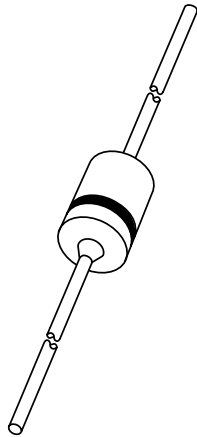


DATA SHEET



1N914 High-speed diode

Product specification
Supersedes data of 1996 Sep 03

1999 May 26

High-speed diode

1N914

FEATURES

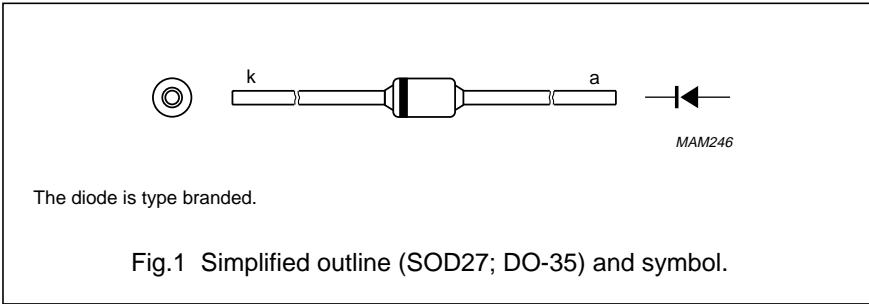
- Hermetically sealed leaded glass SOD27 (DO-35) package
- High switching speed: max. 4 ns
- Continuous reverse voltage: max. 75 V
- Repetitive peak reverse voltage: max. 100 V
- Repetitive peak forward current: max. 225 mA.

APPLICATIONS

- High-speed switching.

DESCRIPTION

The 1N914 is a high-speed switching diode fabricated in planar technology, and encapsulated in a hermetically sealed leaded glass SOD27 (DO-35) package.



LIMITING VALUES

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

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	–	75	mA
I _{FRM}	repetitive peak forward current		–	225	mA
I _{FSM}	non-repetitive peak forward current	square wave; T _j = 25 °C prior to surge; see Fig.4			
		t = 1 μs	–	4	A
		t = 1 ms	–	1	A
		t = 1 s	–	0.5	A
P _{tot}	total power dissipation	T _{amb} = 25 °C; note 1	–	250	mW
T _{stg}	storage temperature		–65	+200	°C
T _j	junction temperature		–	175	°C

Note

1. Device mounted on an FR4 printed circuit-board; lead length 10 mm.

High-speed diode

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V_F	forward voltage	$I_F = 10\text{ mA}$; see Fig.3	1	V
I_R	reverse current	see Fig.5 $V_R = 20\text{ V}$ $V_R = 75\text{ V}$ $V_R = 20\text{ V}$; $T_j = 150\text{ }^{\circ}\text{C}$	25 5 50	nA μA μA
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 $I_R = 10\text{ mA}$; $R_L = 100\text{ }\Omega$; measured at $I_R = 1\text{ mA}$; see Fig.7	8	ns
		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	lead length 10 mm	240	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient	lead length 10 mm; note 1	500	K/W

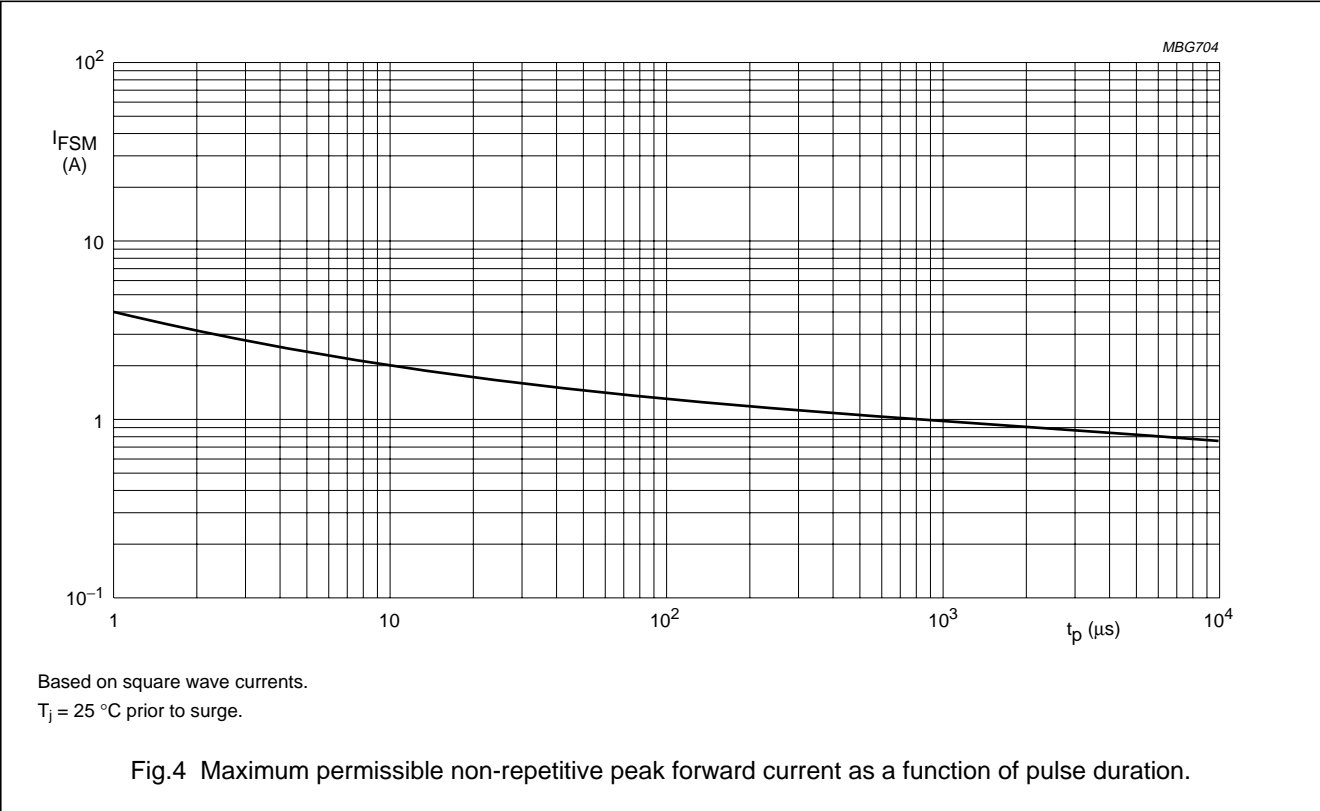
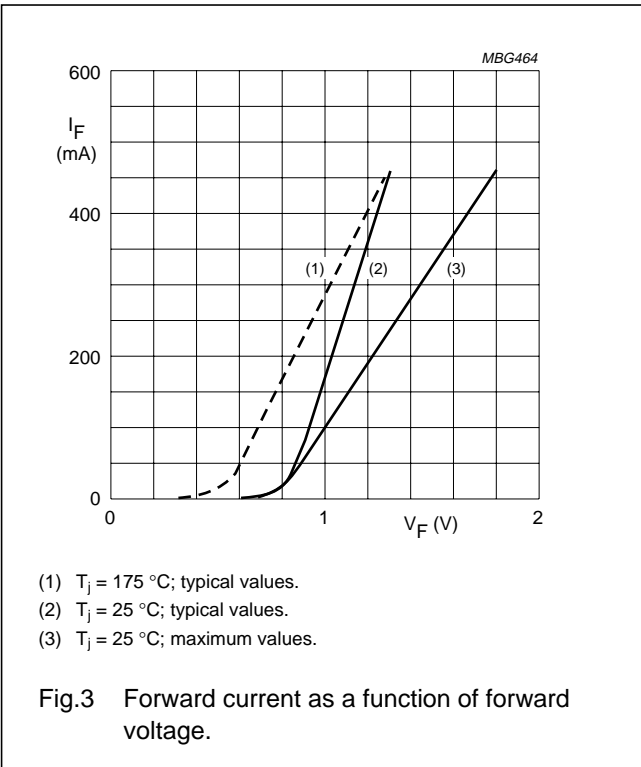
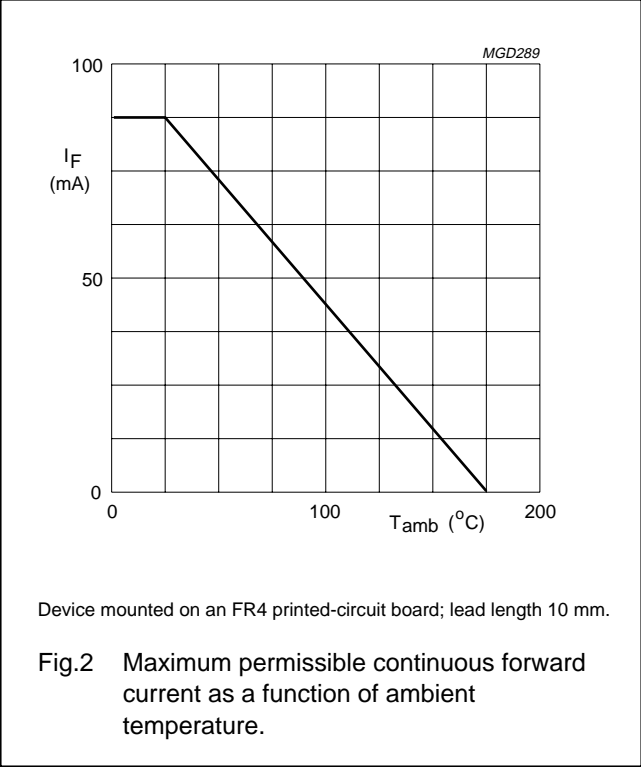
Note

1. Device mounted on a printed circuit-board without metallization pad.

High-speed diode

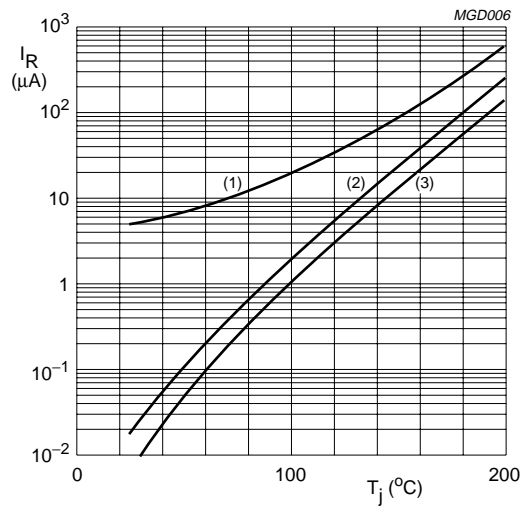
1N914

GRAPHICAL DATA



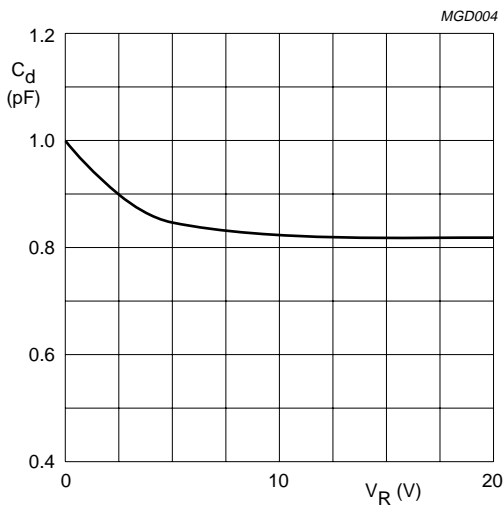
High-speed diode

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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.

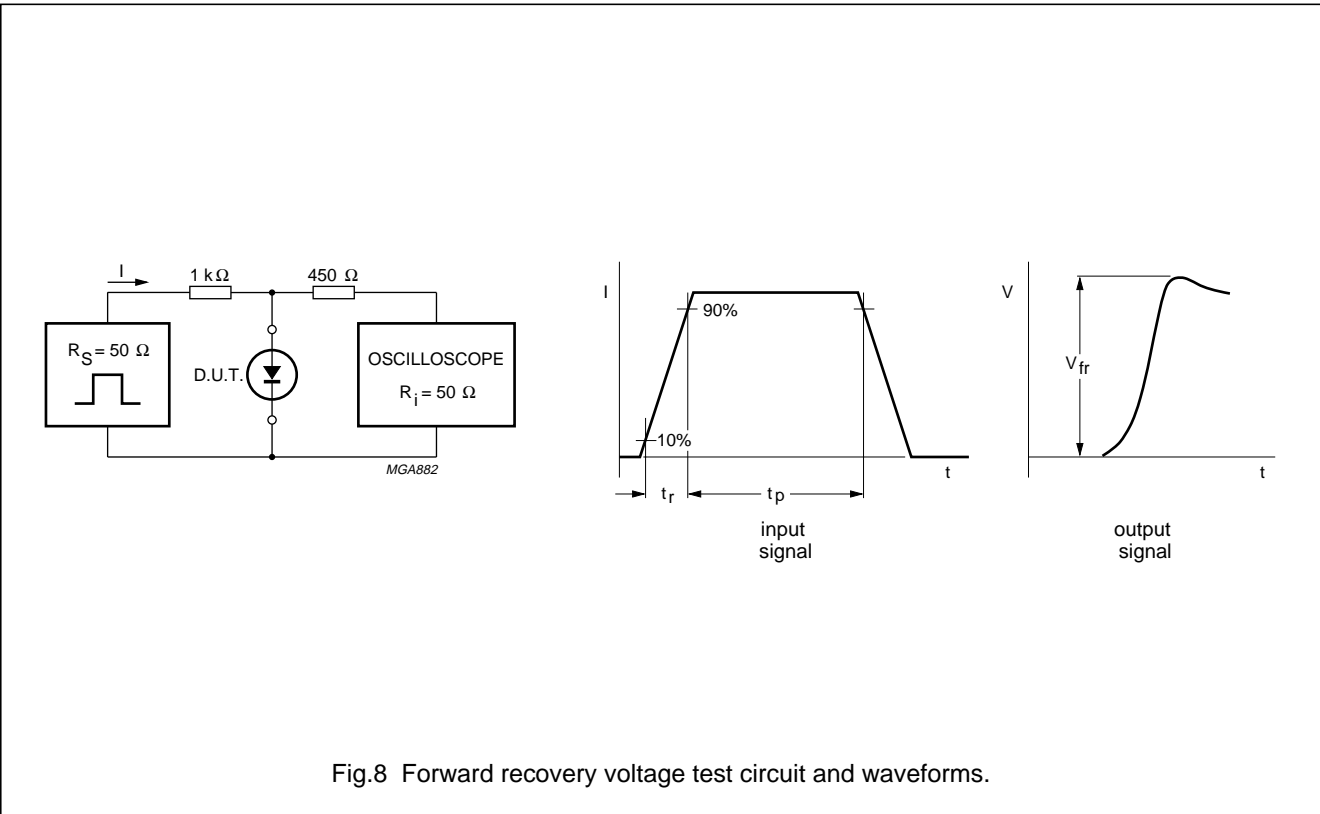
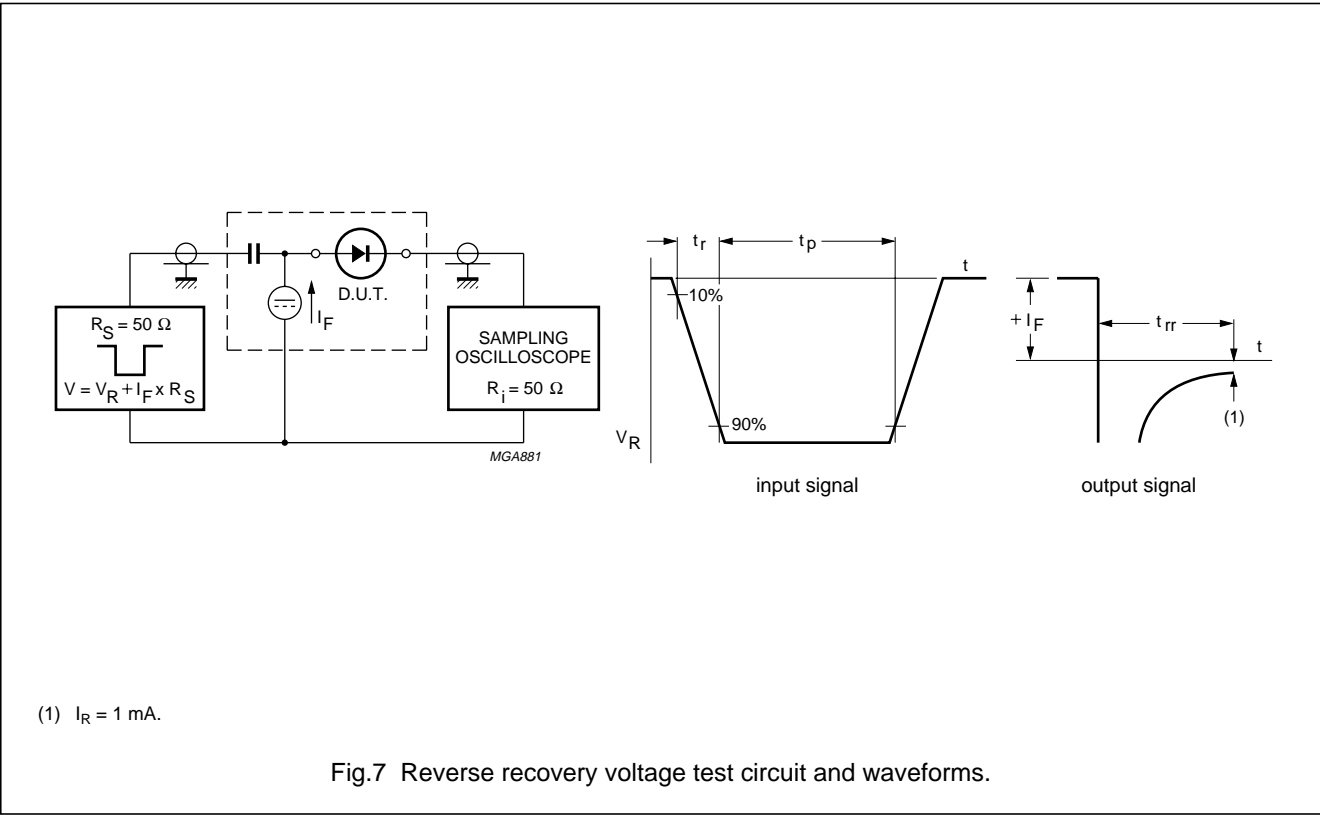


$f = 1$ MHz; $T_J = 25$ $^{\circ}C$.

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

High-speed diode

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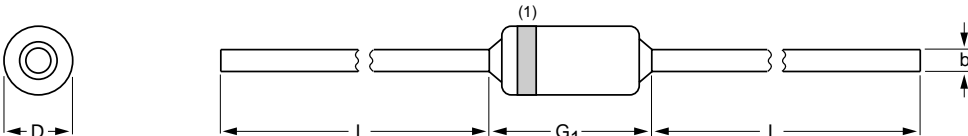
High-speed diode

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PACKAGE OUTLINE

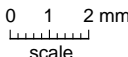
Hermetically sealed glass package; axial leaded; 2 leads

SOD27




DIMENSIONS (mm are the original dimensions)

UNIT	b max.	D max.	G ₁ max.	L min.
mm	0.56	1.85	4.25	25.4



Note

1. The marking band indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOD27	A24	DO-35	SC-40			97-06-09

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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