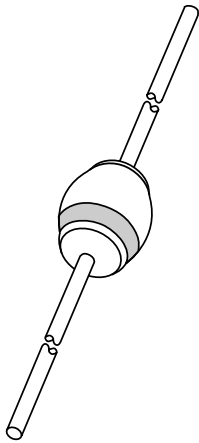


DATA SHEET



BYV160

Ultra fast low-loss rectifier

Product specification

2000 Feb 01

Ultra fast low-loss rectifier

BYV160

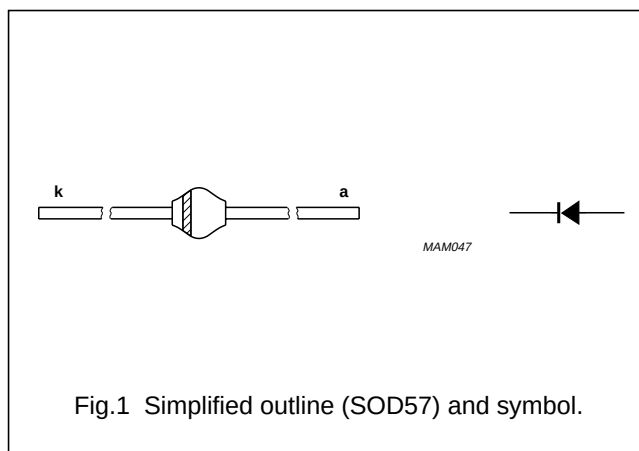
FEATURES

- Glass passivated
- High maximum operating temperature
- Low leakage current
- Excellent stability
- Available in ammo-pack.

DESCRIPTION

Rugged glass SOD57 package, using a high temperature alloyed construction.

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



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	$T_{tp} = 60\text{ °C}$; lead length = 10 mm; see Fig.5; averaged over any 20 ms period; see Fig.6	—	2	A
I_{FSM}	non-repetitive peak forward current	$t = 10\text{ ms}$ half sine wave; $T_j = 25\text{ °C}$; $V_R = V_{RRMmax}$	—	40	A
T_{stg}	storage temperature		−65	+175	°C
T_j	junction temperature	see Fig.7	−65	+175	°C

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V_F	forward voltage	$I_F = 2\text{ A}$; $T_j = T_{j\text{ max}}$; see Fig.2	1.00	V
		$I_F = 2\text{ A}$; see Fig.2	1.20	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

Ultra fast low-loss rectifier

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THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-tp}$	thermal resistance from junction to tie-point	lead length = 10 mm	46	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	100	K/W

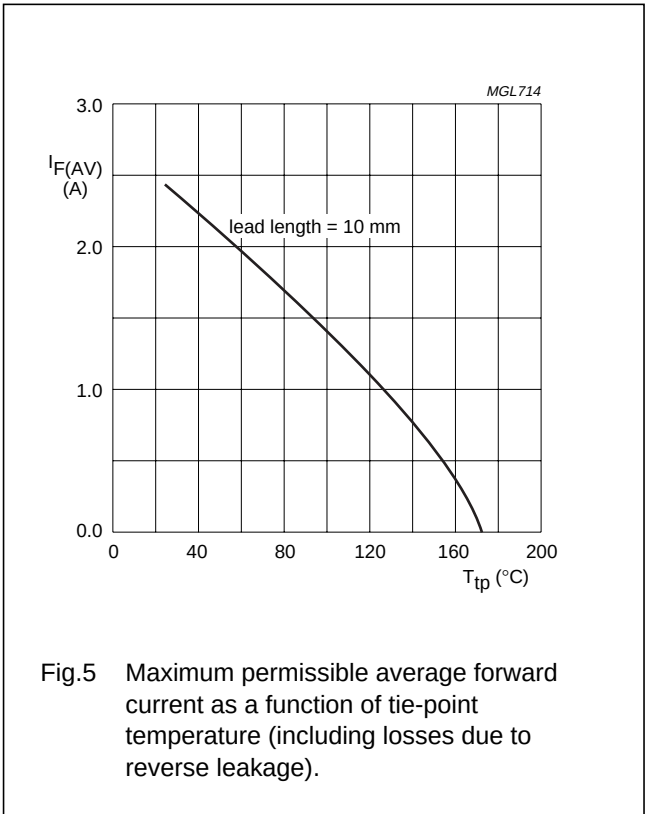
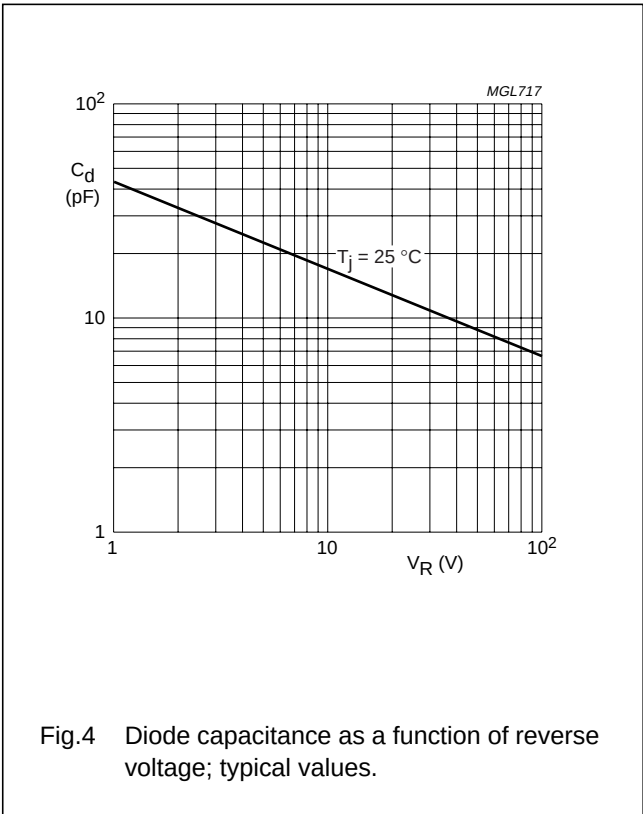
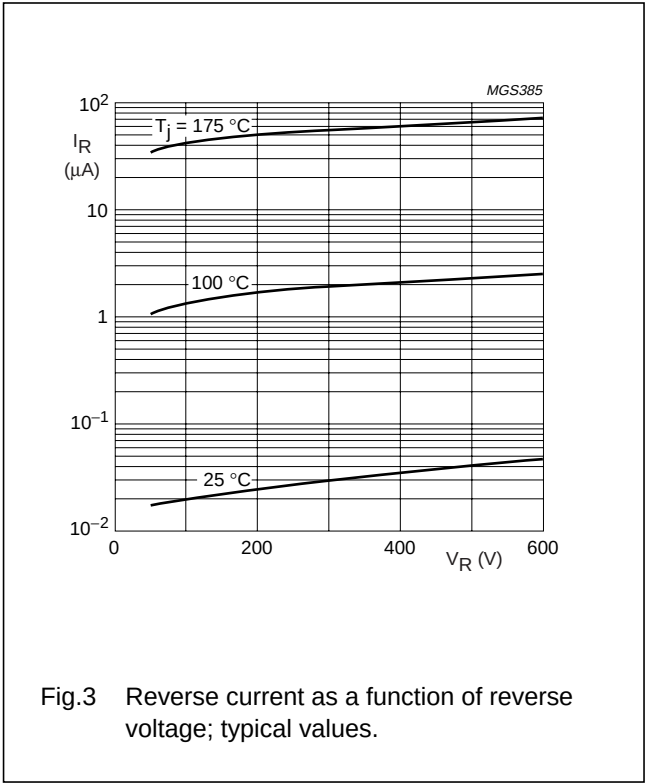
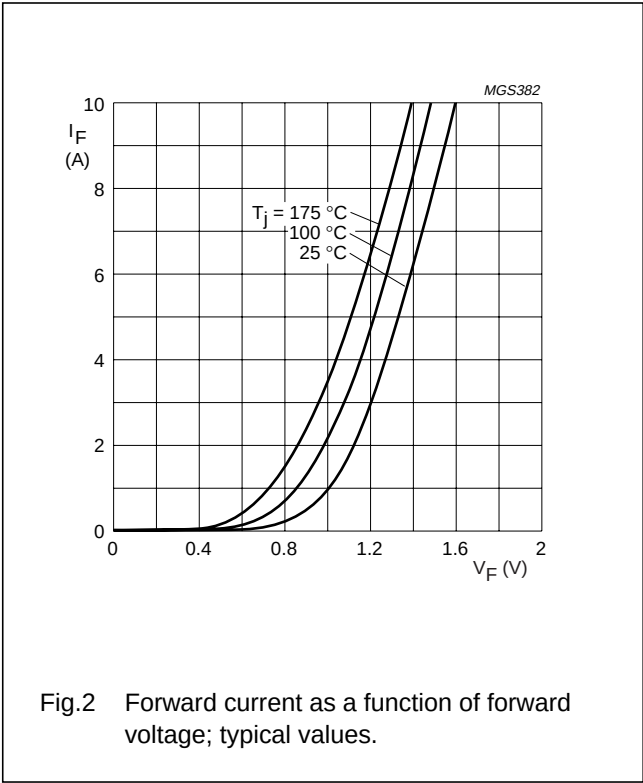
Note

1. Device mounted on an epoxy-glass printed-circuit board, 1.5 mm thick; thickness of Cu-layer $\geq 40\ \mu\text{m}$, see Fig.8.
For more information please refer to the '*General Part of associated Handbook*'.

Ultra fast low-loss rectifier

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GRAPHICAL DATA



Ultra fast low-loss rectifier

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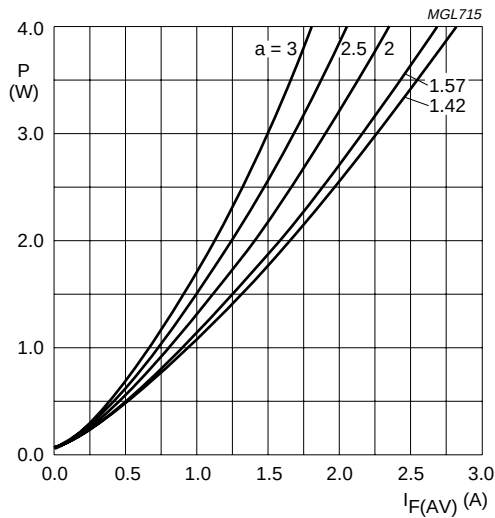
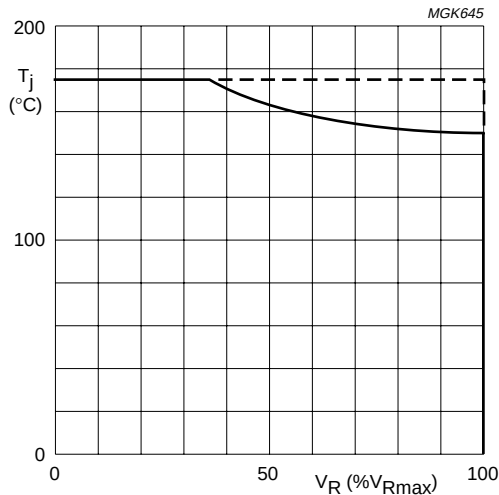
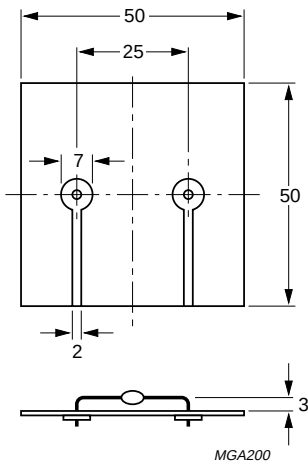


Fig.6 Maximum steady state power dissipation (forward plus leakage current losses, excluding switching losses) as a function of average forward current.



Solid line = V_R .
Dotted line = V_{RRM} ; $\delta = 0.5$.

Fig.7 Maximum permissible junction temperature as a function of maximum reverse voltage percentage.



Dimensions in mm.

Fig.8 Device mounted on a printed-circuit board.

Ultra fast low-loss rectifier

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PACKAGE OUTLINE

Hermetically sealed glass package; axial leaded; 2 leads

SOD57

DIMENSIONS (mm are the original dimensions)

UNIT	b max.	D max.	G max.	L min.
mm	0.81	3.81	4.57	28

0 2.5 5 mm
scale

Note
1. The marking band indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOD57						97-10-14

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.	

LIFE SUPPORT APPLICATIONS

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

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