

Philips

Diode BYD167

Datasheet

Silicon Diode

BYD167

600V/1A

DATASHEET

OEM – Philips

Source: Philips Databook 1999

Ultra fast low-loss rectifiers**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.

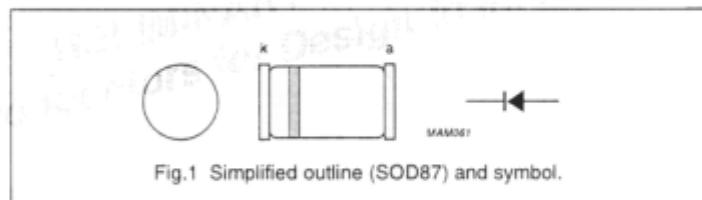


Fig.1 Simplified outline (SOD87) and symbol.

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	$T_{ip} = 135^\circ\text{C}$; averaged over any 20 ms period; see Figs 5 and 6		1	A
		$T_{ip} = 70^\circ\text{C}$; 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

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V_F	forward voltage	$I_F = 1 \text{ A}; T_j = 150^\circ\text{C}$; 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
		$V_R = V_{RRMmax}; T_j = 150^\circ\text{C}$; 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

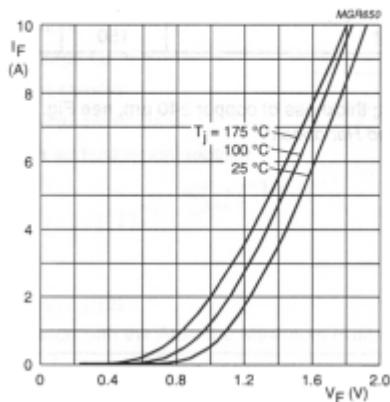


Fig.2 Forward current as a function of forward voltage; typical values.

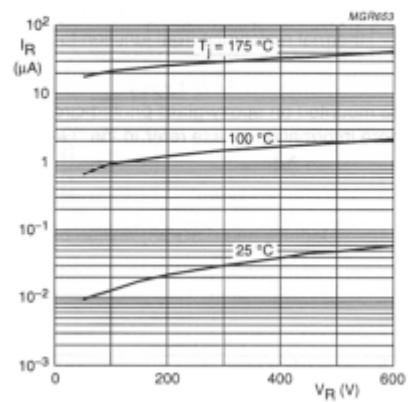


Fig.3 Reverse current as a function of reverse voltage; typical values.

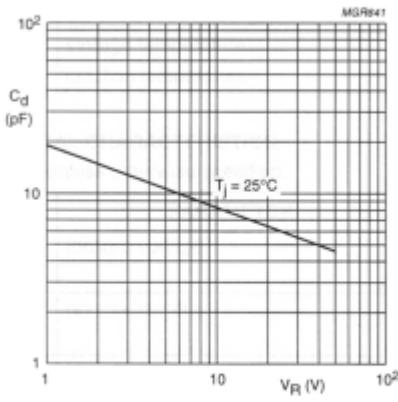


Fig.4 Diode capacitance as a function of reverse voltage; typical values.

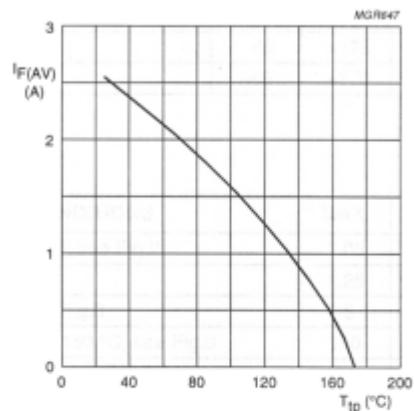


Fig.5 Maximum permissible average forward current as a function of tie-point temperature (including losses due to reverse leakage).

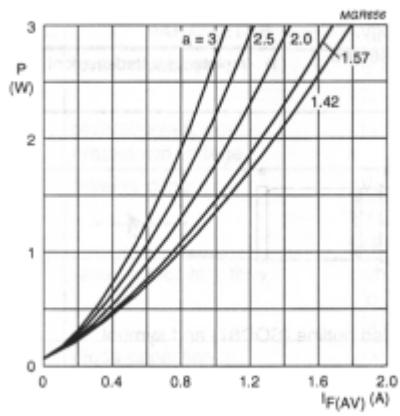
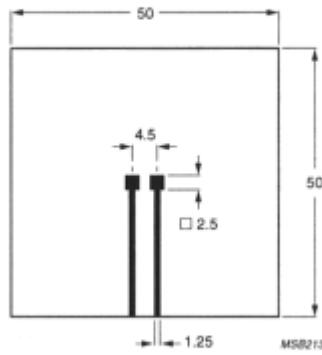
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Fig.6 Maximum steady state power dissipation (forward plus leakage current losses, excluding switching losses) as a function of average forward current.



Dimensions in mm.

Fig.7 Printed-circuit board for surface mounting.