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# DATA SHEET



## **PRL4001; PRL4002** Rectifiers

Product specification  
Supersedes data of 1996 Jun 10

2003 May 13

# Rectifiers

# PRL4001; PRL4002

## FEATURES

- Glass passivated
- High maximum operating temperature
- Low leakage current
- Excellent stability
- Shipped in 8 mm embossed tape
- Smallest surface mount rectifier outline.

## DESCRIPTION

Cavity free cylindrical glass package through Implotec™(1) technology.

(1) Implotec is a trademark of Philips.

This package is hermetically sealed and fatigue free as coefficients of expansion of all used parts are matched.

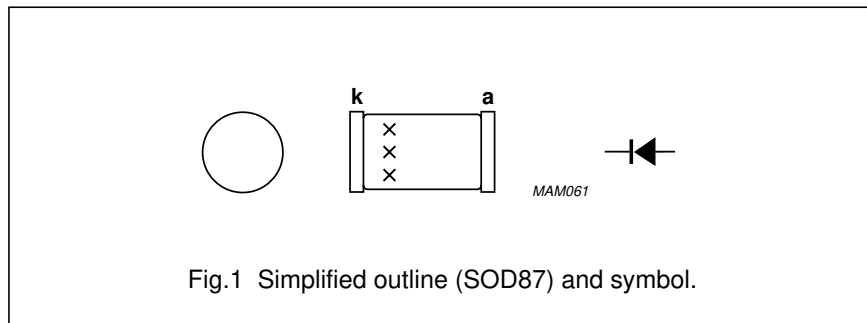


Fig.1 Simplified outline (SOD87) and symbol.

## LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>RRM</sub>	repetitive peak reverse voltage PRL4001 PRL4002		–	50	V
			–	100	V
V <sub>R</sub>	continuous reverse voltage PRL4001 PRL4002		–	50	V
			–	100	V
I <sub>F(AV)</sub>	average forward current	averaged over any 20 ms period; T <sub>tp</sub> = 105 °C	–	1.60	A
		averaged over any 20 ms period; T <sub>amb</sub> = 65 °C; see Fig.2	–	0.68	A
I <sub>FRM</sub>	repetitive peak forward current		–	10	A
I <sub>FSM</sub>	non-repetitive peak forward current	half sinewave; 60 Hz	–	20	A
T <sub>stg</sub>	storage temperature		–65	+175	°C
T <sub>j</sub>	junction temperature		–65	+175	°C

## Rectifiers

## PRL4001; PRL4002

**ELECTRICAL CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
$V_F$	forward voltage	$I_F = 1\text{ A}$ ; see Fig.3	1.1	V
$V_{F(AV)}$	full-cycle average forward voltage	$I_{F(AV)} = 1\text{ A}$	0.8	V
$I_R$	reverse current	$V_R = V_{Rmax}$	10	$\mu\text{A}$
		$V_R = V_{Rmax}$ ; $T_{amb} = 100\text{ °C}$	50	$\mu\text{A}$
$I_{R(AV)}$	full-cycle average reverse current	$V_R = V_{RRMmax}$ ; $T_{amb} = 75\text{ °C}$	30	$\mu\text{A}$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-tp}$	thermal resistance from junction to tie-point		30	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	150	K/W

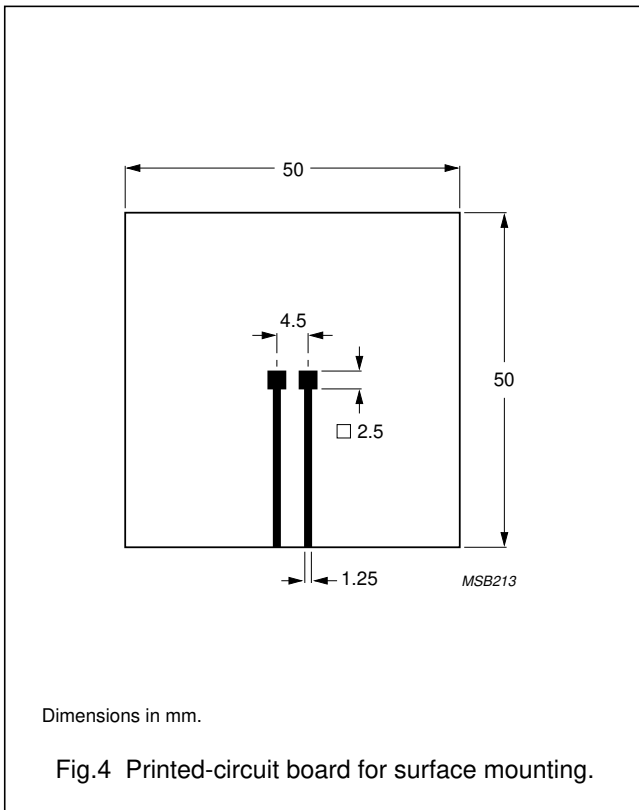
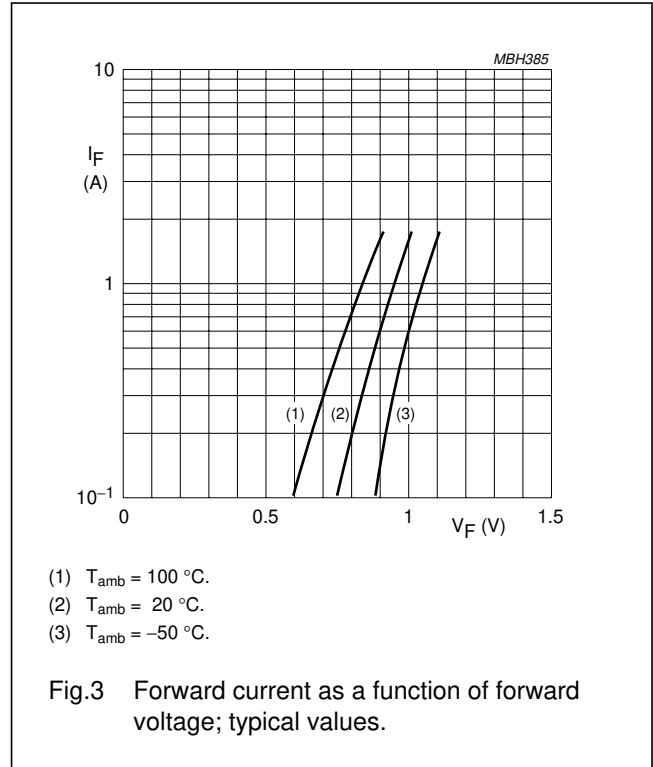
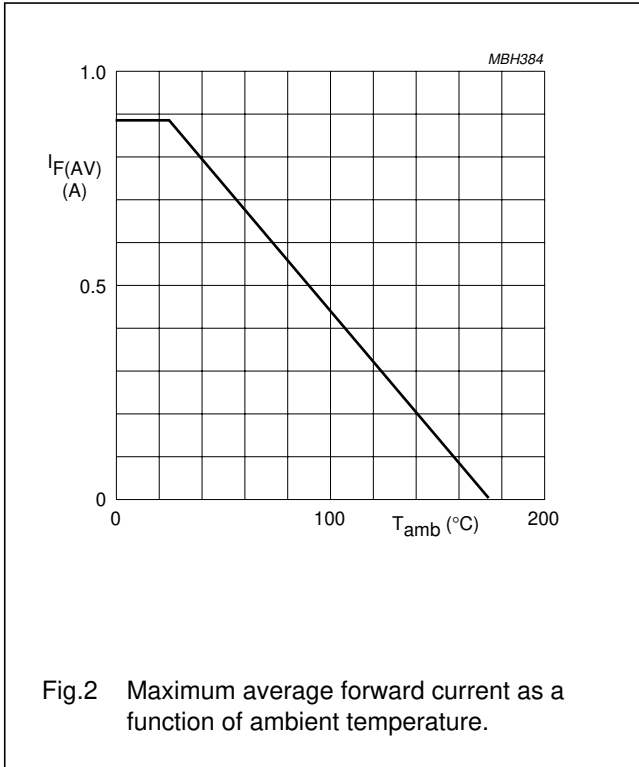
**Note**

1. Device mounted on epoxy-glass printed-circuit board, 1.5 mm thick; thickness of copper  $\geq 40\ \mu\text{m}$ , see Fig.4. For more information please refer to the "General Part of associated Handbook".

Rectifiers

PRL4001; PRL4002

GRAPHICAL DATA



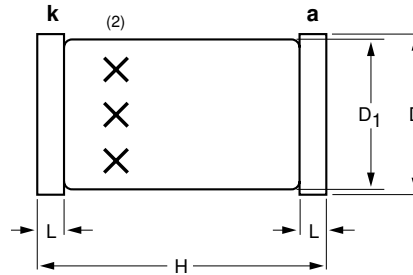
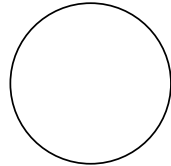
Rectifiers

PRLL4001; PRLL4002

PACKAGE OUTLINE

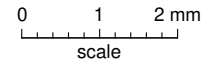
Hermetically sealed glass surface mounted package;  
Implotec™(1) technology; 2 connectors

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

## Rectifiers

## PRL4001; PRL4002

## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
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3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

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**Short-form specification** — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

**Limiting values definition** — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). 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.

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Rectifiers

PRL4001; PRL4002

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**NOTES**



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