

DATA SHEET



BYD167

Ultra fast low-loss rectifier

Product specification
Supersedes data of 1999 Feb 10

1999 Nov 11

Ultra fast low-loss rectifier

BYD167

FEATURES

- Glass passivated
- High maximum operating temperature
- Low leakage current
- Excellent stability
- Available in ammo-pack
- Smallest surface mount rectifier package.

DESCRIPTION

Cavity free cylindrical glass SOD87 package through Implotec™⁽¹⁾ technology. The SOD87 package is

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

(1) Implotec is a trademark of Philips.

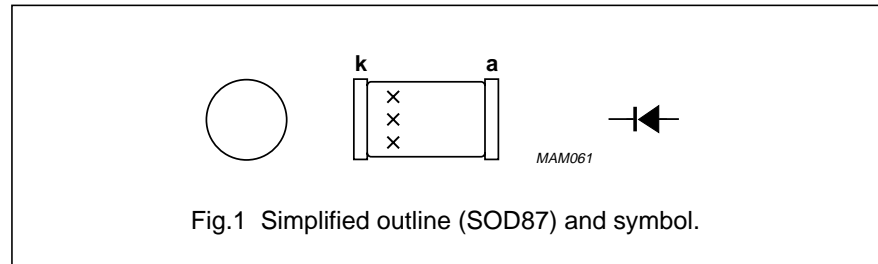


Fig.1 Simplified outline (SOD87) and symbol.

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{RRM}	repetitive peak reverse voltage		–	600	V
V_R	continuous reverse voltage		–	600	V
$I_{F(AV)}$	average forward current	$T_{tp} = 135\text{ °C}$; averaged over any 20 ms period; see Figs 5 and 6	–	1	A
		$T_{tp} = 70\text{ °C}$; averaged over any 20 ms period; see Figs 5 and 6	–	2	A
I_{FSM}	non-repetitive peak forward current	$t = 10\text{ ms}$ half sinewave; $V_R = V_{RRMmax}$	–	25	A
T_{stg}	storage temperature		–65	+175	°C
T_j	junction temperature		–65	+175	°C

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V_F	forward voltage	$I_F = 1\text{ A}$; $T_j = 150\text{ °C}$; see Fig.2	1.05	V
		$I_F = 1\text{ A}$; see Fig.2	1.25	V
I_R	reverse current	$V_R = V_{RRMmax}$; see Fig.3	5	μA
		$V_R = V_{RRMmax}$; $T_j = 150\text{ °C}$; see Fig.3	150	μA
t_{rr}	reverse recovery time	when switched from $I_F = 0.5\text{ A}$ to $I_R = 1\text{ A}$; measured at $I_R = 0.25\text{ A}$	50	ns

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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

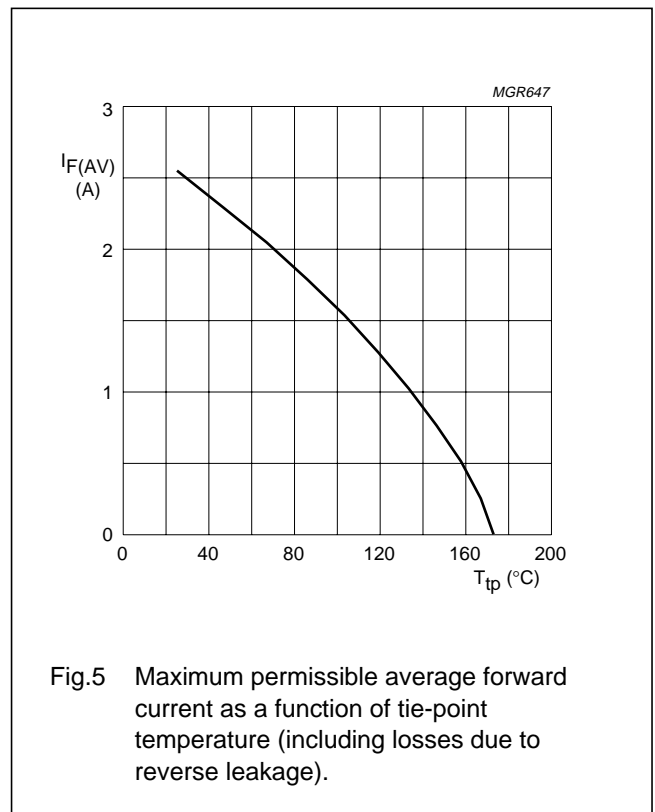
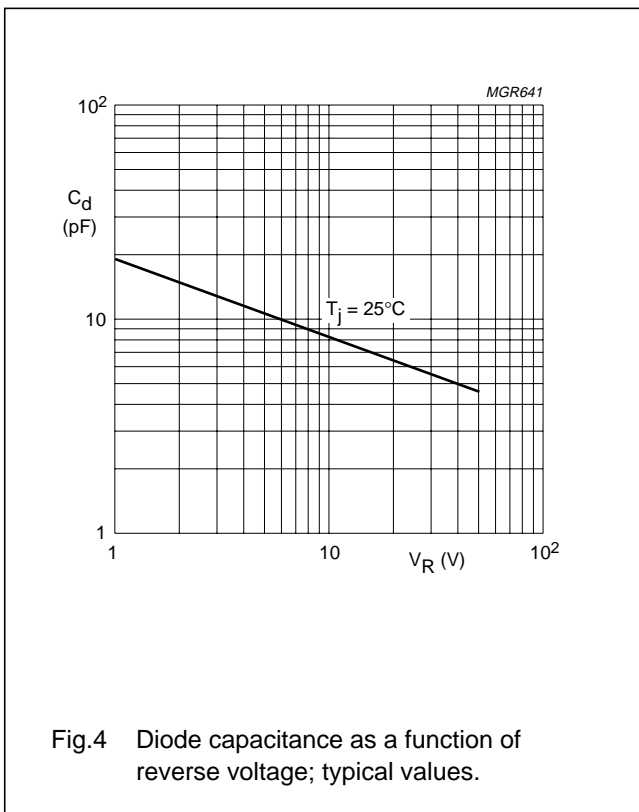
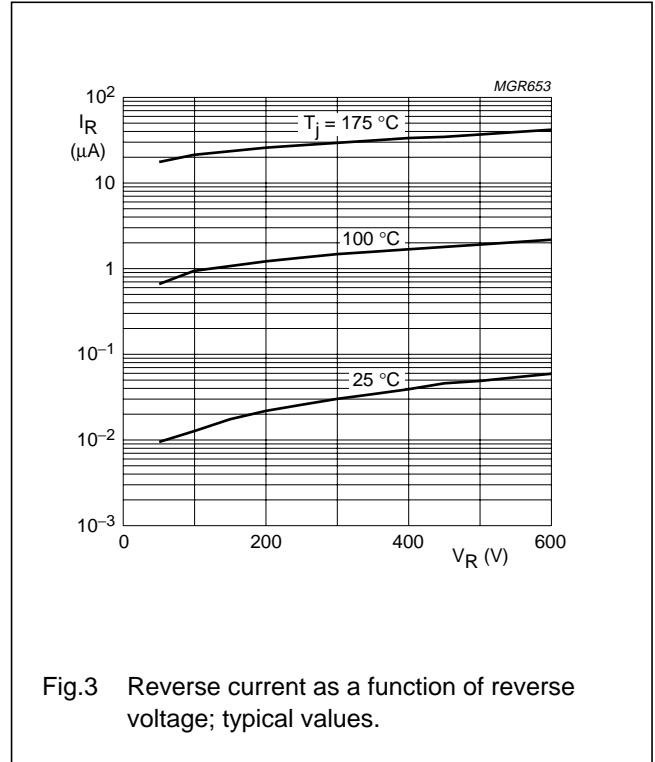
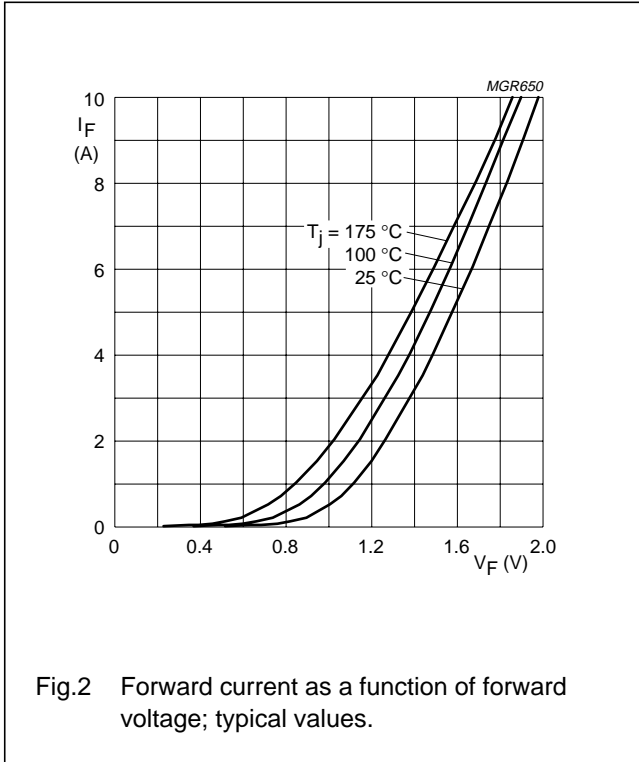
Note

1. Device mounted on epoxy-glass printed-circuit board, 1.5 mm thick; thickness of copper $\geq 40\ \mu\text{m}$, see Fig.7.
For more information please refer to the *"General Part of associated Handbook"*.

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GRAPHICAL DATA



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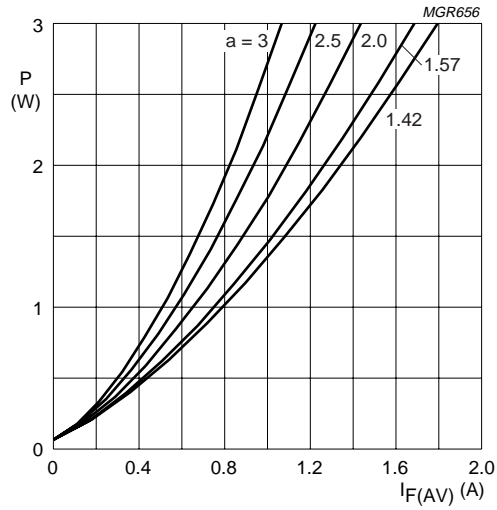
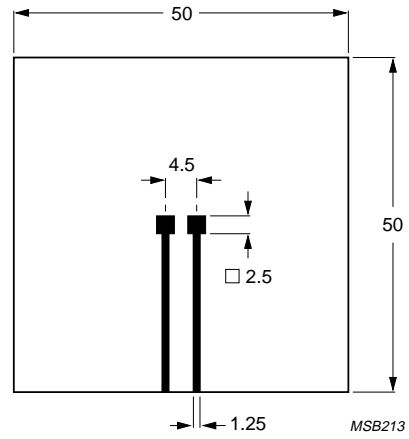


Fig.6 Maximum steady state power dissipation (forward plus leakage current losses, excluding switching losses) as a function of average forward current.



Dimensions in mm.

Fig.7 Printed-circuit board for surface mounting.

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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

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.	

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Philips Semiconductors – a worldwide company

Argentina: see South America

Australia: 3 Figtree Drive, HOME BUSH, NSW 2140,
Tel. +61 2 9704 8141, Fax. +61 2 9704 8139

Austria: Computerstr. 6, A-1101 WIEN, P.O. Box 213,
Tel. +43 1 60 101 1248, Fax. +43 1 60 101 1210

Belarus: Hotel Minsk Business Center, Bld. 3, r. 1211, Volodarski Str. 6,
220050 MINSK, Tel. +375 172 20 0733, Fax. +375 172 20 0773

Belgium: see The Netherlands

Brazil: see South America

Bulgaria: Philips Bulgaria Ltd., Energoproject, 15th floor,
51 James Bourchier Blvd., 1407 SOFIA,
Tel. +359 2 68 9211, Fax. +359 2 68 9102

Canada: PHILIPS SEMICONDUCTORS/COMPONENTS,
Tel. +1 800 234 7381, Fax. +1 800 943 0087

China/Hong Kong: 501 Hong Kong Industrial Technology Centre,
72 Tat Chee Avenue, Kowloon Tong, HONG KONG,
Tel. +852 2319 7888, Fax. +852 2319 7700

Colombia: see South America

Czech Republic: see Austria

Denmark: Sydhavnsgade 23, 1780 COPENHAGEN V,
Tel. +45 33 29 3333, Fax. +45 33 29 3905

Finland: Sinikalliontie 3, FIN-02630 ESPOO,
Tel. +358 9 615 800, Fax. +358 9 6158 0920

France: 51 Rue Carnot, BP317, 92156 SURESNES Cedex,
Tel. +33 1 4099 6161, Fax. +33 1 4099 6427

Germany: Hammerbrookstraße 69, D-20097 HAMBURG,
Tel. +49 40 2353 60, Fax. +49 40 2353 6300

Hungary: see Austria

India: Philips INDIA Ltd, Band Box Building, 2nd floor,
254-D, Dr. Annie Besant Road, Worli, MUMBAI 400 025,
Tel. +91 22 493 8541, Fax. +91 22 493 0966

Indonesia: PT Philips Development Corporation, Semiconductors Division,
Gedung Philips, Jl. Buncit Raya Kav.99-100, JAKARTA 12510,
Tel. +62 21 794 0040 ext. 2501, Fax. +62 21 794 0080

Ireland: Newstead, Clonskeagh, DUBLIN 14,
Tel. +353 1 7640 000, Fax. +353 1 7640 200

Israel: RAPAC Electronics, 7 Kehilat Saloniki St, PO Box 18053,
TEL AVIV 61180, Tel. +972 3 645 0444, Fax. +972 3 649 1007

Italy: PHILIPS SEMICONDUCTORS, Via Casati, 23 - 20052 MONZA (MI),
Tel. +39 039 203 6838, Fax +39 039 203 6800

Japan: Philips Bldg 13-37, Kohnan 2-chome, Minato-ku,
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Korea: Philips House, 260-199 Itaewon-dong, Yongsan-ku, SEOUL,
Tel. +82 2 709 1412, Fax. +82 2 709 1415

Malaysia: No. 76 Jalan Universiti, 46200 PETALING JAYA, SELANGOR,
Tel. +60 3 750 5214, Fax. +60 3 757 4880

Mexico: 5900 Gateway East, Suite 200, EL PASO, TEXAS 79905,
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Middle East: see Italy

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New Zealand: 2 Wagener Place, C.P.O. Box 1041, AUCKLAND,
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Norway: Box 1, Manglerud 0612, OSLO,
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Philippines: Philips Semiconductors Philippines Inc.,
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Metro MANILA, Tel. +63 2 816 6380, Fax. +63 2 817 3474

Poland: Al.Jerozolimskie 195 B, 02-222 WARSAW,
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Portugal: see Spain

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Russia: Philips Russia, Ul. Usatcheva 35A, 119048 MOSCOW,
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South Africa: S.A. PHILIPS Pty Ltd., 195-215 Main Road Martindale,
2092 JOHANNESBURG, P.O. Box 58088 Newville 2114,
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South America: Al. Vicente Pinzon, 173, 6th floor,
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Spain: Balmes 22, 08007 BARCELONA,
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Sweden: Kottbygatan 7, Akalla, S-16485 STOCKHOLM,
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Switzerland: Allmendstrasse 140, CH-8027 ZÜRICH,
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Taiwan: Philips Semiconductors, 6F, No. 96, Chien Kuo N. Rd., Sec. 1,
TAIPEI, Taiwan Tel. +886 2 2134 2886, Fax. +886 2 2134 2874

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Turkey: Yukari Dudullu, Org. San. Blg., 2.Cad. Nr. 28 81260 Umraniye,
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Ukraine: PHILIPS UKRAINE, 4 Patrice Lumumba str., Building B, Floor 7,
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United Kingdom: Philips Semiconductors Ltd., 276 Bath Road, Hayes,
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United States: 811 East Arques Avenue, SUNNYVALE, CA 94088-3409,
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Yugoslavia: PHILIPS, Trg N. Pasica 5/v, 11000 BEOGRAD,
Tel. +381 11 62 5344, Fax.+381 11 63 5777

For all other countries apply to: Philips Semiconductors,
International Marketing & Sales Communications, Building BE-p, P.O. Box 218,
5600 MD EINDHOVEN, The Netherlands, Fax. +31 40 27 24825

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