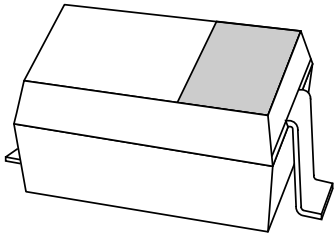


# DATA SHEET



## **BAS316** High-speed diode

Product specification  
Supersedes data of 1998 Mar 26

2004 Feb 04

# High-speed diode

# BAS316

## FEATURES

- Very small plastic SMD package
- High switching speed: max. 4 ns
- Continuous reverse voltage: max. 100 V
- Repetitive peak reverse voltage: max. 100 V
- Repetitive peak forward current: max. 500 mA.

## APPLICATIONS

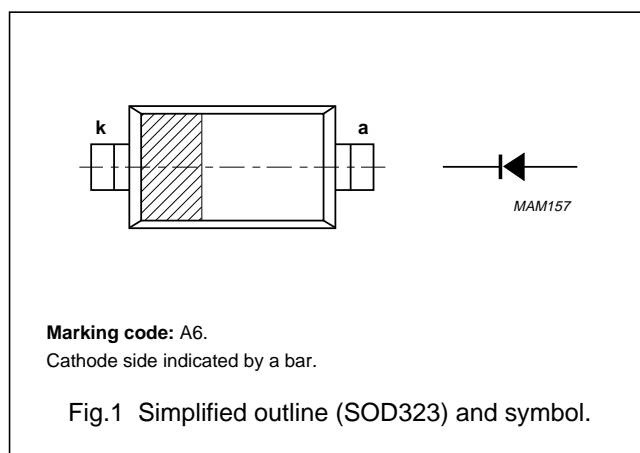
- High-speed switching in e.g. surface mounted circuits.

## DESCRIPTION

The BAS316 is a high-speed switching diode fabricated in planar technology, and encapsulated in the SOD323 SMD plastic package.

## PINNING

PIN	DESCRIPTION
1	cathode
2	anode



## ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BAS316	-	plastic surface mounted package; 2 leads	SOD323

## 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		-	100	V
$I_F$	continuous forward current	$T_s = 90\text{ °C}$ ; note 1; see Fig.2	-	250	mA
$I_{FRM}$	repetitive peak forward current		-	500	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	$T_s = 90\text{ °C}$ ; note 1	-	400	mW
$T_{stg}$	storage temperature		-65	+150	°C
$T_j$	junction temperature		-	150	°C

## Note

1.  $T_s$  is the temperature at the soldering point of the cathode tab.

## High-speed diode

## BAS316

**CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
$V_F$	forward voltage	see Fig.3		
		$I_F = 1\text{ mA}$	715	mV
		$I_F = 10\text{ mA}$	855	mV
		$I_F = 50\text{ mA}$	1	V
$I_R$	reverse current	$I_F = 150\text{ mA}$	1.25	V
		see Fig.5		
		$V_R = 25\text{ V}$	30	nA
		$V_R = 75\text{ V}$	1	$\mu\text{A}$
$C_d$	diode capacitance	$V_R = 25\text{ V}; T_j = 150\text{ °C}$	30	$\mu\text{A}$
		$V_R = 75\text{ V}; T_j = 150\text{ °C}$	50	$\mu\text{A}$
$C_d$	diode capacitance	$f = 1\text{ MHz}; V_R = 0$ ; see Fig.6	1.5	pF
$t_{rr}$	reverse recovery time	when switched from $I_F = 10\text{ mA}$ to $I_R = 10\text{ mA}$ ; $R_L = 100\ \Omega$ ; measured at $I_R = 1\text{ mA}$ ; see Fig.7	4	ns
$V_{fr}$	forward recovery voltage	when switched from $I_F = 10\text{ mA}$ ; $t_r = 20\text{ ns}$ ; see Fig.8	1.75	V

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th(j-s)}$	thermal resistance from junction to soldering point	note 1	150	K/W

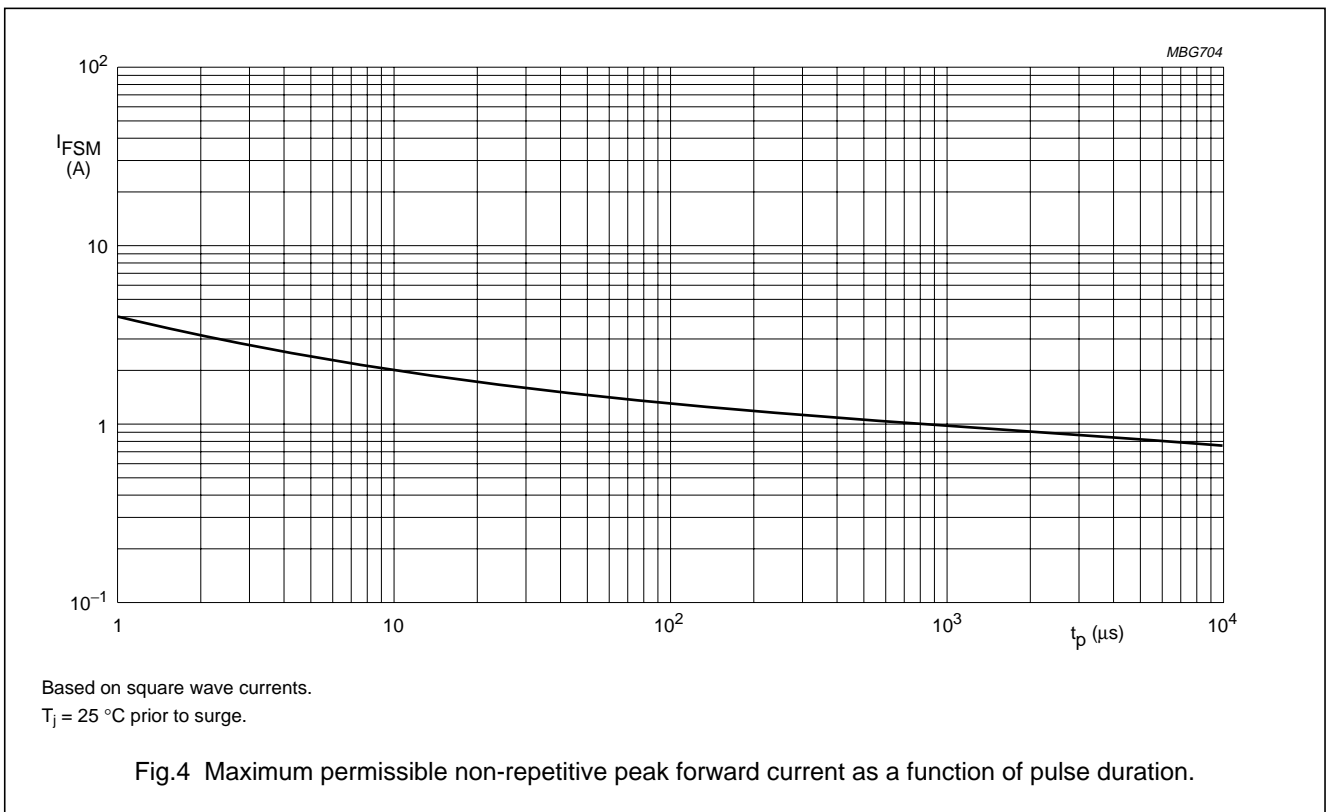
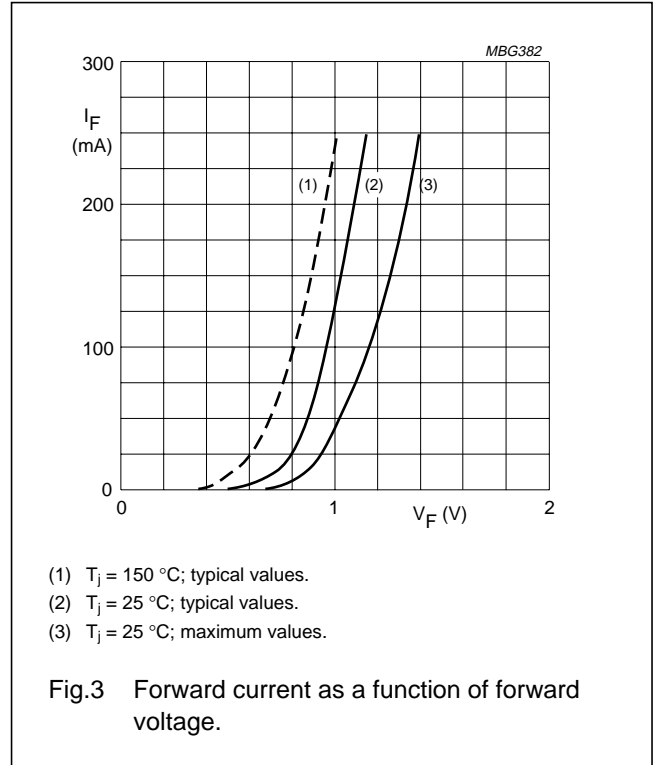
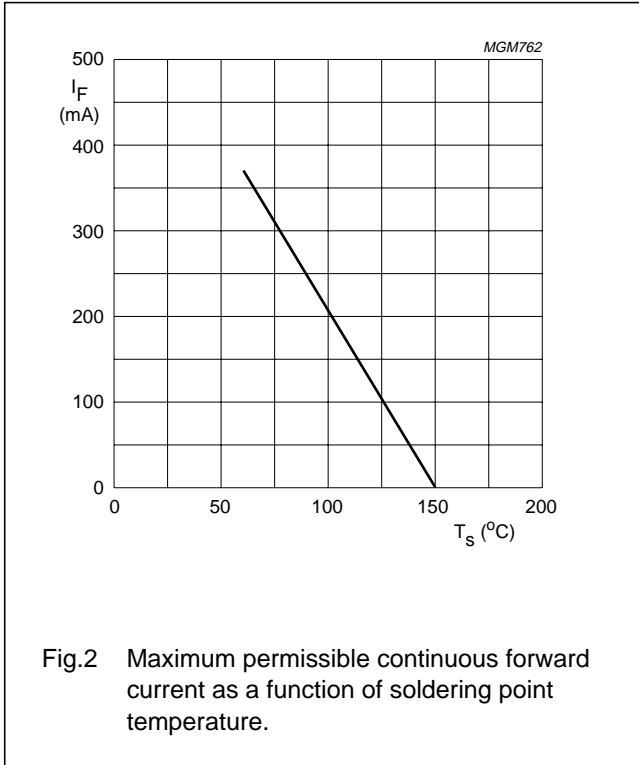
**Note**

1. Soldering point of the cathode tab.

High-speed diode

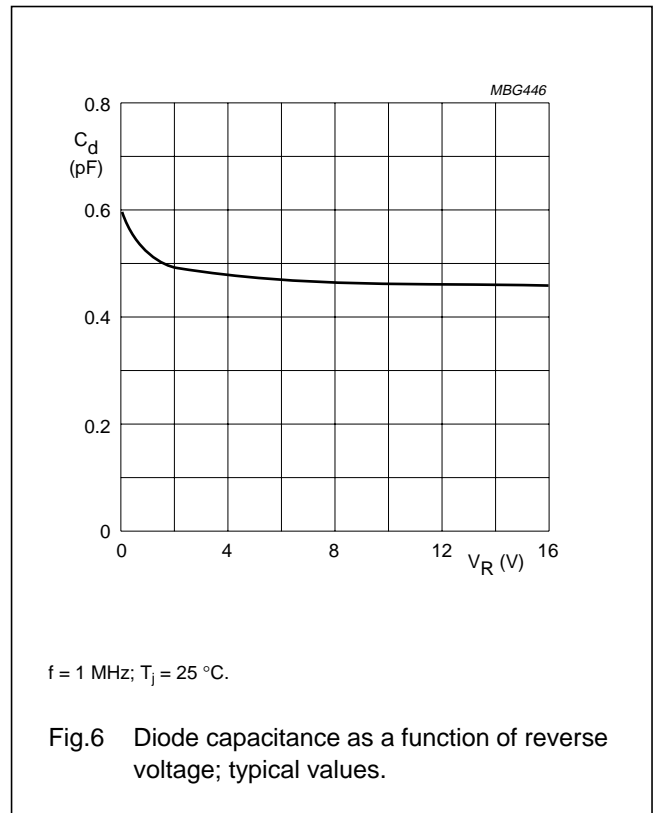
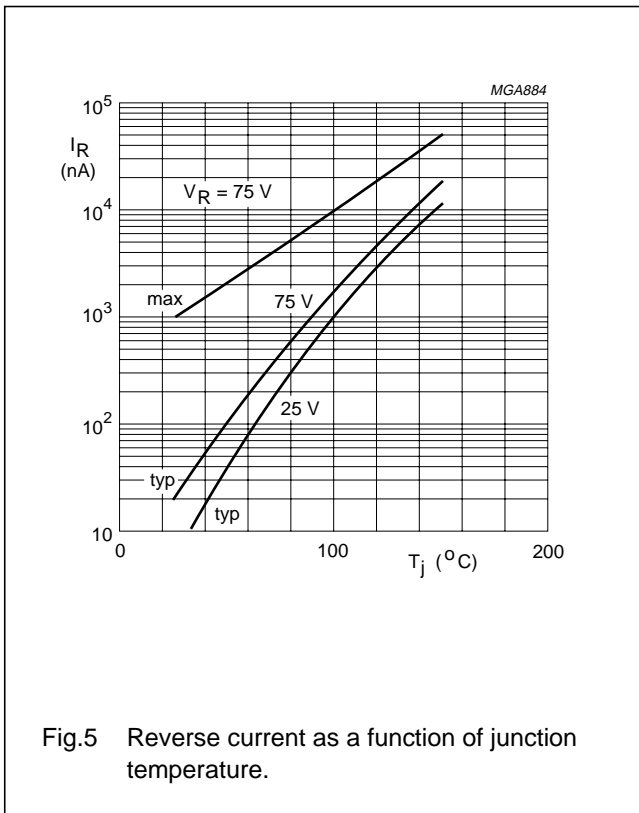
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GRAPHICAL DATA



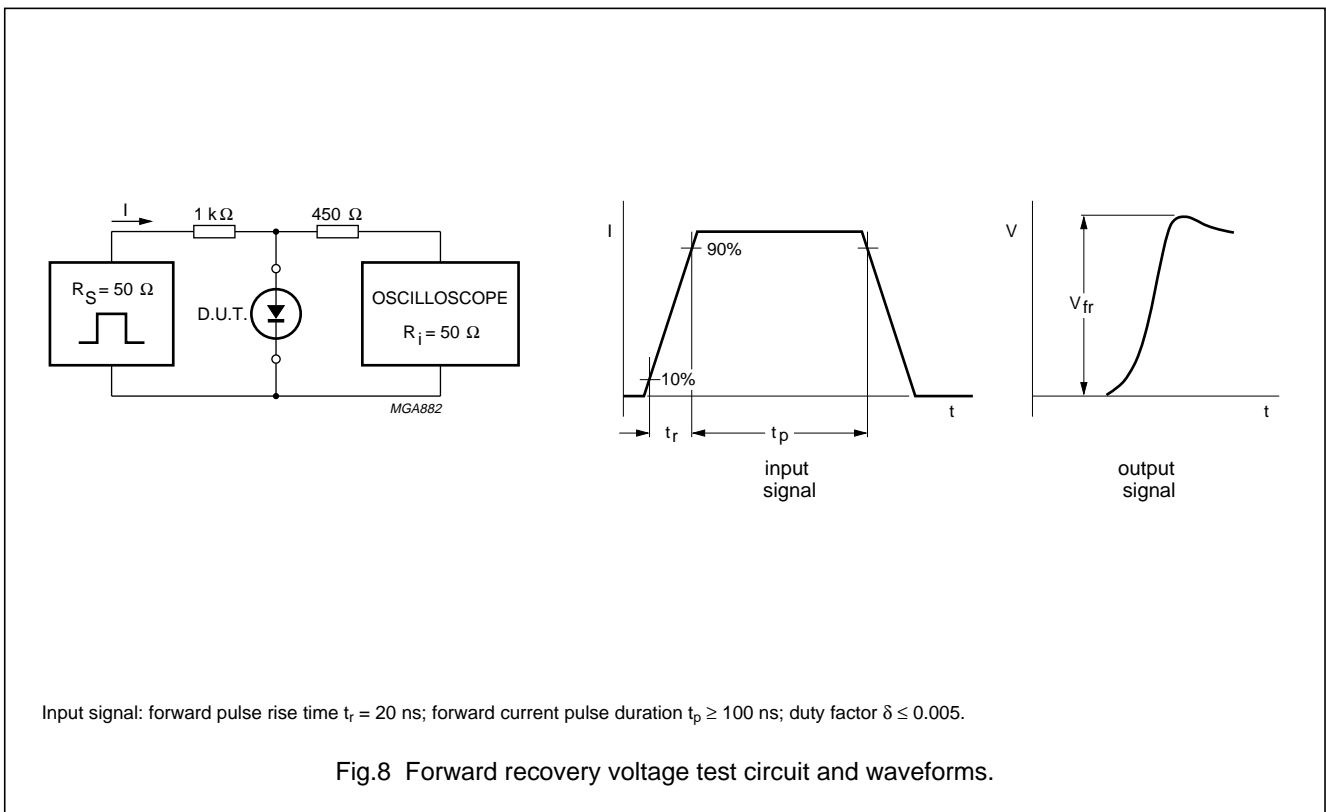
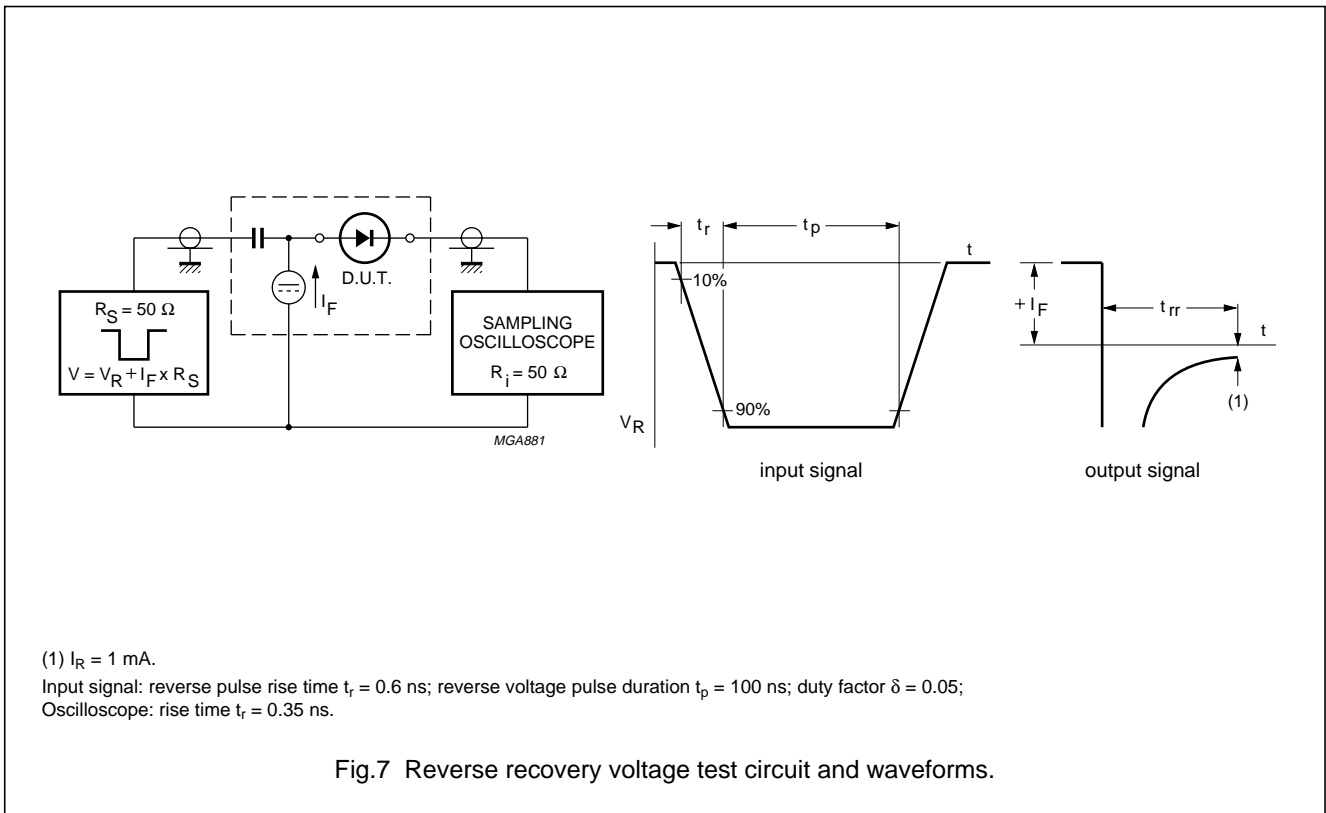
High-speed diode

BAS316



High-speed diode

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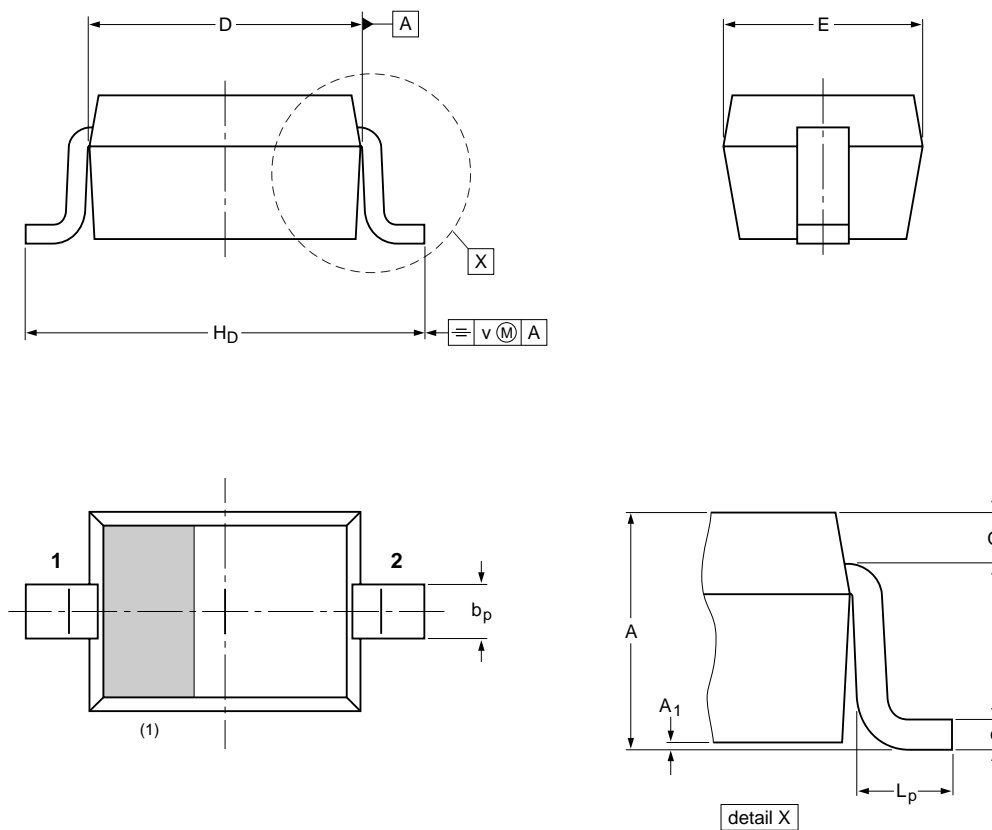
High-speed diode

BAS316

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max	b <sub>p</sub>	c	D	E	H <sub>D</sub>	L <sub>p</sub>	Q	v
mm	1.1 0.8	0.05	0.40 0.25	0.25 0.10	1.8 1.6	1.35 1.15	2.7 2.3	0.45 0.15	0.25 0.15	0.2

Note

1. The marking bar indicates the cathode

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA		
SOD323			SC-76		<del>99-09-13</del> 03-12-17

## High-speed diode

BAS316

## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	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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