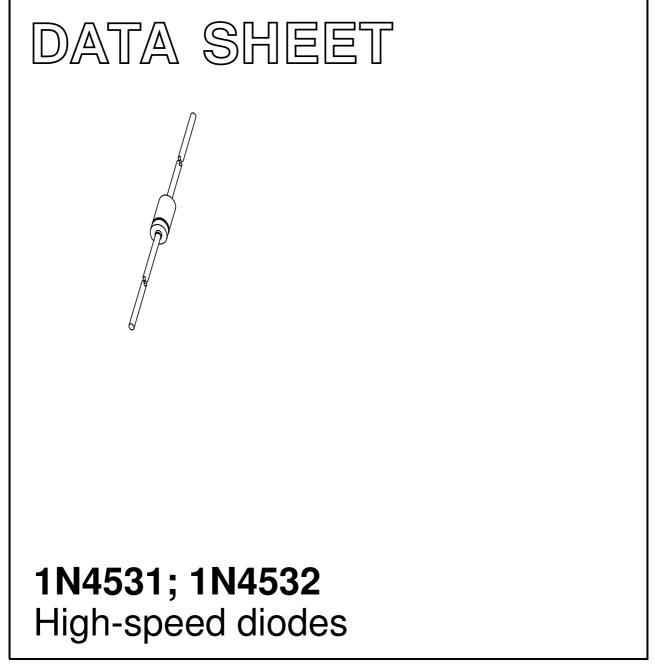
## DISCRETE SEMICONDUCTORS



Product data sheet Supersedes data of April 1996 1996 Sep 03



### Product data sheet

## **High-speed diodes**

## 1N4531; 1N4532

### FEATURES

- Hermetically sealed leaded glass
  SOD68 (DO-34) package
- High switching speed: max. 4 ns
- Continuous reverse voltage: max. 75 V
- Repetitive peak reverse voltage: max. 75 V
- Repetitive peak forward current: max. 450 mA.

### **APPLICATIONS**

- High-speed switching
- Protection diodes in reed relays.

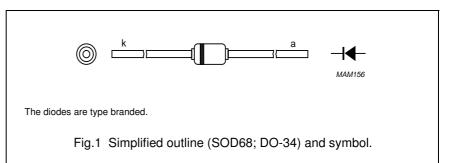
### LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>RRM</sub>	repetitive peak reverse voltage		-	75	V
V <sub>R</sub>	continuous reverse voltage		_	75	V
I <sub>F</sub>	continuous forward current see Fig.2		_	200	mA
I <sub>FRM</sub>	repetitive peak forward current		_	450	mA
I <sub>FSM</sub>	non-repetitive peak forward current	square wave; T <sub>j</sub> = 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 <sub>tot</sub>	total power dissipation	T <sub>amb</sub> = 25 °C	_	500	mW
T <sub>stg</sub>	storage temperature		-65	+200	°C
Tj	junction temperature		_	200	°C

#### DESCRIPTION

The 1N4531, 1N4532 are high-speed switching diodes fabricated in planar technology, and encapsulated in hermetically sealed leaded glass SOD68 (DO-34) packages.



# 1N4531; 1N4532

## ELECTRICAL CHARACTERISTICS

## $T_j$ = 25 °C; unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>F</sub>	forward voltage	I <sub>F</sub> = 10 mA; see Fig.3	_	1000	mV
I <sub>R</sub>	reverse current	see Fig.5			
	IN4531	V <sub>R</sub> = 20 V	_	25	nA
		V <sub>R</sub> = 20 V; T <sub>j</sub> = 150 °C	_	50	μA
	IN4532	V <sub>R</sub> = 50 V	_	100	nA
		V <sub>R</sub> = 50 V; T <sub>j</sub> = 150 °C	_	100	μA
C <sub>d</sub>	diode capacitance	$f = 1 \text{ MHz}; V_R = 0; \text{ see Fig.6}$			
	IN4531		_	4	pF
	IN4532		_	2	pF
t <sub>rr</sub>	reverse recovery time	when switched from $I_F = 10$ mA to			
	IN4531	$I_R = 60 \text{ mA}; R_L = 100 \Omega; \text{measured}$	_	4	ns
	IN4532	at I <sub>R</sub> = 1 mA; see Fig.7	_	2	ns
	reverse recovery time	when switched from $I_F = 10$ mA to			
	IN4532	$I_R = 10 \text{ mA}; R_L = 100 \Omega; \text{measured}$ at $I_R = 1 \text{ mA}; \text{see Fig.7}$	-	4	ns
V <sub>fr</sub>	forward recovery voltage	when switched from $I_F$ = 100 mA; $t_r \leq$ 30 ns; see Fig.8	_	3	V

### THERMAL CHARACTERISTICS

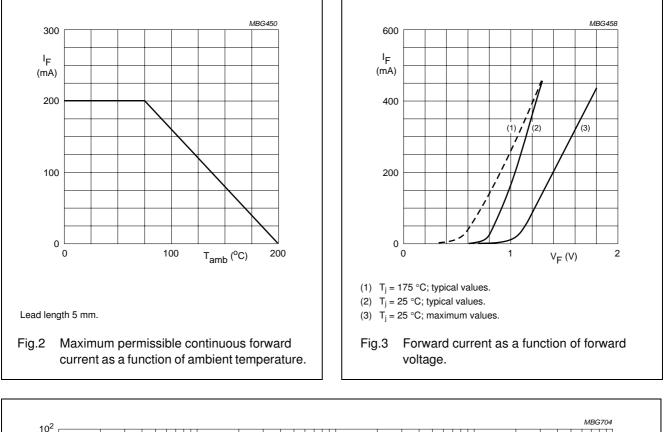
SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R <sub>th j-tp</sub>	thermal resistance from junction to tie-point	lead length 5 mm	120	K/W
R <sub>th j-a</sub>	thermal resistance from junction to ambient	lead length 5 mm; note 1	350	K/W

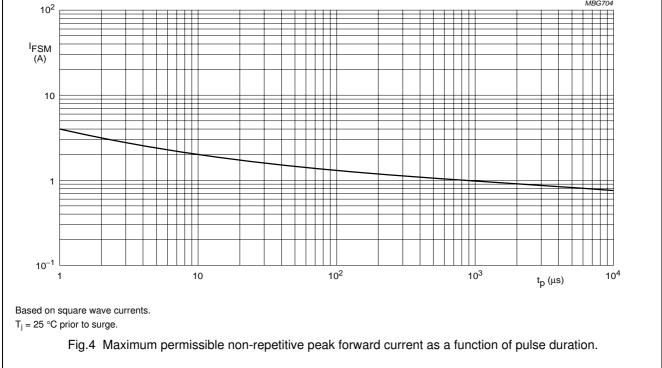
### Note

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

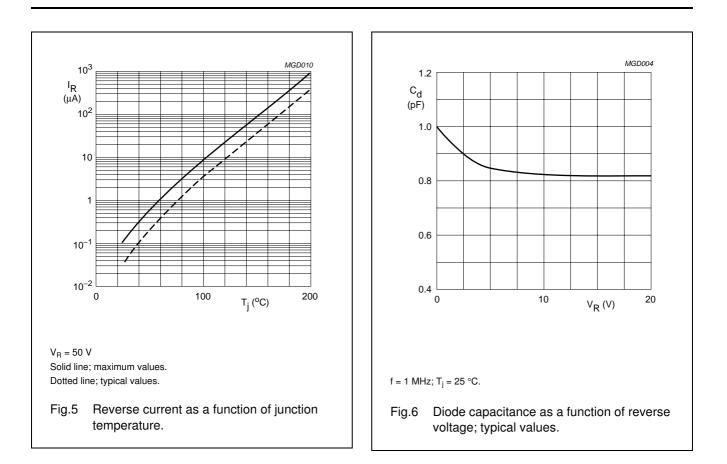
## 1N4531; 1N4532

### **GRAPHICAL DATA**

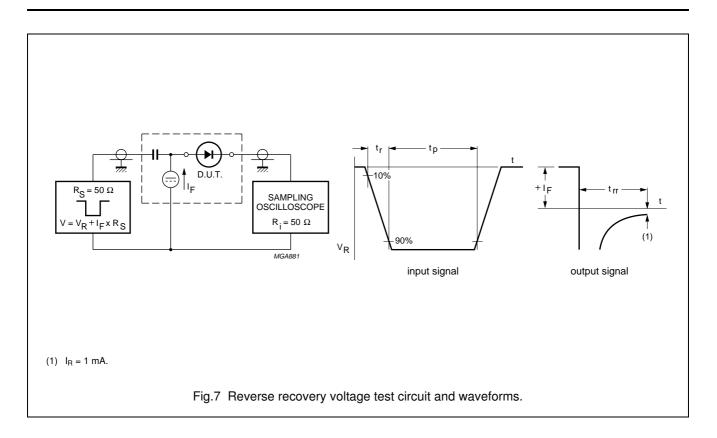


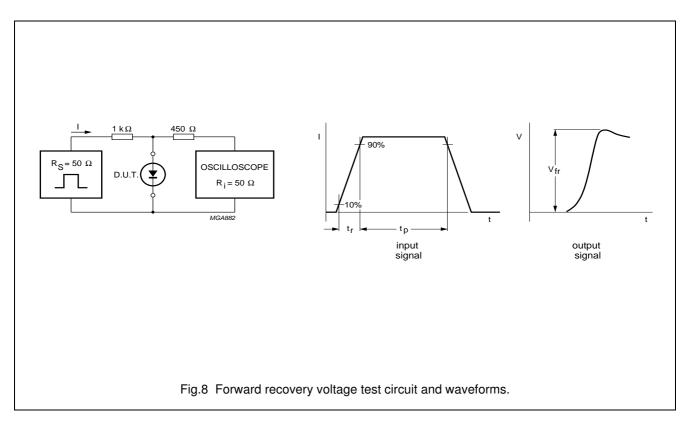


## 1N4531; 1N4532



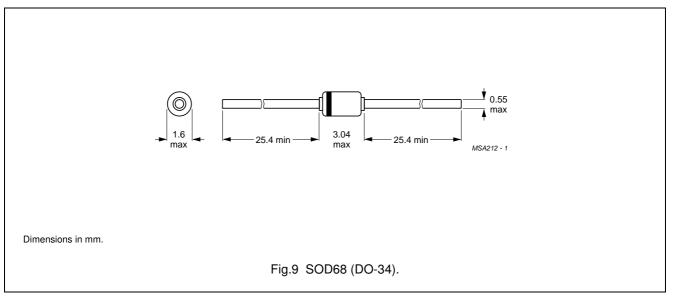
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# 1N4531; 1N4532

### PACKAGE OUTLINE



## 1N4531; 1N4532

## DATA SHEET STATUS

DOCUMENT STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

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## NXP Semiconductors

### **Customer notification**

This data sheet was changed to reflect the new company name NXP Semiconductors. No changes were made to the content, except for the legal definitions and disclaimers.

#### **Contact information**

For additional information please visit: http://www.nxp.com For sales offices addresses send e-mail to: salesaddresses@nxp.com

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