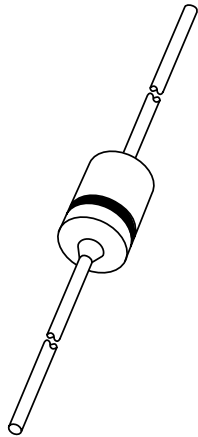


DATA SHEET



1N914; 1N914A; 1N914B High-speed diodes

Product specification
Supersedes data of 1999 May 26

2003 Jun 06

High-speed diodes

1N914; 1N914A; 1N914B

FEATURES

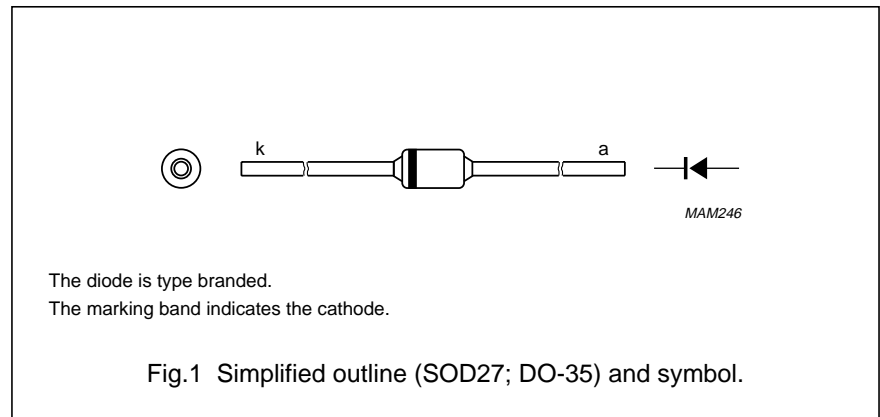
- Hermetically sealed leaded glass SOD27 (DO-35) package
- High switching speed: max. 4 ns
- Continuous reverse voltage: max. 75 V
- Repetitive peak reverse voltage: max. 100 V
- Repetitive peak forward current: max. 225 mA.

APPLICATIONS

- High-speed switching.

DESCRIPTION

The 1N914, 1N914A and 1N914B are high-speed switching diodes 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 60134).

| 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; $T_j = 25\text{ °C}$ prior to surge; see Fig.4 $t = 1\ \mu\text{s}$ $t = 1\ \text{ms}$ $t = 1\ \text{s}$ | – | 4 1 0.5 | A A A |
| P_{tot} | total power dissipation | $T_{amb} = 25\text{ °C}$; 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 diodes

1N914; 1N914A; 1N914B

ELECTRICAL CHARACTERISTICST_j = 25 °C; unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-----------------|--------------------------|---|------|------|------|
| V _F | forward voltage | see Fig.3 | | | |
| | 1N914; 1N914A | I _F = 10 mA | – | 1 | V |
| | 1N914B | I _F = 5 mA | 0.62 | 0.72 | V |
| | 1N914B | I _F = 100 mA | – | 1 | V |
| I _R | reverse current | see Fig.5 | | | |
| | | V _R = 20 V | – | 25 | nA |
| | | V _R = 75 V | – | 5 | μA |
| | | V _R = 20 V; T _j = 150 °C | – | 50 | μA |
| C _d | diode capacitance | f = 1 MHz; V _R = 0; see Fig.6 | – | 4 | pF |
| t _{rr} | reverse recovery time | when switched from I _F = 10 mA to I _R = 10 mA; R _L = 100 Ω; measured at I _R = 1 mA; see Fig.7 | – | 8 | ns |
| | | when switched from I _F = 10 mA to I _R = 60 mA; R _L = 100 Ω; measured at I _R = 1 mA; see Fig.7 | – | 4 | ns |
| V _{fr} | forward recovery voltage | when switched from I _F = 50 mA; t _r = 20 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 |

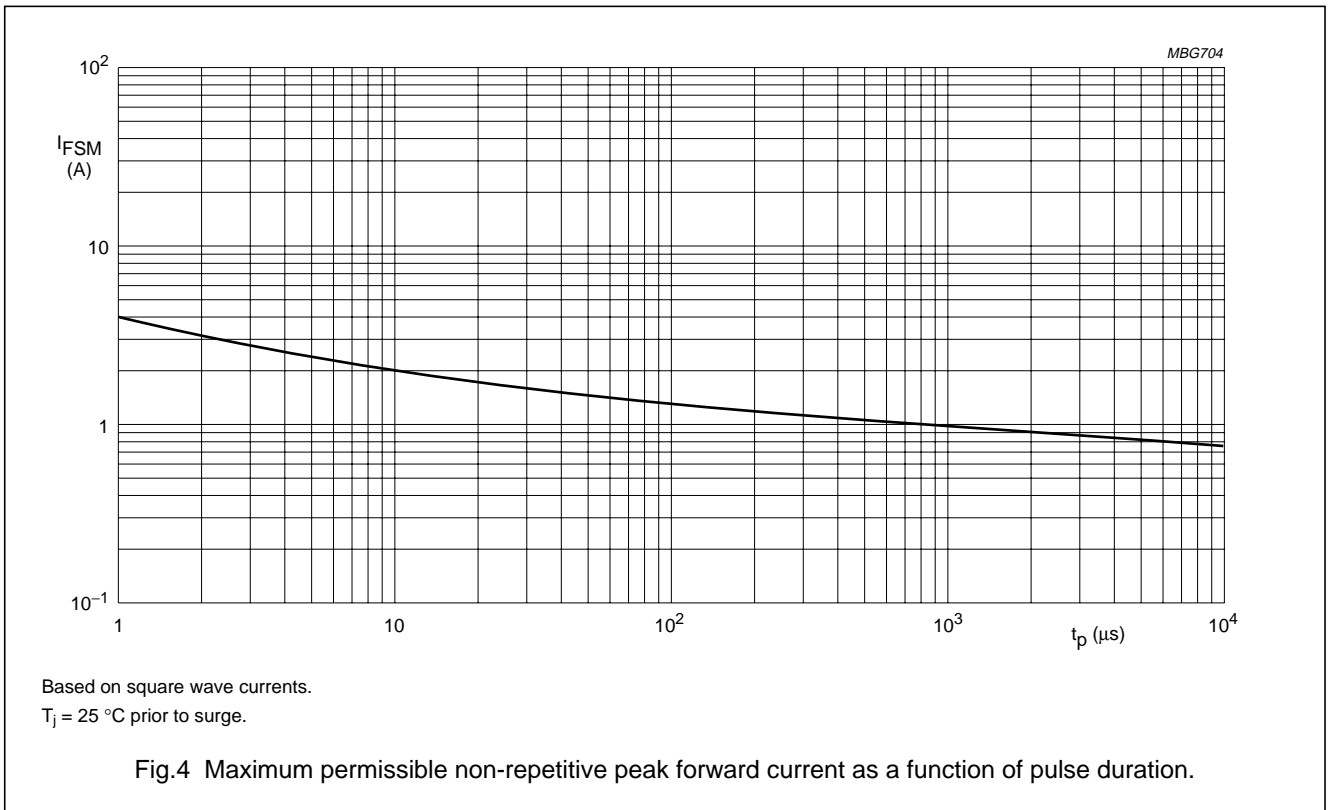
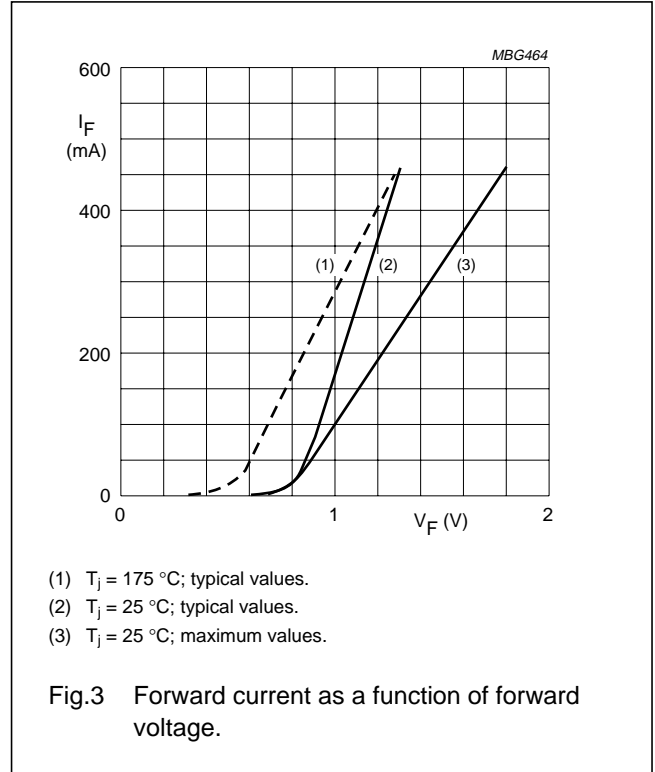
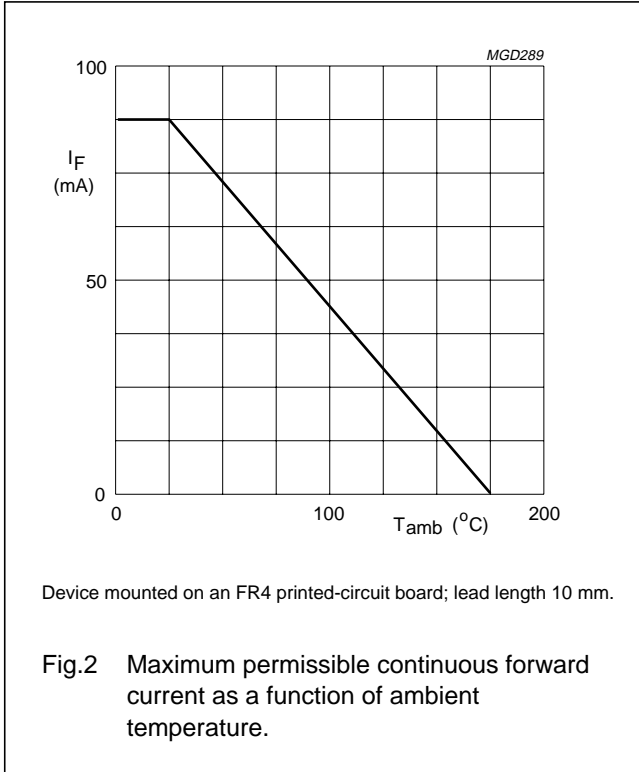
Note

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

High-speed diodes

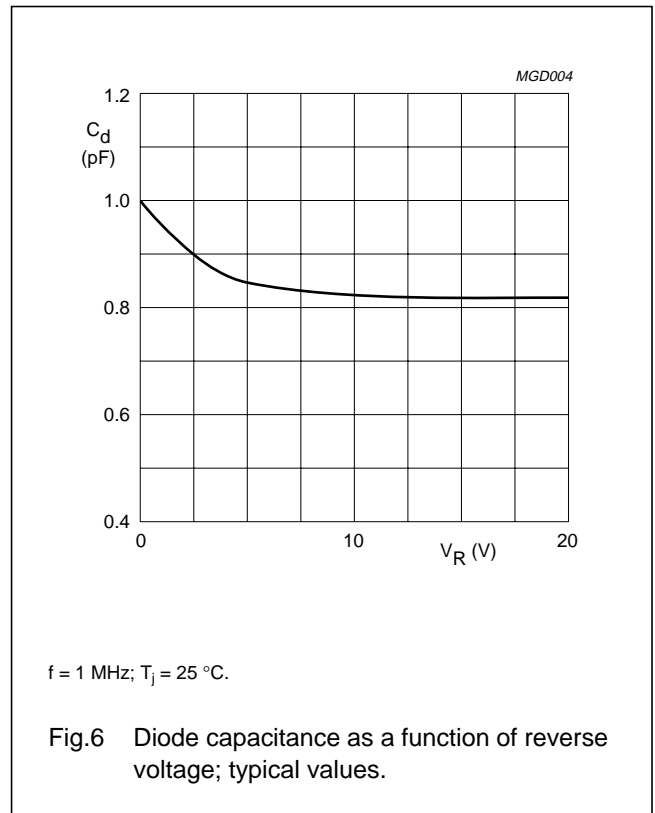
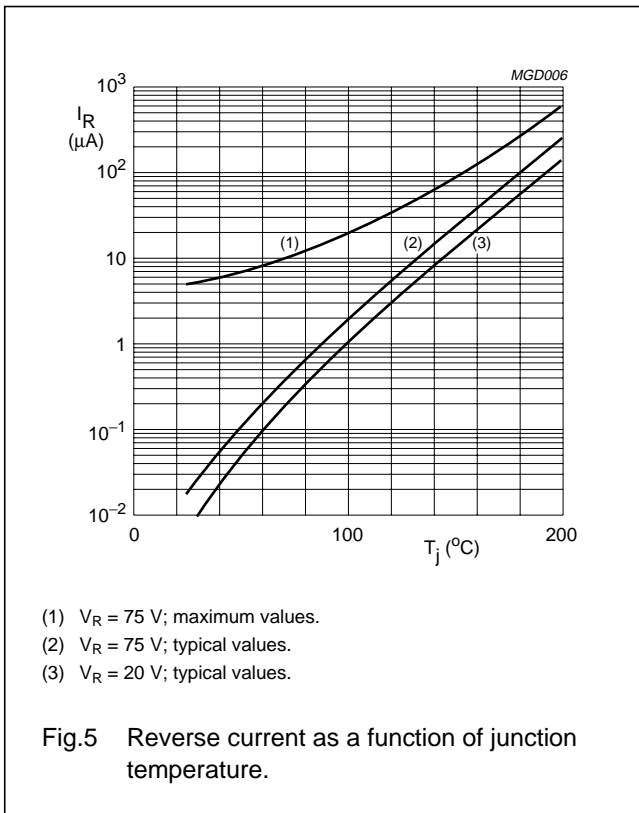
1N914; 1N914A; 1N914B

GRAPHICAL DATA



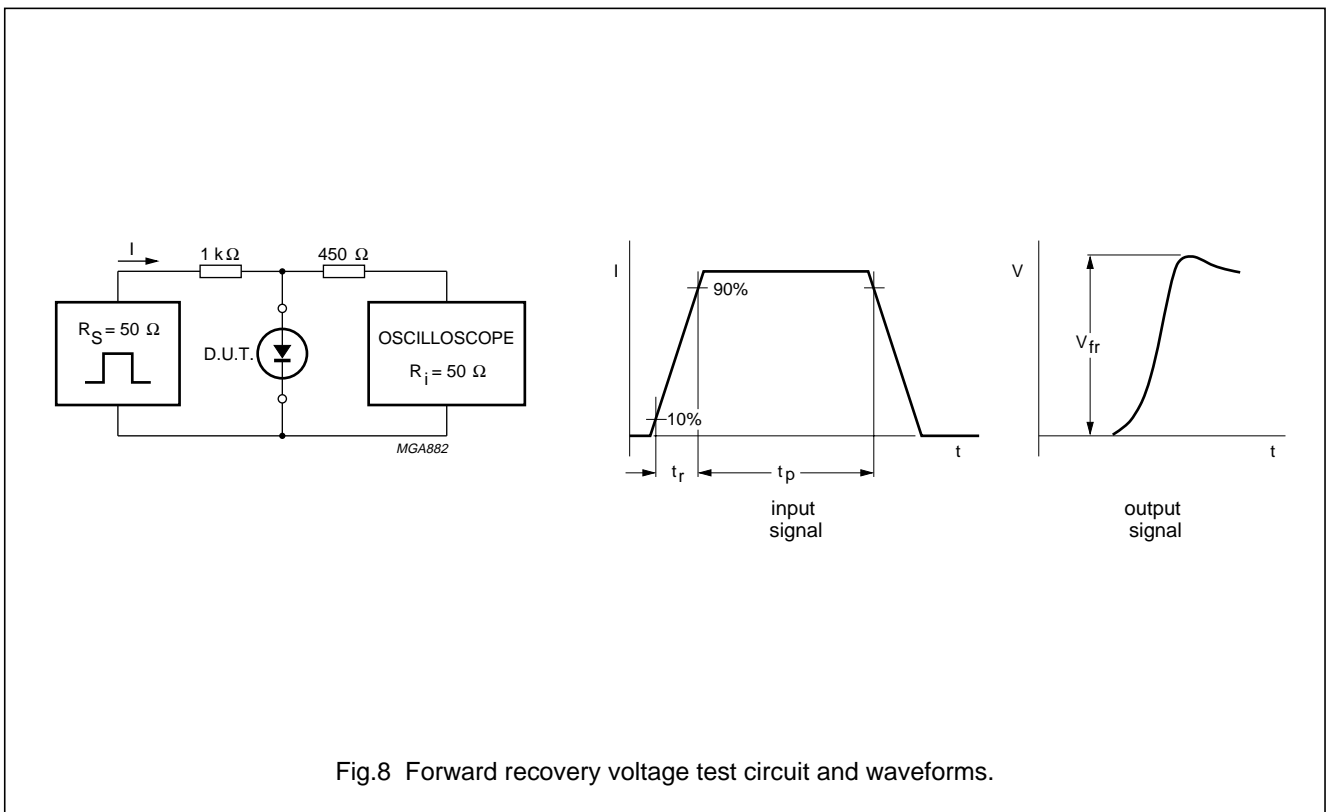
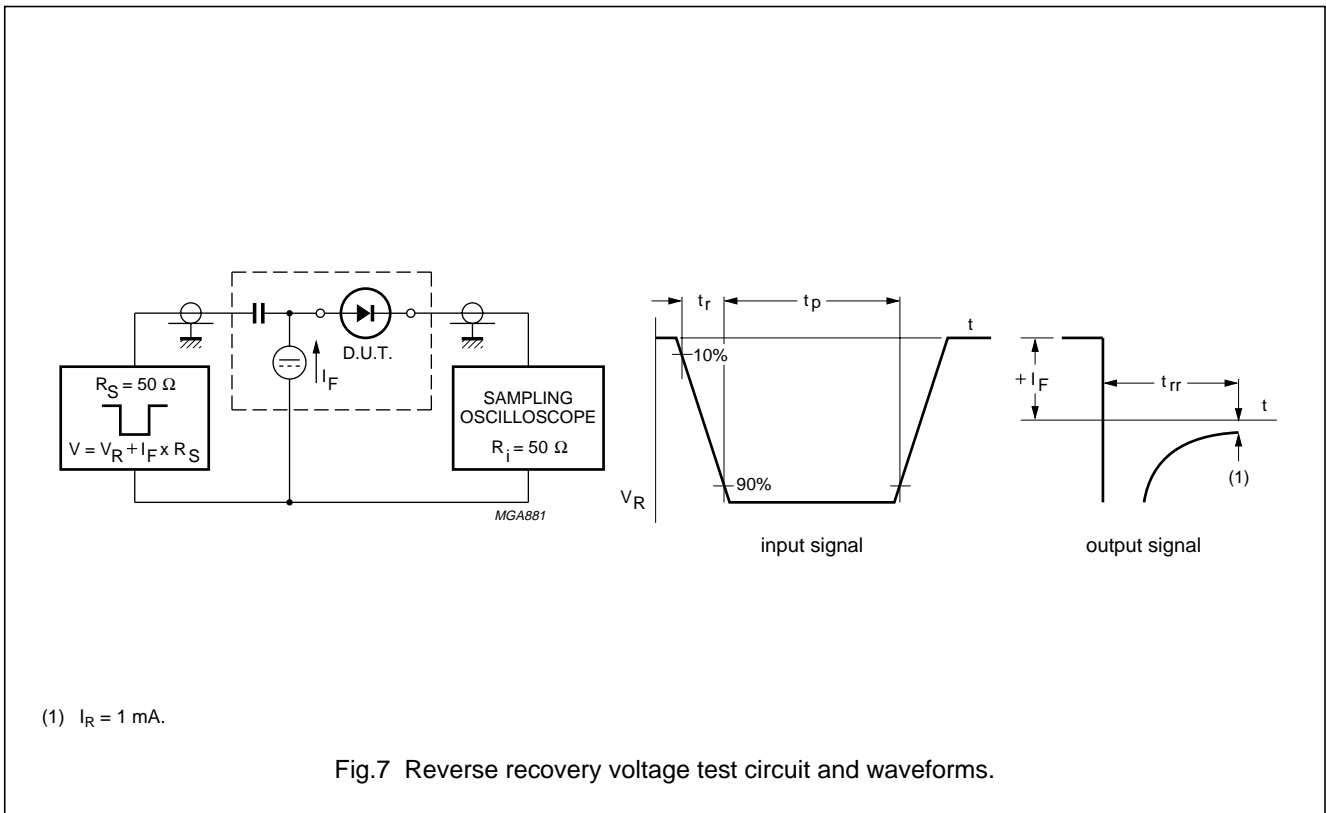
High-speed diodes

1N914; 1N914A; 1N914B



High-speed diodes

1N914; 1N914A; 1N914B



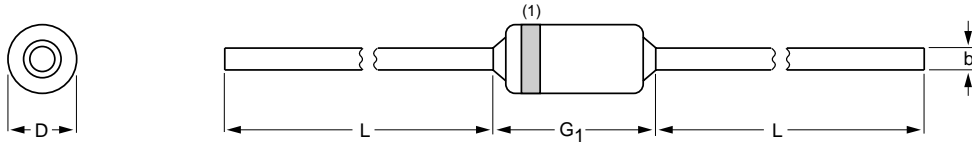
High-speed diodes

1N914; 1N914A; 1N914B

PACKAGE OUTLINE

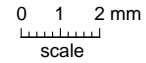
Hermetically sealed glass package; axial leaded; 2 leads

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 |

High-speed diodes

1N914; 1N914A; 1N914B

DATA SHEET STATUS

| LEVEL | DATA SHEET STATUS ⁽¹⁾ | PRODUCT STATUS ⁽²⁾⁽³⁾ | DEFINITION |
|-------|----------------------------------|----------------------------------|--|
| I | Objective data | Development | This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice. |
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NOTES

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NOTES

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NOTES

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