

DATA SHEET



PRL5817; PRL5818; PRL5819 Schottky barrier diodes

Product data sheet
Supersedes data of 1996 May 03

1999 Apr 22

Schottky barrier diodes

**PRLL5817; PRLL5818;
PRLL5819**

FEATURES

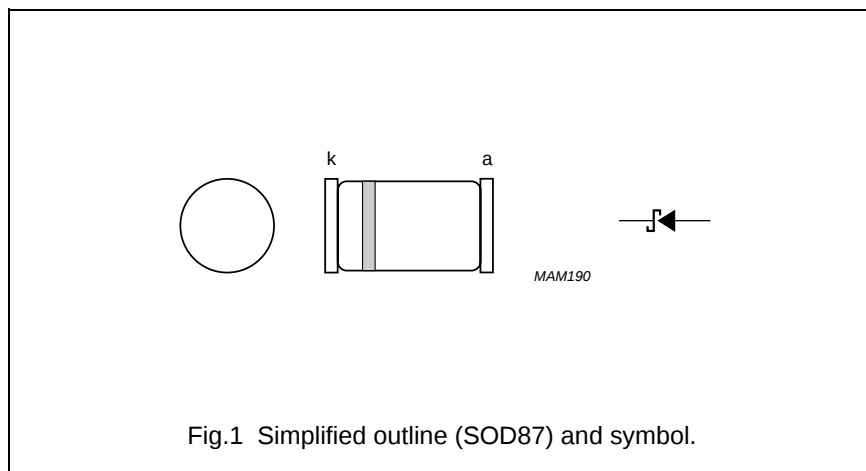
- Low switching losses
- Fast recovery time
- Guard ring protected
- Hermetically sealed glass SMD package.

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

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PRLL5819**ELECTRICAL CHARACTERISTICS** $T_{amb} = 25\text{ }^{\circ}\text{C}$ 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
		$V_R = V_{RRMmax}$; $T_j = 100\text{ }^{\circ}\text{C}$	—	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

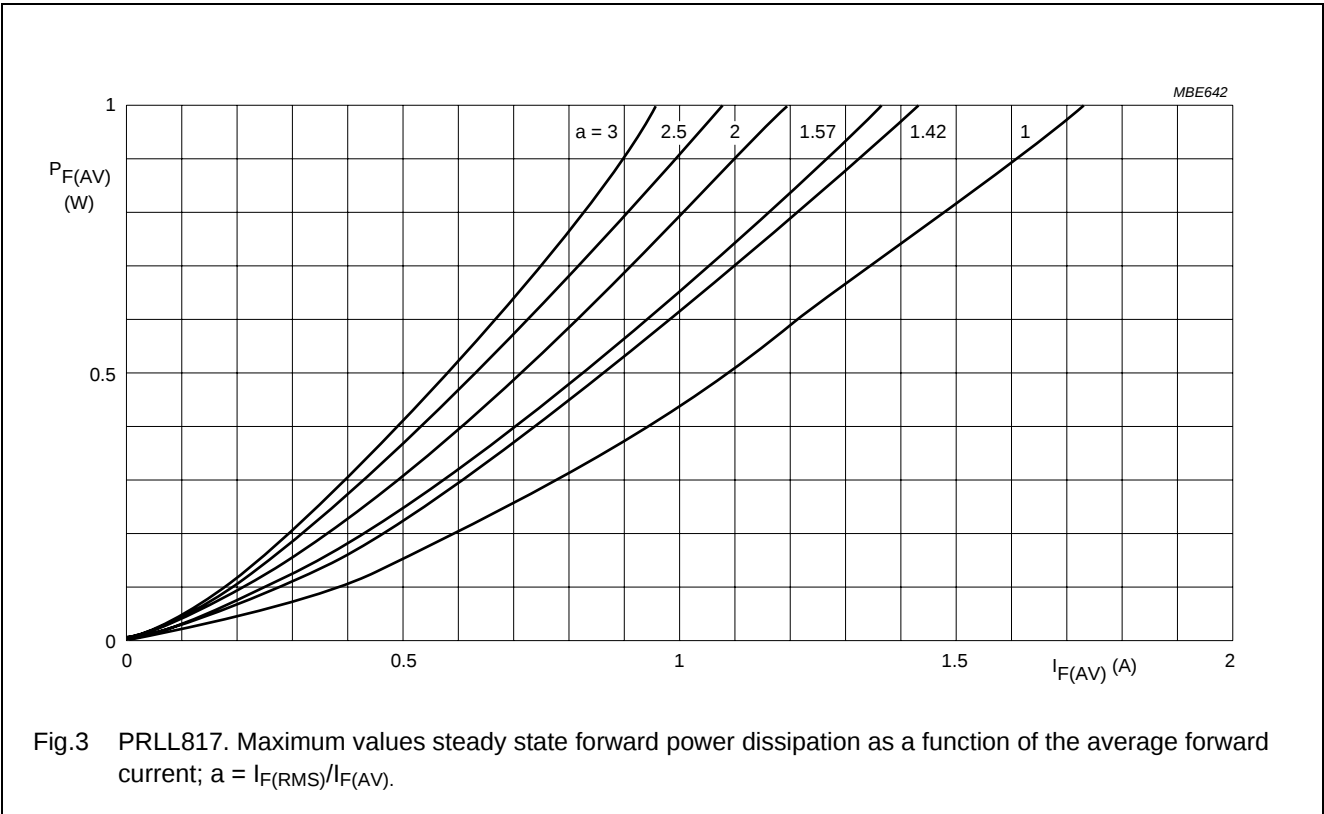
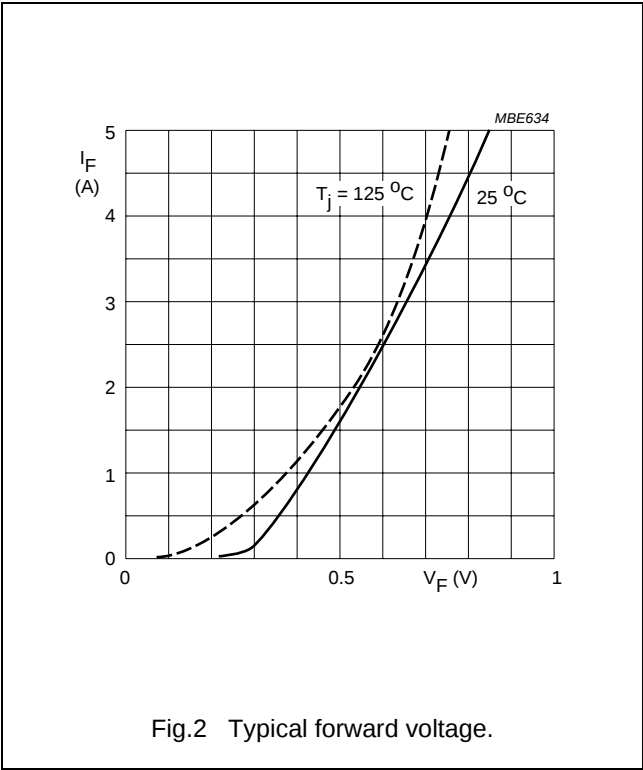
Note

1. Refer to SOD87 standard mounting conditions.

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GRAPHICAL DATA



Schottky barrier diodes

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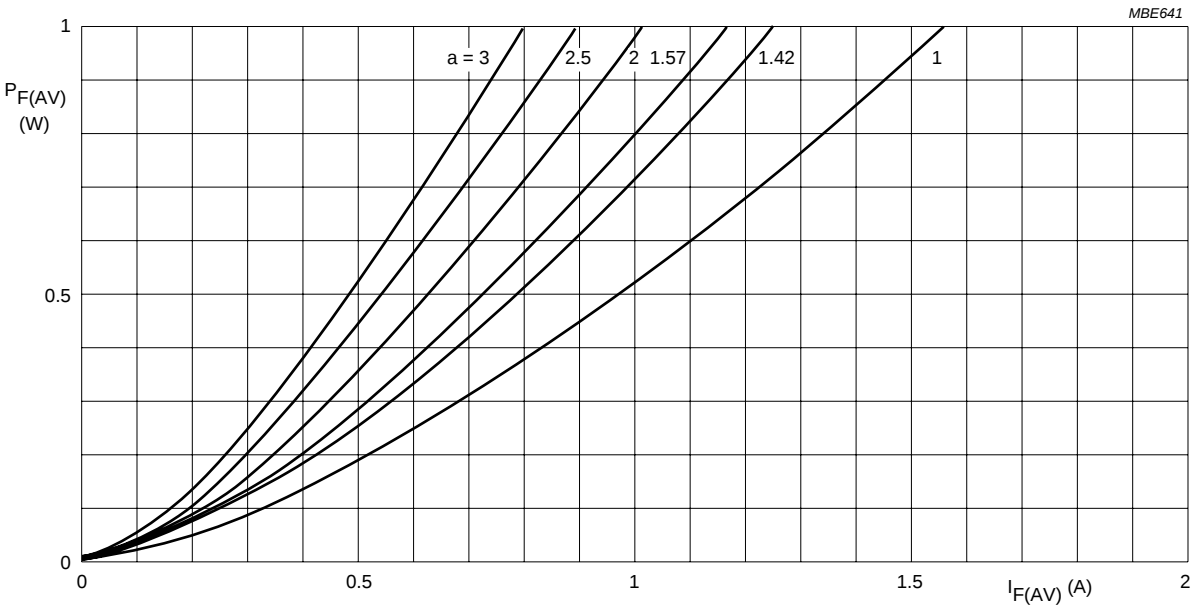


Fig.4 PRLL5818. Maximum values steady state forward power dissipation as a function of the average forward current; $a = I_{F(RMS)}/I_{F(AV)}$.

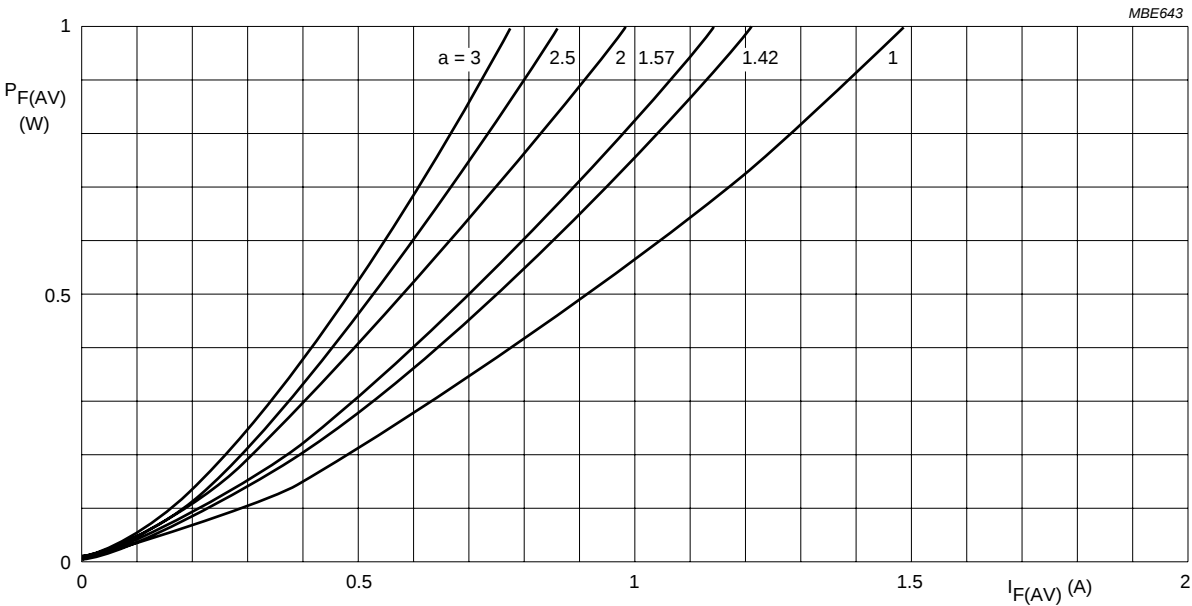


Fig.5 PRLL5819. Maximum values steady state forward power dissipation as a function of the average forward current; $a = I_{F(RMS)}/I_{F(AV)}$.

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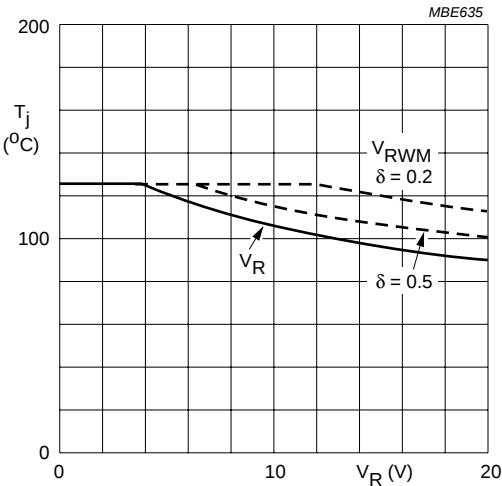


Fig.6 PRLL5817. Maximum permissible junction temperature as a function of reverse voltage; device mounted; refer to SOD87 standard mounting conditions.

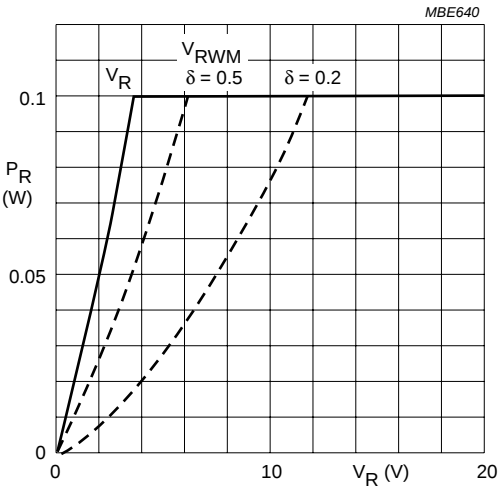


Fig.7 PRLL5817. Reverse power dissipation as a function of reverse voltage (max. values); device mounted; refer to SOD87 standard mounting conditions.

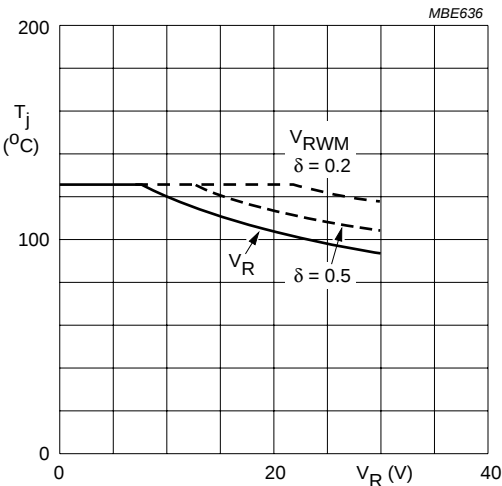


Fig.8 PRLL5818. Maximum permissible junction temperature as a function of reverse voltage; device mounted; refer to SOD87 standard mounting conditions.

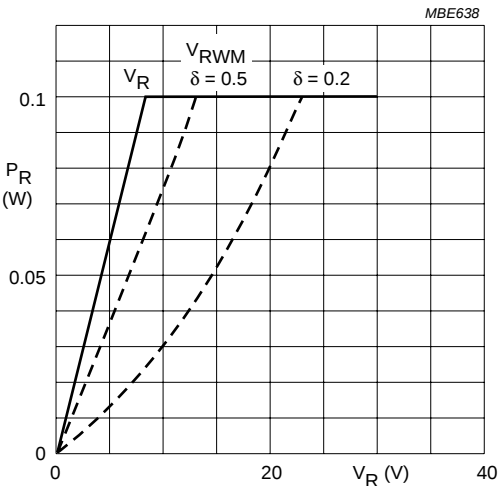


Fig.9 PRLL5818. Reverse power dissipation as a function of reverse voltage (max. values); device mounted; refer to SOD87 standard mounting conditions.

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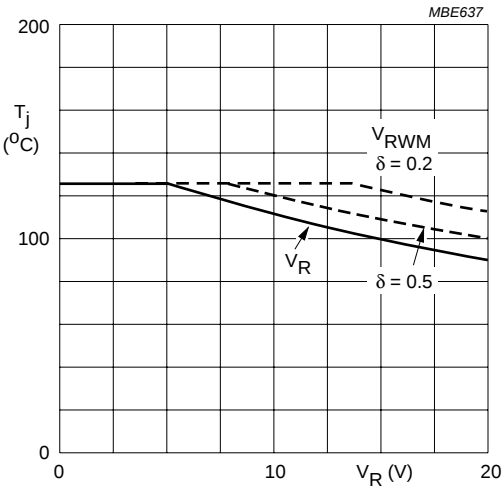


Fig.10 PRLL5819. Maximum permissible junction temperature as a function of reverse voltage; device mounted; refer to SOD87 standard mounting conditions.

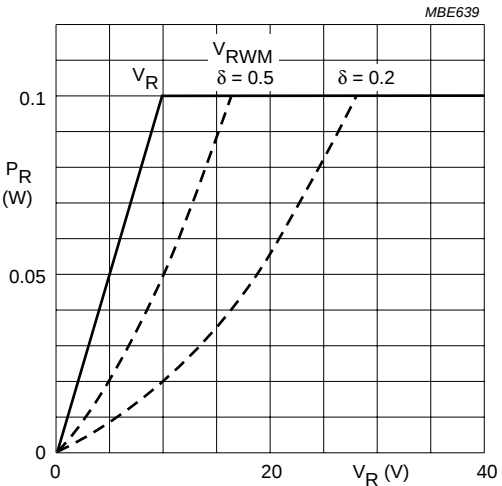


Fig.11 PRLL5819. Reverse power dissipation as a function of reverse voltage (max. values); device mounted; refer to SOD87 standard mounting conditions.

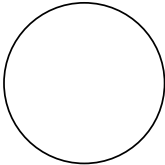
Schottky barrier diodes

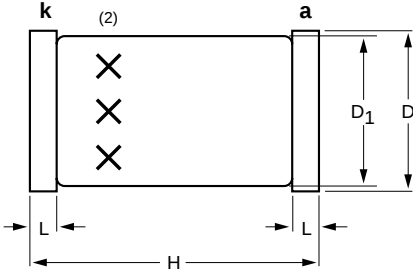
PRLL5817; PRLL5818;
PRLL5819

PACKAGE OUTLINE

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

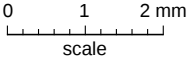
SOD87





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

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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.

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Contact information

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