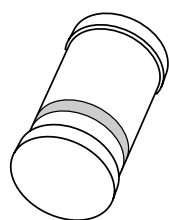


# DATA SHEET



## **PMLL4148L; PMLL4448** High-speed diodes

Product specification  
Supersedes data of 2000 Nov 15

2002 Jan 23

## High-speed diodes

## PMLL4148L; PMLL4448

## FEATURES

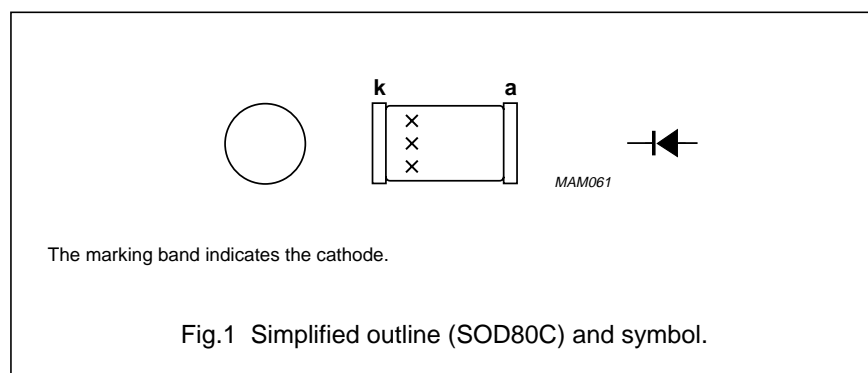
- Small hermetically sealed glass SMD package
- High switching speed: max. 4 ns
- Continuous reverse voltage: max. 75 V
- Repetitive peak reverse voltage: max. 100 V
- Repetitive peak forward current: max. 450 mA.

## APPLICATIONS

- High-speed switching
- Fast logic applications.

## DESCRIPTION

The PMLL4148L and PMLL4448 are high-speed switching diodes fabricated in planar technology, and encapsulated in small hermetically sealed glass SOD80C SMD packages. PMLL4148L was formerly named PMLL4148 and has no difference to this type in technical specification, processing, packing or labelling.



## LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{RRM}$	repetitive peak reverse voltage		–	100	V
$V_R$	continuous reverse voltage		–	75	V
$I_F$	continuous forward current	see Fig.2; note 1	–	200	mA
$I_{FRM}$	repetitive peak forward current		–	450	mA
$I_{FSM}$	non-repetitive peak forward current	square wave; $T_j = 25\text{ °C}$ prior to surge; see Fig.4 $t = 1\text{ }\mu\text{s}$ $t = 1\text{ ms}$ $t = 1\text{ s}$	– – –	4 1 0.5	A A A
$P_{tot}$	total power dissipation	$T_{amb} = 25\text{ °C}$ ; note 1	–	500	mW
$T_{stg}$	storage temperature		–65	+200	°C
$T_j$	junction temperature		–	200	°C

## Note

1. Device mounted on an FR4 printed-circuit board.

## High-speed diodes

## PMLL4148L; PMLL4448

**ELECTRICAL CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_F$	forward voltage PMLL4148L PMLL4448	see Fig.3 $I_F = 10\text{ mA}$	–	1	V
		$I_F = 5\text{ mA}$	620	720	mV
		$I_F = 100\text{ mA}$	–	1	V
$I_R$	reverse current	$V_R = 20\text{ V}$ ; see Fig.5		25	nA
		$V_R = 20\text{ V}$ ; $T_j = 150\text{ }^{\circ}\text{C}$ ; see Fig.5	–	50	$\mu\text{A}$
$I_R$	reverse current; PMLL4448	$V_R = 20\text{ V}$ ; $T_j = 100\text{ }^{\circ}\text{C}$ ; see Fig.5	–	3	$\mu\text{A}$
$C_d$	diode capacitance	$f = 1\text{ MHz}$ ; $V_R = 0$ ; see Fig.6		4	pF
$t_{rr}$	reverse recovery time	when switched from $I_F = 10\text{ mA}$ to $I_R = 60\text{ mA}$ ; $R_L = 100\text{ }\Omega$ ; measured at $I_R = 1\text{ mA}$ ; see Fig.7		4	ns
$V_{fr}$	forward recovery voltage	when switched from $I_F = 50\text{ mA}$ ; $t_r = 20\text{ ns}$ ; see Fig.8	–	2.5	V

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-tp}$	thermal resistance from junction to tie-point		300	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	350	K/W

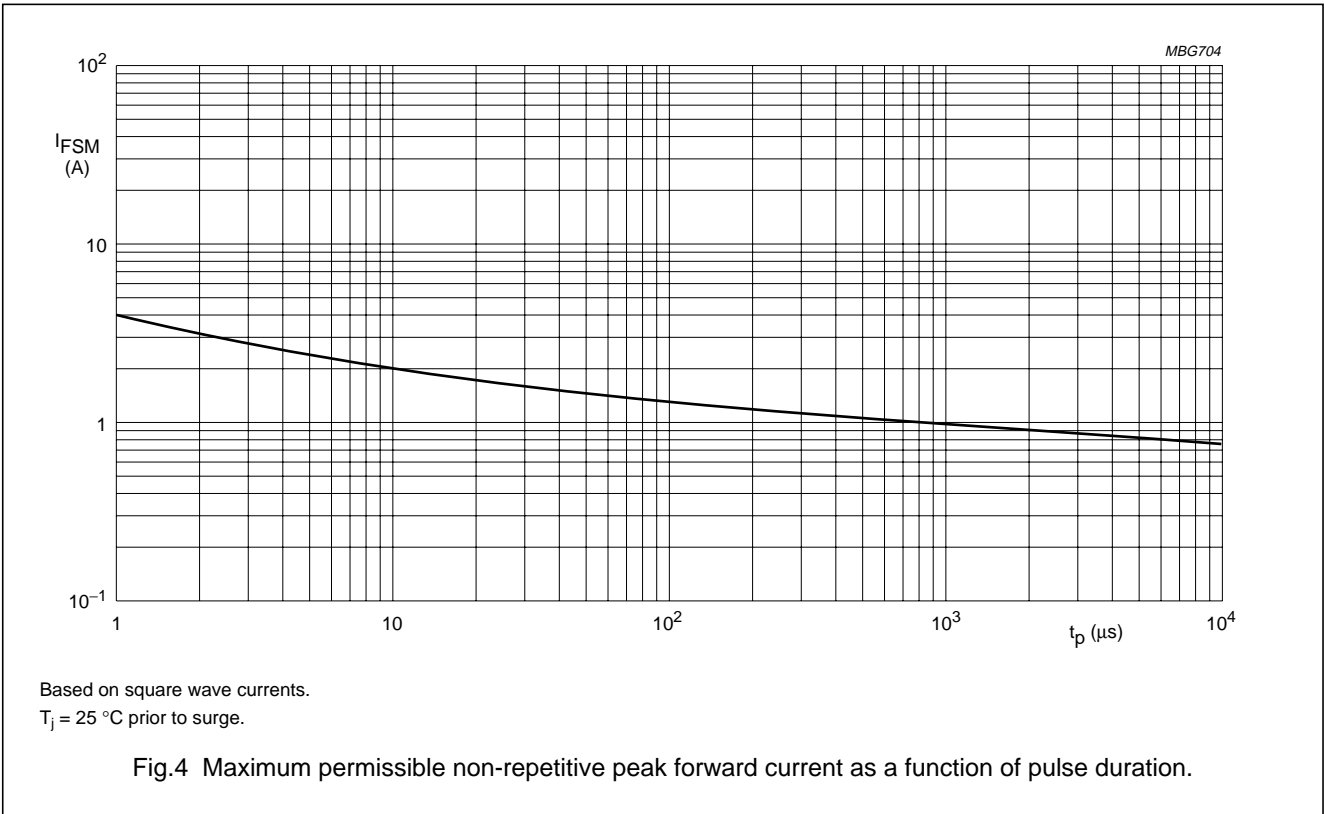
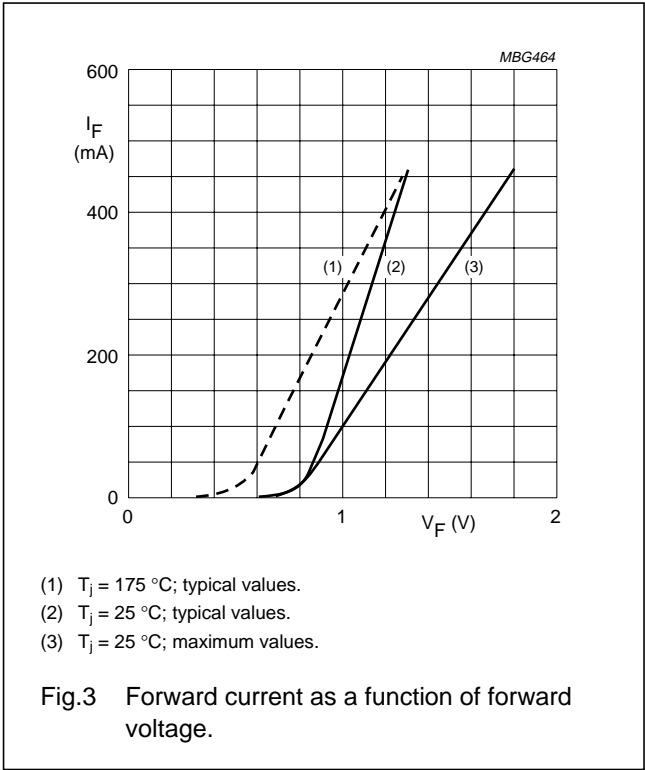
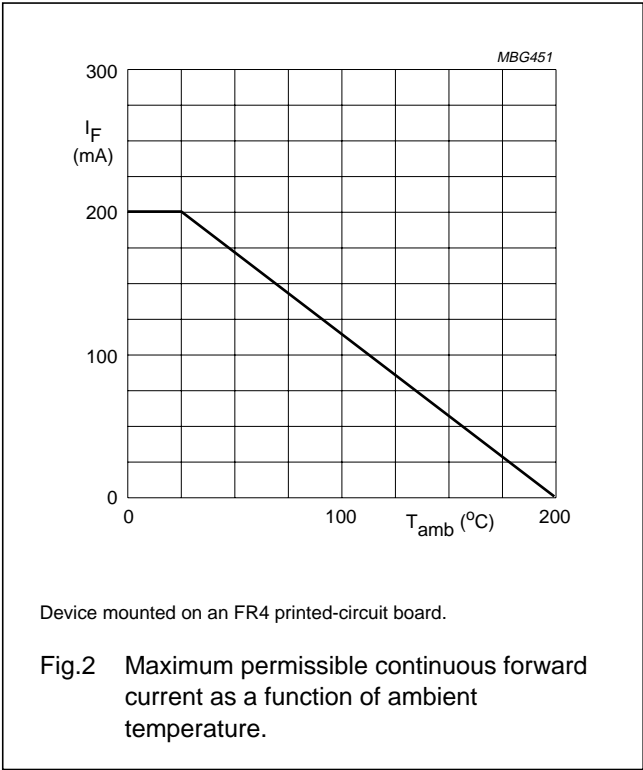
**Note**

1. Device mounted on an FR4 printed-circuit board.

High-speed diodes

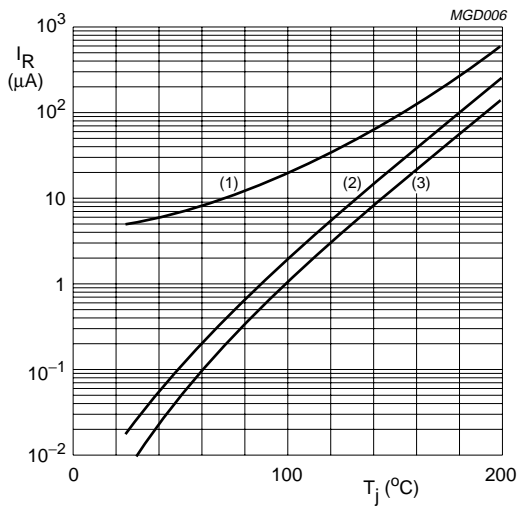
PMLL4148L; PMLL4448

GRAPHICAL DATA



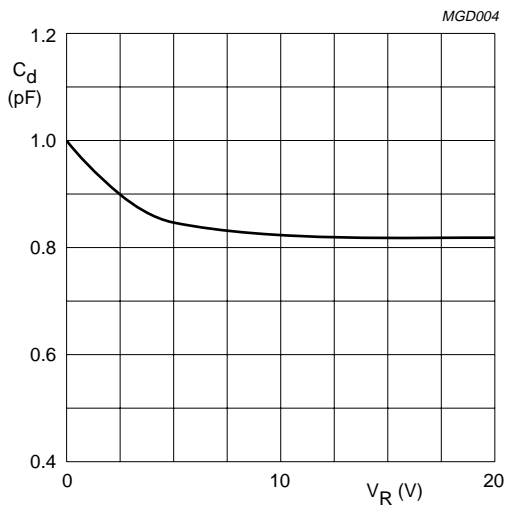
High-speed diodes

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- (1)  $V_R = 75 V$ ; maximum values.
- (2)  $V_R = 75 V$ ; typical values.
- (3)  $V_R = 20 V$ ; typical values.

Fig.5 Reverse current as a function of junction temperature.

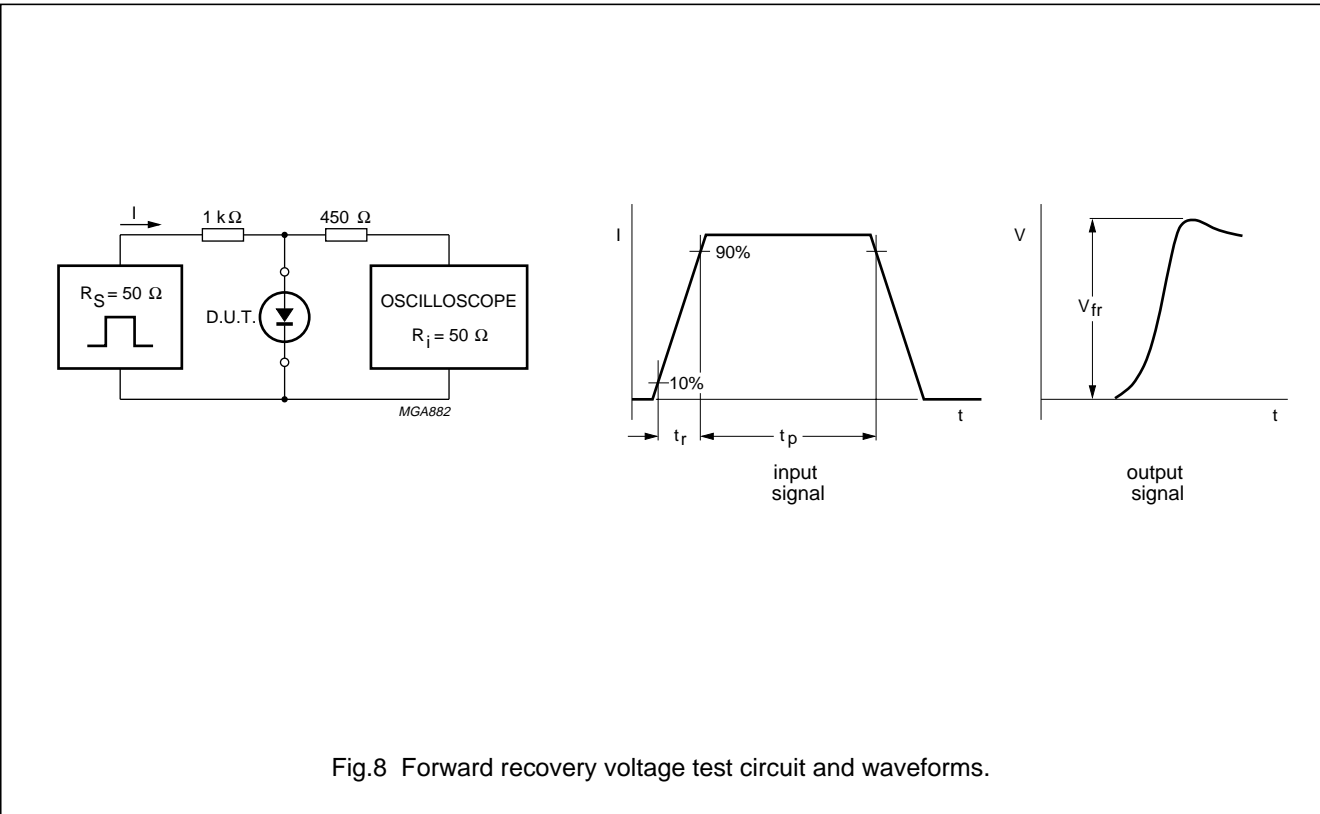
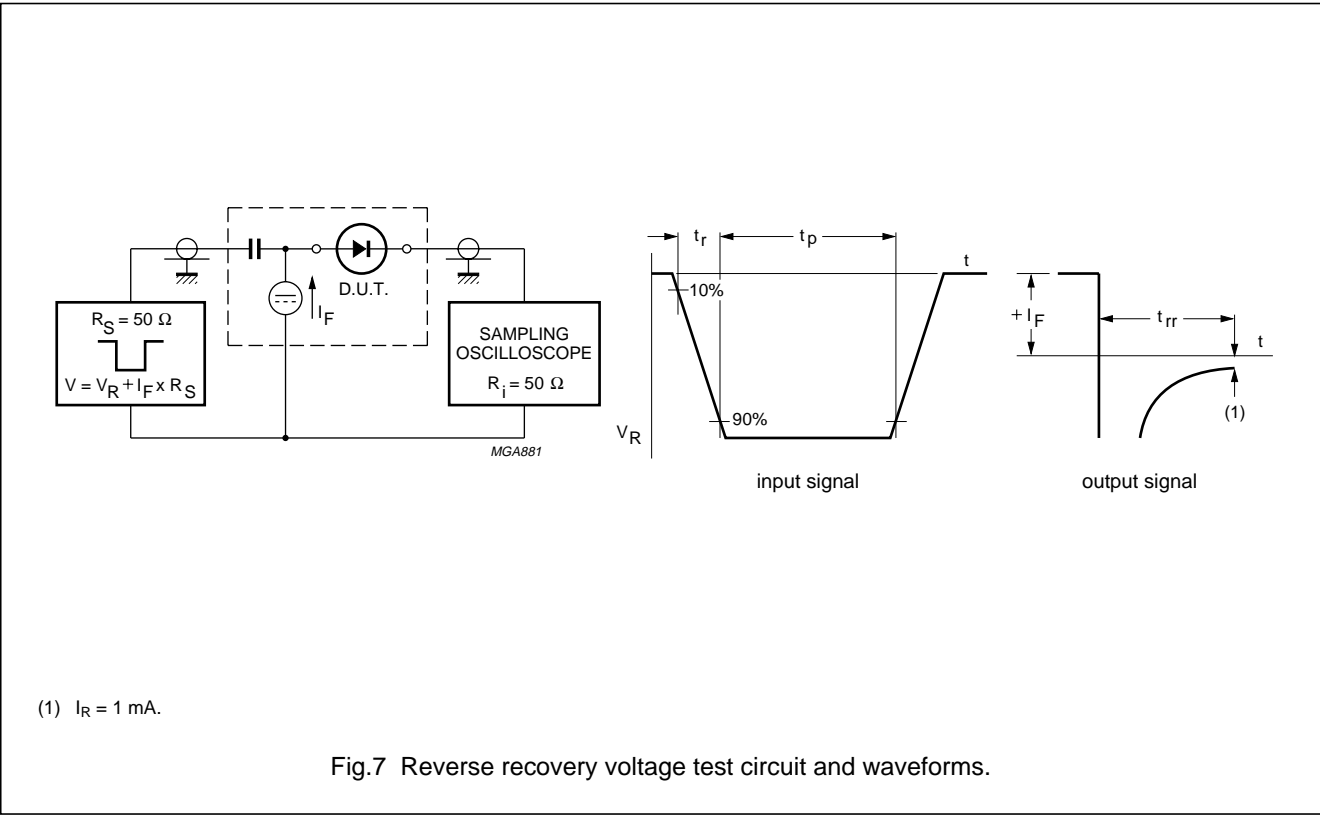


$f = 1 MHz$ ;  $T_j = 25^{\circ}C$ .

Fig.6 Diode capacitance as a function of reverse voltage; typical values.

High-speed diodes

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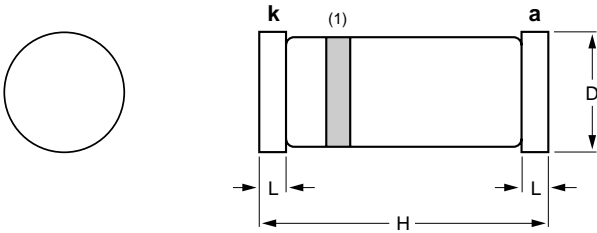
High-speed diodes

PMLL4148L; PMLL4448

PACKAGE OUTLINE

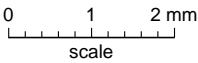
Hermetically sealed glass surface mounted package; 2 connectors

SOD80C



DIMENSIONS (mm are the original dimensions)

UNIT	D	H	L
mm	1.60 1.45	3.7 3.3	0.3



Note

1. The marking band indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOD80C	100H01					97-06-20

## High-speed diodes

## PMLL4148L; PMLL4448

## DATA SHEET STATUS

DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITIONS
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**NOTES**

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**NOTES**

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**NOTES**

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