

# Silicon Schottky Diode

## **PRL5819**

40V / 1A

# DATASHEET

OEM – Philips

Source: Philips Databook 1999

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

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

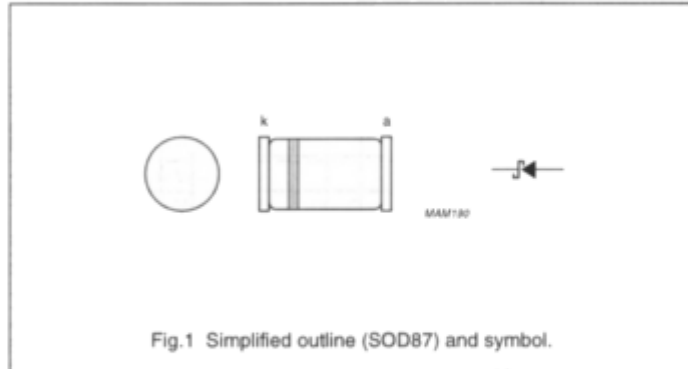
**APPLICATIONS**

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

**DESCRIPTION**

The PRL5817 to PRL5819 types are Schottky barrier diodes fabricated in planar technology, and encapsulated in SOD87 hermetically sealed glass SMD packages incorporating Implotec™<sup>(1)</sup> technology.

(1) Implotec is a trademark of Philips.

**MARKING**

TYPE NUMBER	MARKING CODE
PRL5817	817 PH
PRL5818	818 PH
PRL5819	819 PH

## 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				V
	PRLL5817		–	20	V
	PRLL5818		–	30	V
	PRLL5819		–	40	V
$V_{RSM}$	non-repetitive peak reverse voltage				V
	PRLL5817		–	24	V
	PRLL5818		–	36	V
	PRLL5819		–	48	V
$V_{RRM}$	repetitive peak reverse voltage				V
	PRLL5817		–	20	V
	PRLL5818		–	30	V
	PRLL5819		–	40	V
$V_{RWM}$	crest working reverse voltage				V
	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<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. Pulsed 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.

Schottky barrier diodes

PRL5817; PRL5818; PRL5819

GRAPHICAL DATA

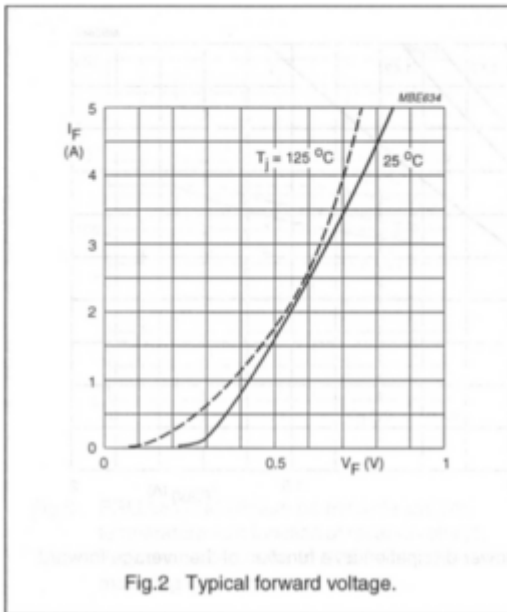


Fig.2 Typical forward voltage.

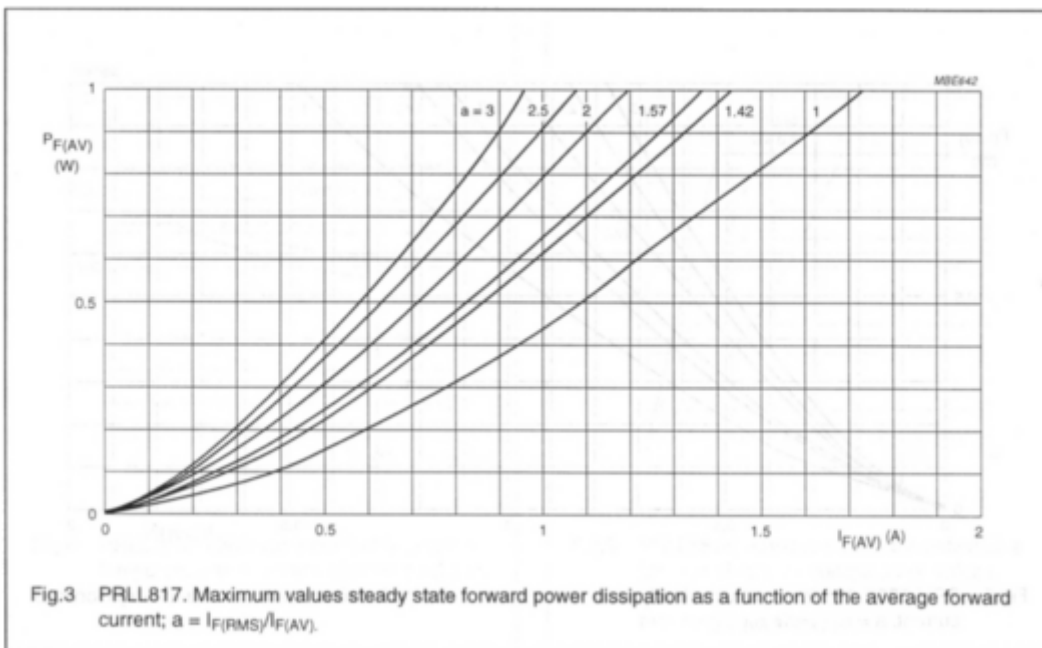


Fig.3 PRL817. Maximum values steady state forward power dissipation as a function of the average forward current;  $a = I_{F(RMS)}/I_{F(AV)}$ .

Schottky barrier diodes

PRL5817; PRL5818; PRL5819

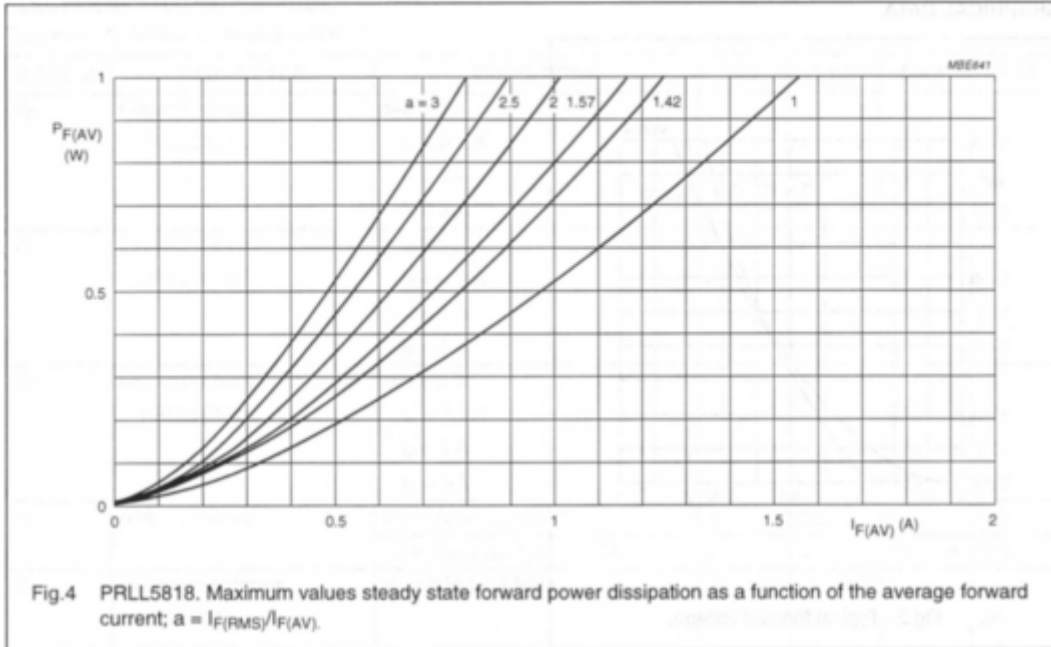


Fig. 4 PRL5818. Maximum values steady state forward power dissipation as a function of the average forward current;  $a = I_{F(RMS)}/I_{F(AV)}$ .

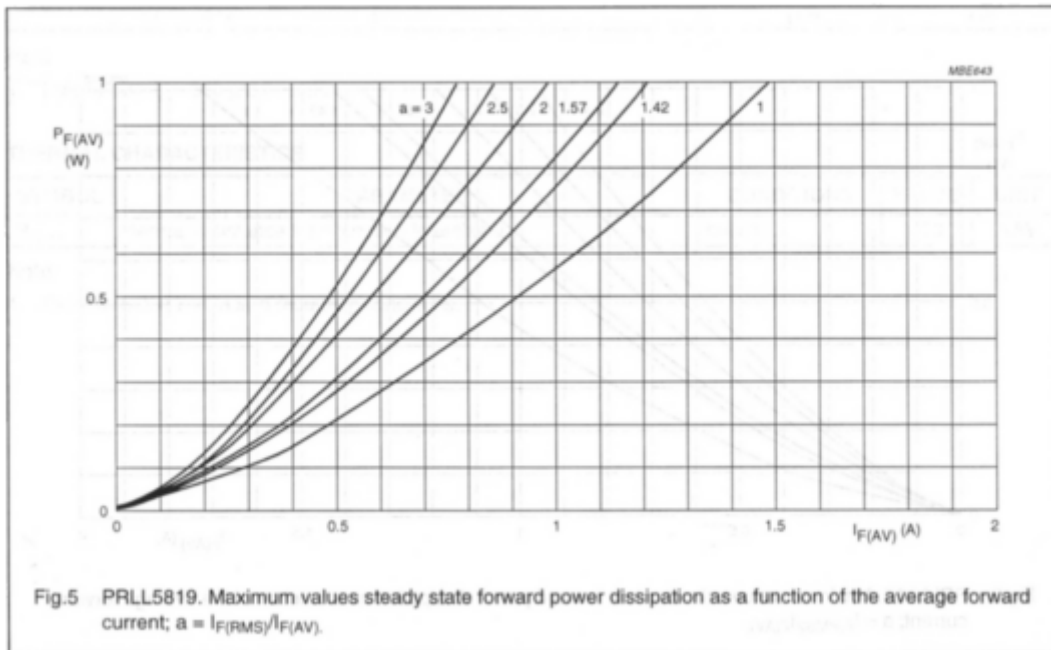
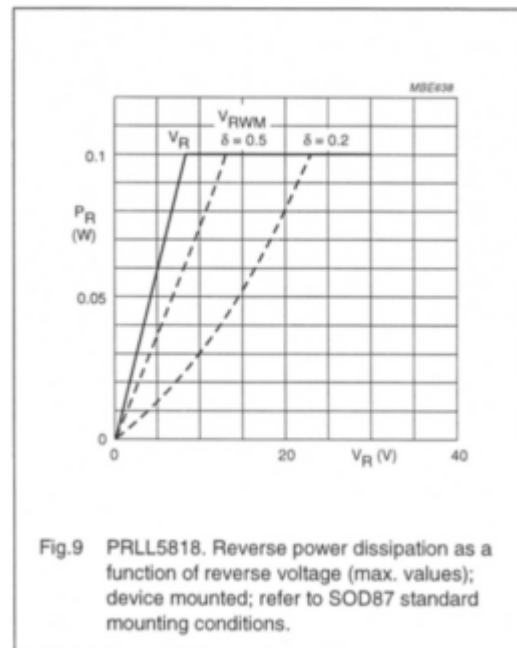
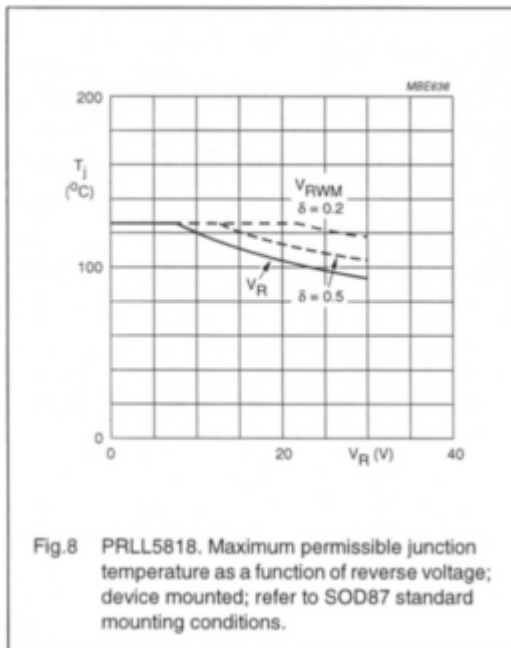
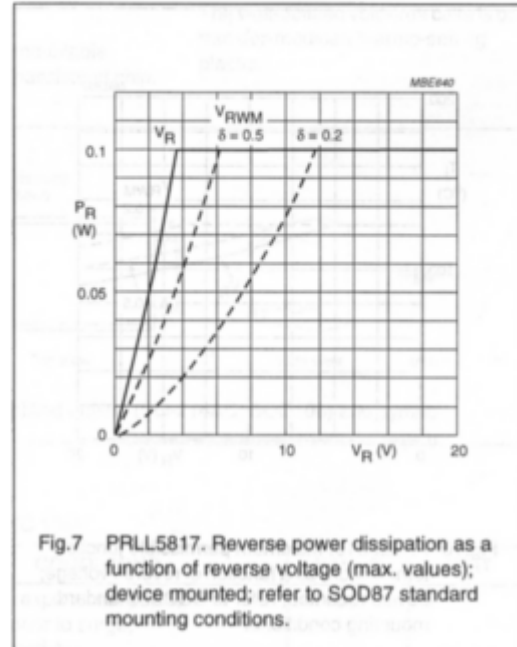
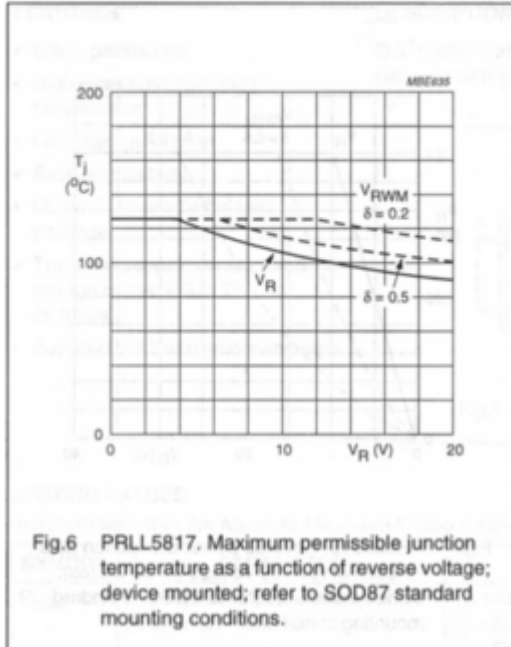


Fig. 5 PRL5819. Maximum values steady state forward power dissipation as a function of the average forward current;  $a = I_{F(RMS)}/I_{F(AV)}$ .

## Schottky barrier diodes

## PRL5817; PRL5818; PRL5819



## Schottky barrier diodes

## PRL5817; PRL5818; PRL5819

