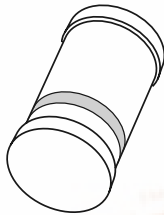


DISCRETE SEMICONDUCTORS

DATA SHEET



PRLL5817; PRLL5818; PRLL5819 **Schottky barrier diodes**

Product specification
Supersedes data of 1996 May 03

1999 Apr 22

Schottky barrier diodes**PRLL5817; PRLL5818; PRLL5819****FEATURES**

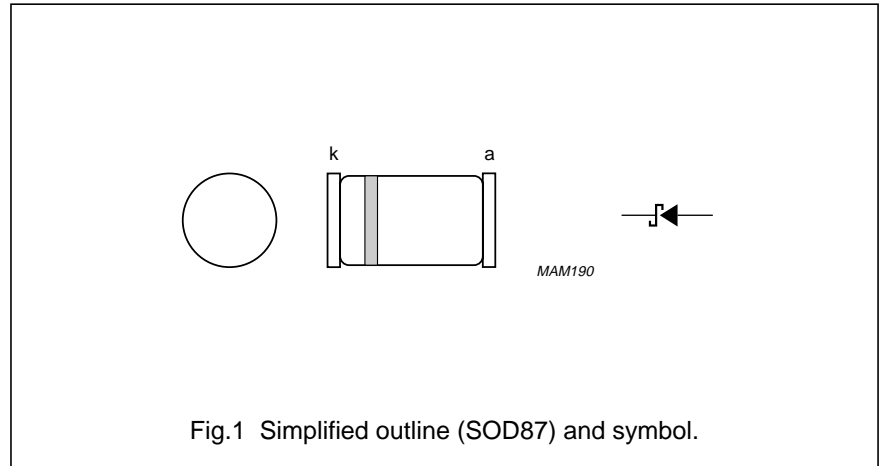
- Low switching losses
- Fast recovery time
- Guard ring protected
- Hermetically sealed glass SMD package.

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^{TM(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; $T_j = T_{jmax}$ 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

PRLL5817; PRLL5818; PRLL5819

GRAPHICAL DATA

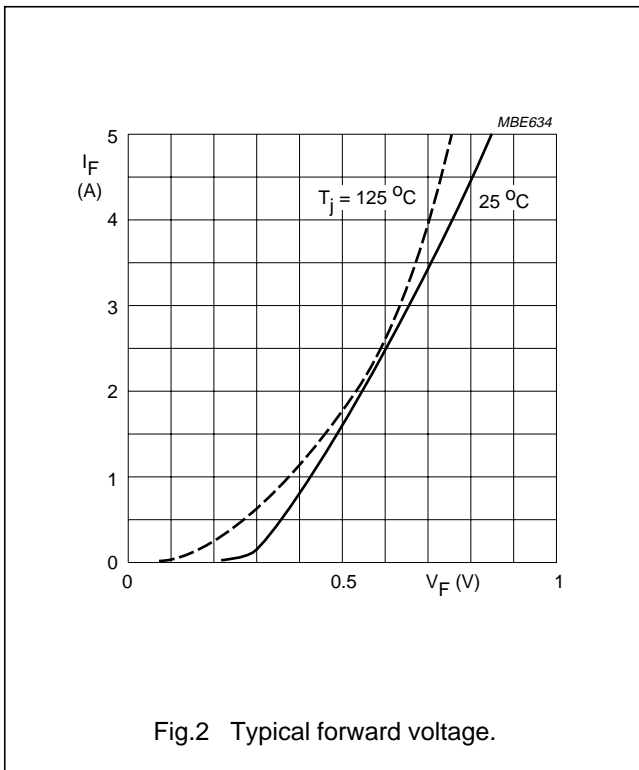


Fig.2 Typical forward voltage.

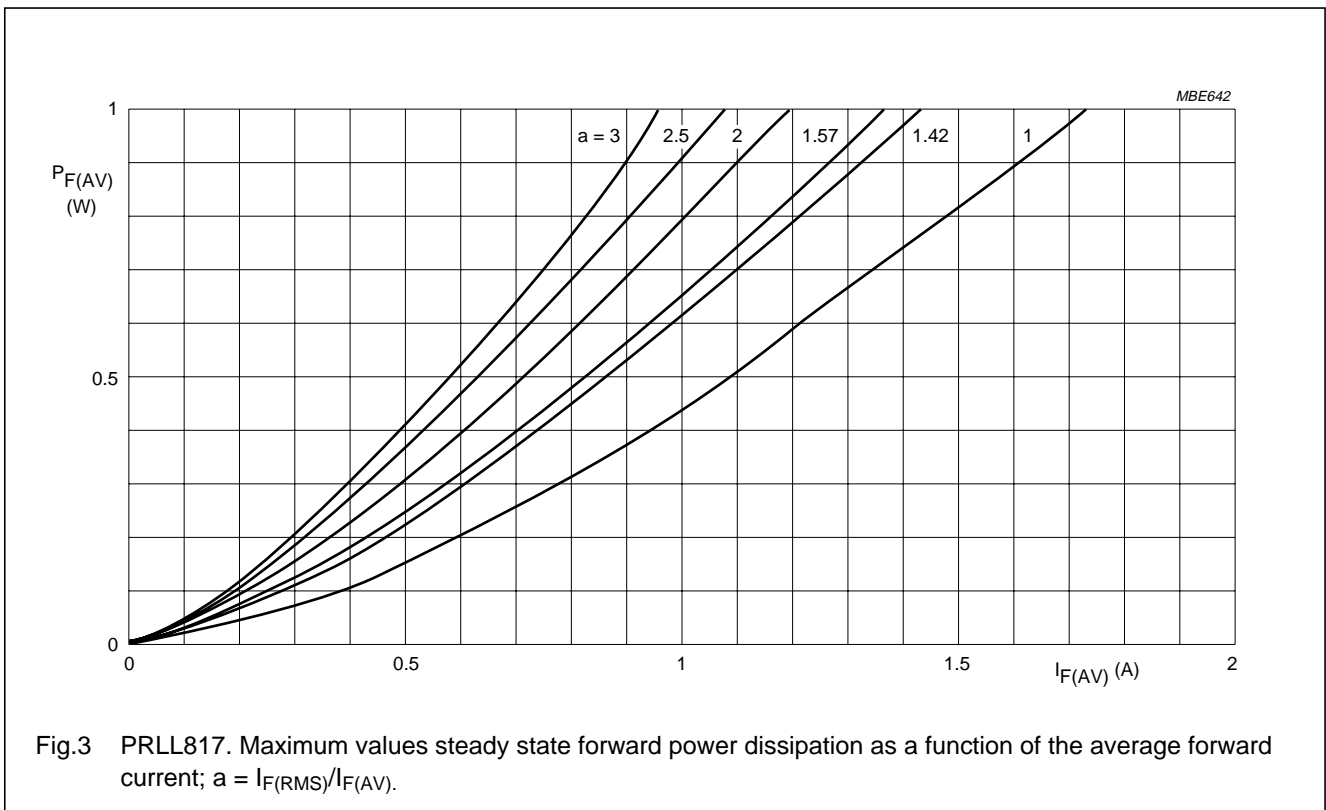
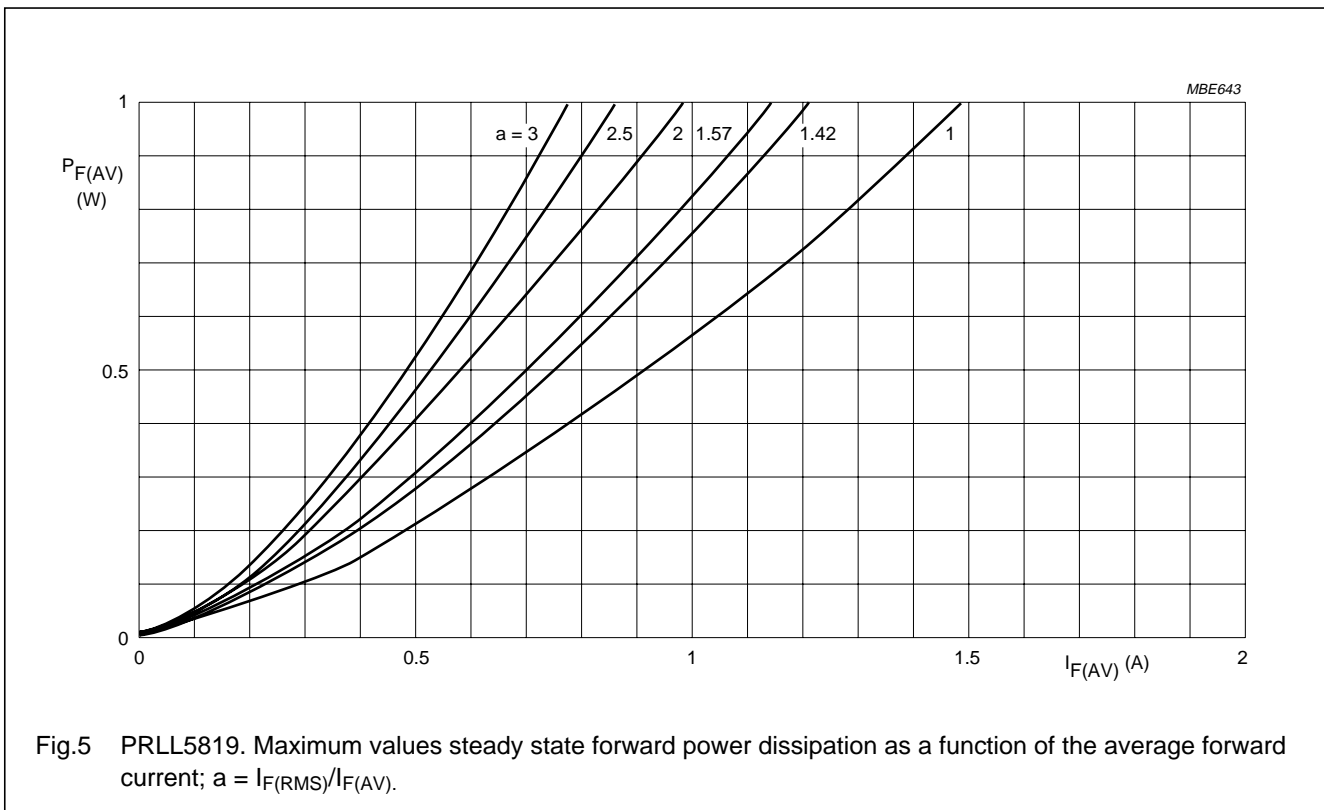
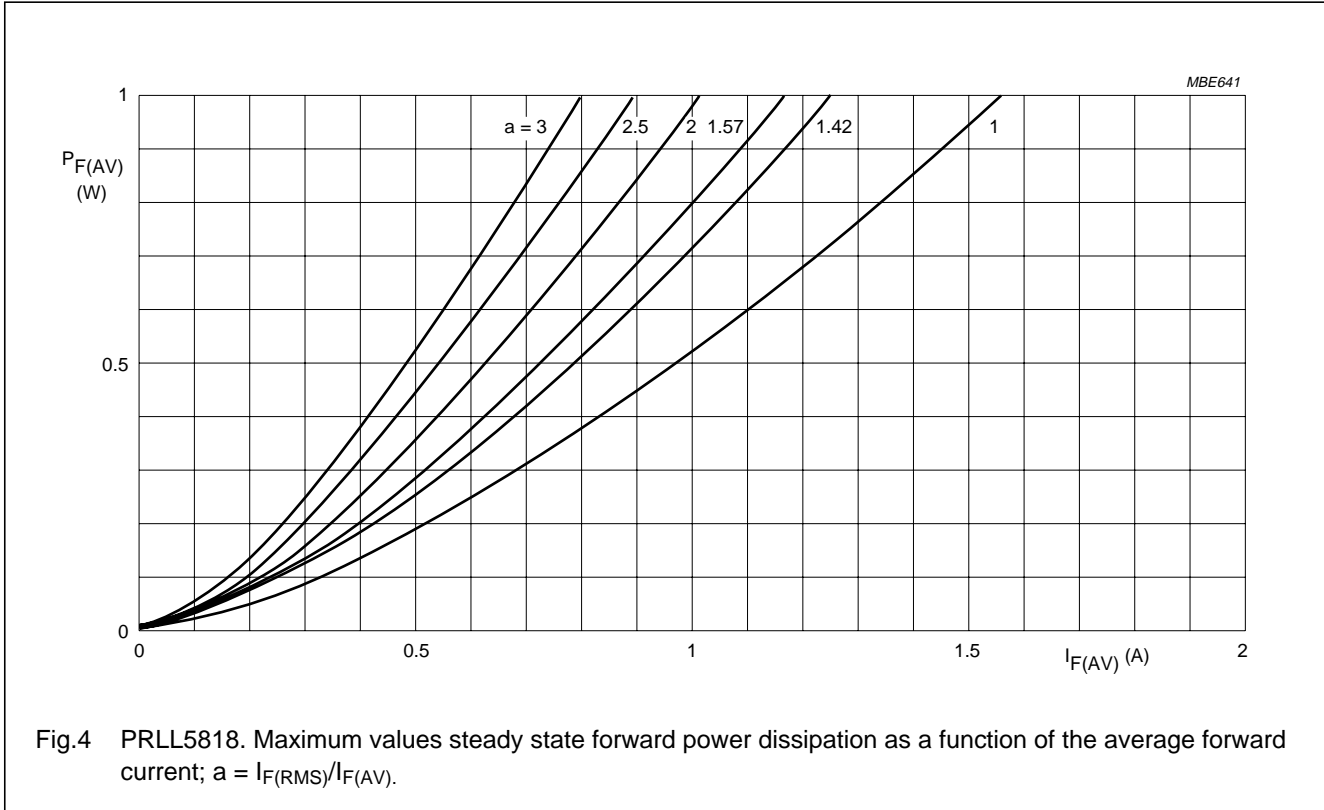


Fig.3 PRLL817. Maximum values steady state forward power dissipation as a function of the average forward current; $a = I_{F(RMS)}/I_{F(AV)}$.

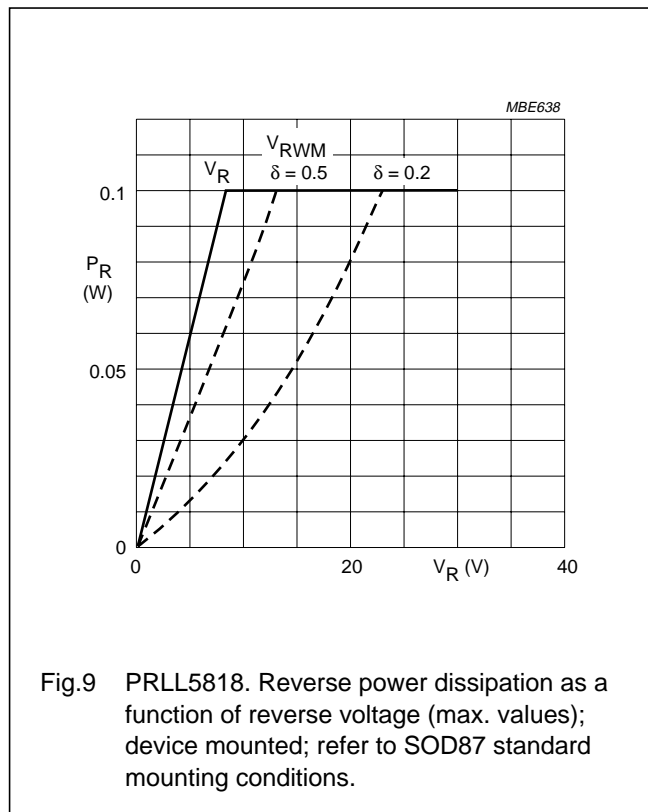
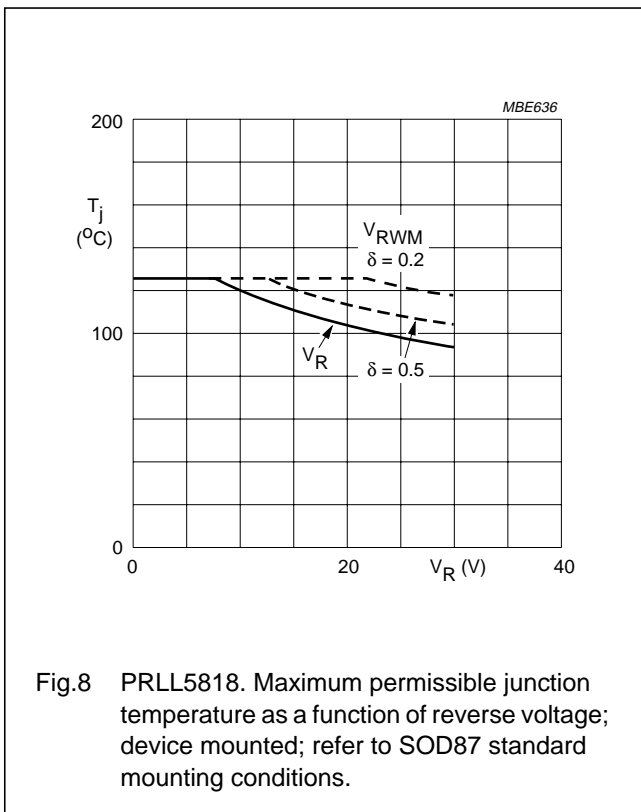
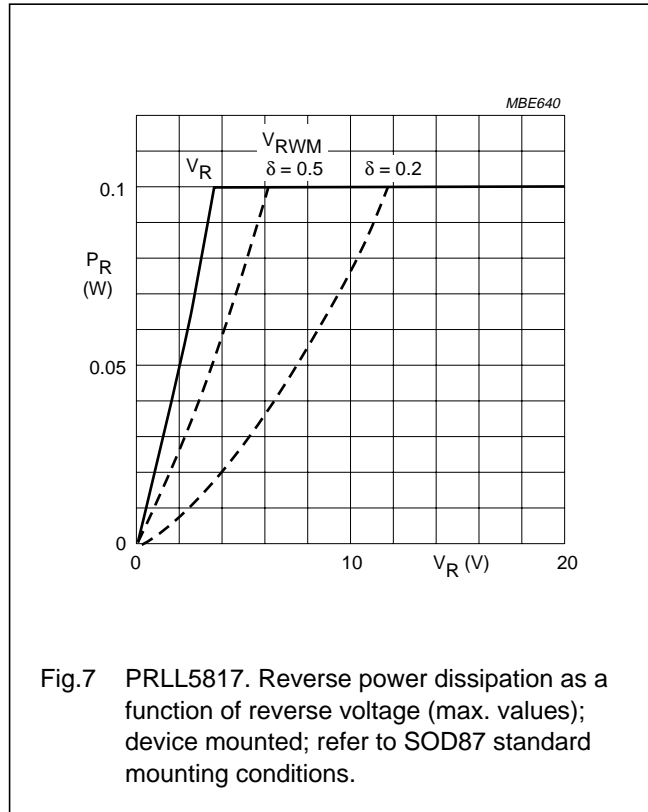
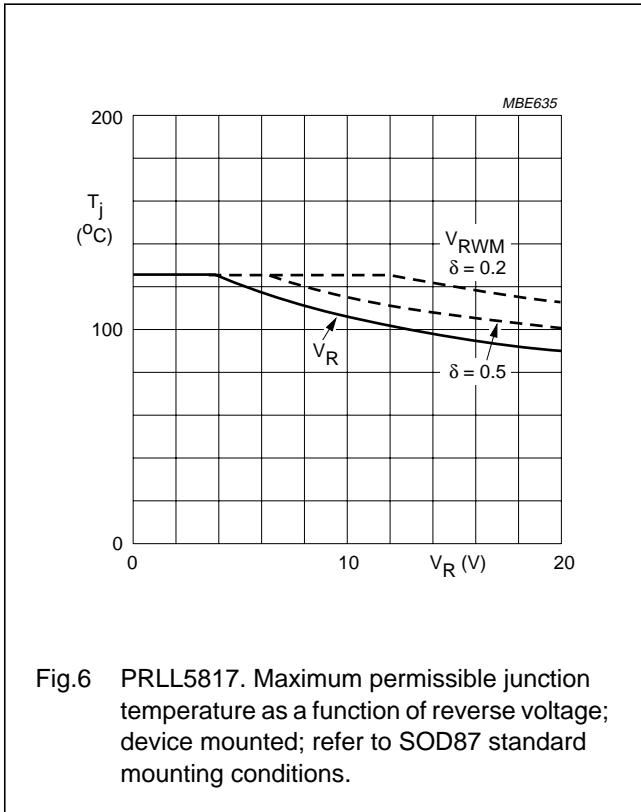
Schottky barrier diodes

PRLL5817; PRLL5818; PRLL5819



Schottky barrier diodes

PRLL5817; PRLL5818; PRLL5819



Schottky barrier diodes

PRLL5817; PRLL5818; PRLL5819

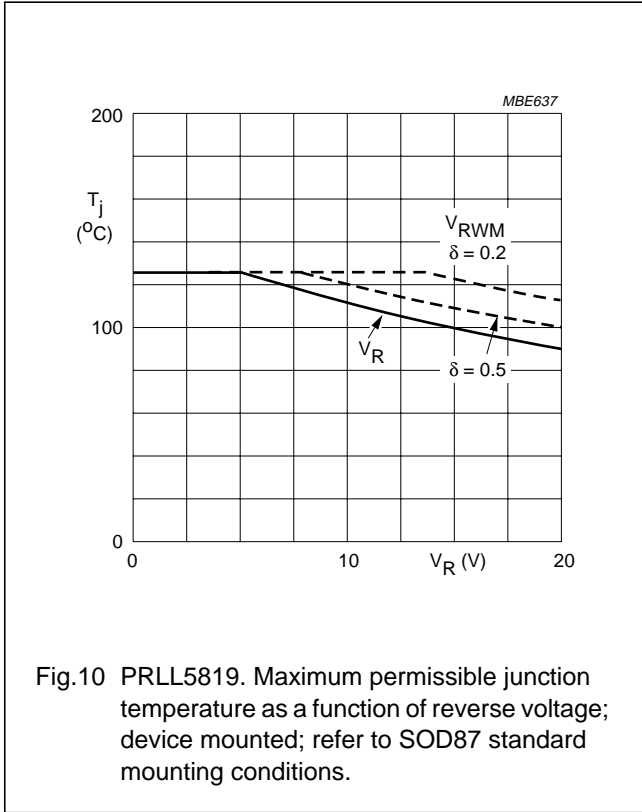


Fig.10 PRLL5819. Maximum permissible junction temperature as a function of reverse voltage; device mounted; refer to SOD87 standard mounting conditions.

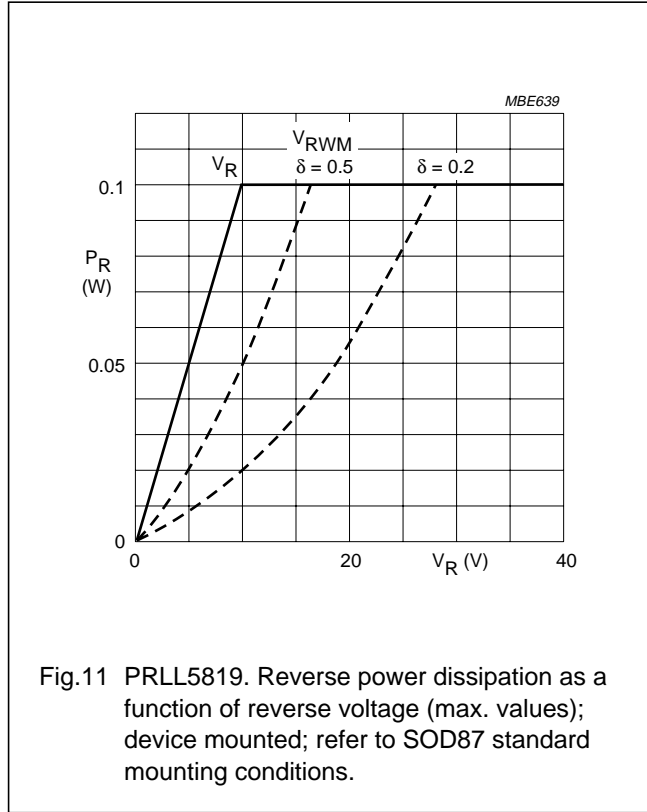


Fig.11 PRLL5819. Reverse power dissipation as a function of reverse voltage (max. values); device mounted; refer to SOD87 standard mounting conditions.

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	3.7	0.3
	2.0	1.8	3.3	

Notes

- Implotec is a trademark of Philips.
- 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

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

Schottky barrier diodes

PRL5817; PRL5818; PRL5819

NOTES

Schottky barrier diodes

PRL5817; PRL5818; PRL5819

NOTES

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