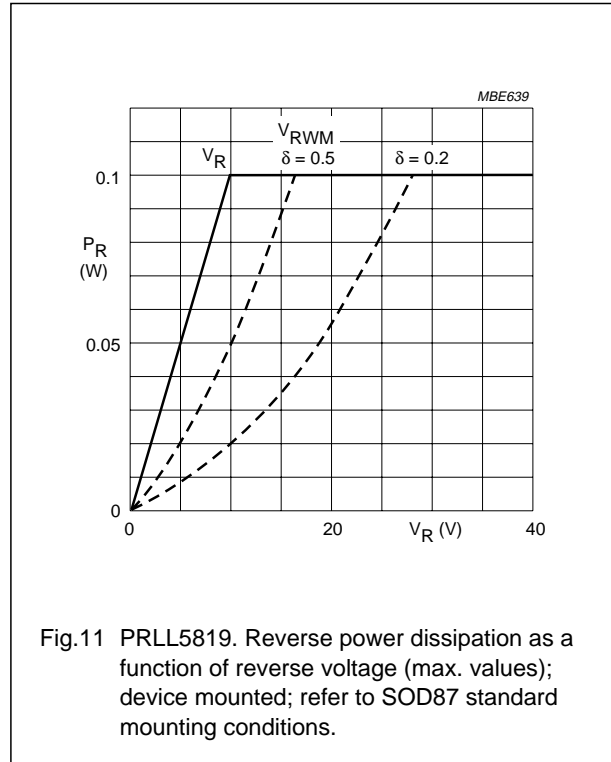
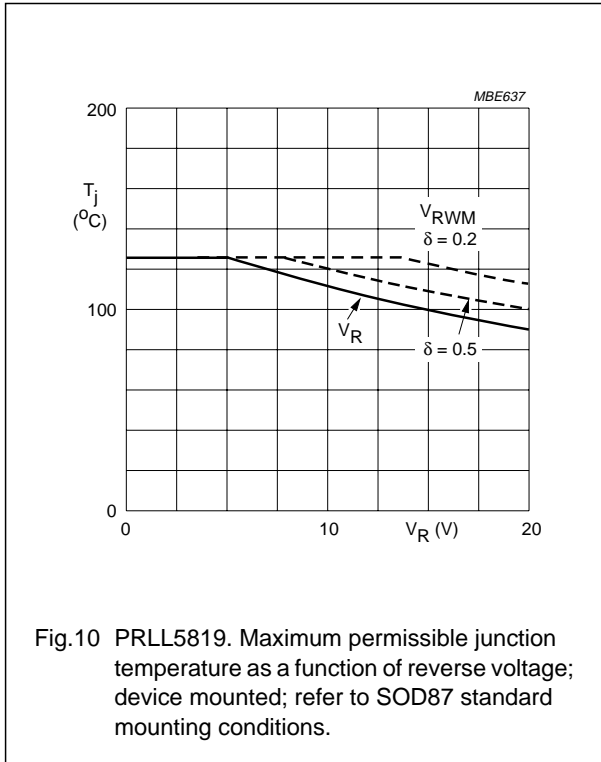


Fig.9 PRLL5818. Reverse power dissipation as a function of reverse voltage (max. values); device mounted; refer to SOD87 standard mounting conditions.

Schottky barrier diodes

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Schottky barrier diodes

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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

DEFINITIONS

Data sheet status	
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.
Limiting values	
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.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

LIFE SUPPORT APPLICATIONS

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Schottky barrier diodes

PRL5817; PRL5818; PRL5819

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**NOTES**

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Schottky barrier diodes

PRL5817; PRL5818; PRL5819

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**NOTES**

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