DATA SHEET

PRLL4001; PRLL4002
Rectifiers

Product specification
Supersedes data of 1996 Jun 10

2003 May 13

Philips
Semiconductors

PHILIPS

Rectifiers PRLL4001; PRLL4002

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.

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

(1) Implotec is a trademark of Philips.

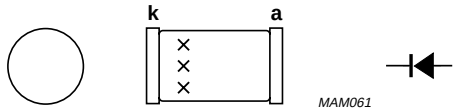


Fig.1 Simplified outline (SOD87) and symbol.

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{RRM}	repetitive peak reverse voltage				
	PRLL4001		–	50	V
	PRLL4002		–	100	V
V_R	continuous reverse voltage				
	PRLL4001		–	50	V
	PRLL4002		–	100	V
$I_{F(AV)}$	average forward current	averaged over any 20 ms period; T_{tp} = 105 °C	–	1.60	A
		averaged over any 20 ms period; T_{amb} = 65 °C; see Fig.2	–	0.68	A
I_{FRM}	repetitive peak forward current		–	10	A
I_{FSM}	non-repetitive peak forward current	half sinewave; 60 Hz	–	20	A
T_{stg}	storage temperature		–65	+175	°C
T_j	junction temperature		–65	+175	°C

ELECTRICAL CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

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

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}tp}$	thermal resistance from junction to tie-point		30	K/W
$R_{th\ j\text{-}a}$	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 ≥40 μm, see Fig.4. For more information please refer to the *"General Part of associated Handbook"*.

GRAPHICAL DATA

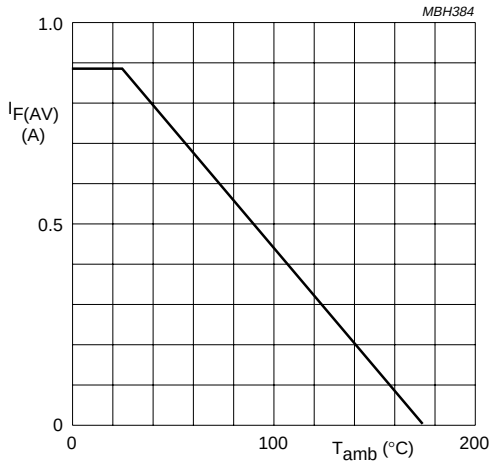
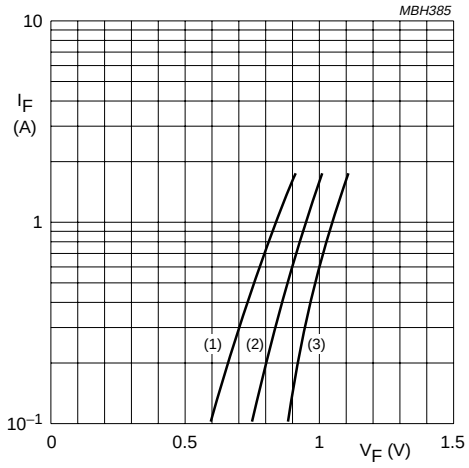
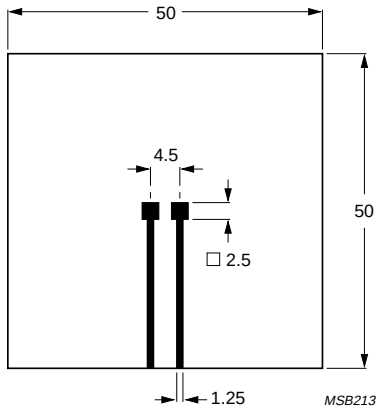


Fig.2 Maximum average forward current as a function of ambient temperature.



(1) T_{amb} = 100 °C.
(2) T_{amb} = 20 °C.
(3) T_{amb} = –50 °C.

Fig.3 Forward current as a function of forward voltage; typical values.

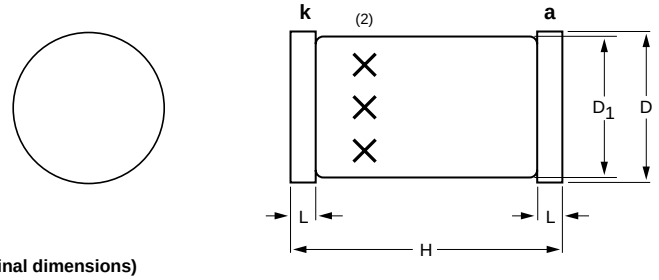


Dimensions in mm.

Fig.4 Printed-circuit board for surface mounting.

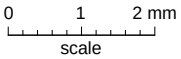
PACKAGE OUTLINE

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

DATA SHEET STATUS

LEVEL	DATA SHEET STATUS[1]	PRODUCT STATUS[2][3]	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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2. The product status of the device(s) described in this data sheet may have changed since this data sheet was published. The latest information is available on the Internet at URL http://www.semiconductors.philips.com.
3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

DEFINITIONS

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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